Wireframe

LIFTING THE LID ON VIDEO GAMES

A COSY ODYSSEY

EXPLORING **FIXFOX** - THIS YEAR'S CUDDLIEST SCI-FI EPIC

In the games industry, the big keep getting bigger

When *Spider-Man: No Way Home* arrived in cinemas around the world at the end of 2021, the returns gave Sony the biggest-ever box office total in its history.

With the success of the latest Spidey adventure though has come fresh worries about the state of expensive-end mainstream cinema. Following a few months that's seen a varied slate of films struggle to interest audiences and match commercial expectations – *King Richard*, *The Last Duel*, even the latest *Matrix* sequel – questions are being raised as to whether the scope of successful blockbuster films is going to have to get even narrower. Furthermore, as the financial stakes are getting higher, that the number of companies able to make movies at such levels is getting smaller.

Ten years ago, there were six major studios regularly making big tentpole films. Now, there's arguably four left at that scale, and between them, they're making fewer movies for cinemas anyway. Each of those six has also been involved in some form of corporate restructure, or takeover, or merger, or at least been linked with one. Making big movies has become a financial arms race, with bigger stacks of chips being put on safer bets.

Accepting that the indie gaming sector continues to display imagination and innovation (just as indie films often do), it's easy to see the triple-A side of the industry following the same path as its film counterpart. The scale of the Microsoft cheque-book has now seen it add Activision to its roster of assets, amid the usual assurances that it's business as usual. Following its earlier acquisition of Bethesda (and many companies before that), it's a potent reminder

SIMON BREW

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#60

that Microsoft has the biggest war chest in gaming, and what it can't build, it can buy. Even Sony can't match that, and it's telling that in the latest console generation life cycle, it's taken it nearly 18 months to generate a standalone self-published triple-A title for the PlayStation 5. Microsoft hasn't been much quicker with its Xbox Series S/X, but its pipeline seems fuller, and what it doesn't have, it's clear it's just going to snap up. It's not going to risk the wrath of regulators by making *Call Of Duty* Xbox exclusive or anything – which would come with a financial price to it anyway – but it's hard not to see that its own formats will get priority for extras and add-ons. And, of course, on its Games Pass service, that we're promised will not get lots of old Activision games.

Still, I'd argue there's a broader conversation to be had about the narrowing of the top end games market. Last year, we saw EA find just over $1bn to buy Codemasters, in a move that saw the management of the latter depart while its franchises become part of the EA roster. Now Activision is part of Microsoft. Who next? Might Apple – the other cash-rich player hovering around the edges of gaming – try to snap up a firm like Nintendo? Is EA itself a target? The deals are getting bigger, the number of firms who can negotiate the barriers to entry dwindling. Few believe Microsoft's $68bn capture of Activision is the end of this.

It's not certain, either, that gaming will entirely follow the path trodden by cinema, and a breakthrough title like last year's *Deathloop* is certainly encouraging. But still: it's hard not to foresee the big getting bigger, the blockbusters dominating, and ambitious, expensive ideas being increasingly avoided in favour of safer bets. I must admit, though: that Spider-Man film was really rather good... Ⓦ

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WELCOME

Whether it's gathering shells to pay off your crippling mortgage in *Animal Crossing* or painting the town red in *Chicory: A Colorful Tale*, wholesome, relaxing games have been on the rise of late – and that's exactly what we're celebrating in this edition.

If nothing else, this issue provides ample evidence that cosy games can take all kinds of forms. *Smalland* is a survival sandbox that smooths off the genre's harsher edges to create a more whimsical tale about life as a tiny person in a gigantic world. *FixFox* is a non-violent adventure about repairing gadgets and savouring bowls of sticky rice. *Arcade Paradise*, meanwhile, offers its own kind of cosiness, with its business-building mechanics wrapped up in a nostalgic layer of hulking coin-ops and nineties shell suits.

As pointed out in our roundtable chat about the subject on page 28, the popularity of cosy games really began to take hold during the global pandemic; and while Covid appears to (thankfully) be abating, this sunniest of genres looks as though it's here to stay, with an increasing number of studios making their own cheerful, soothing experiences.

Speaking of cosy, there's just room to give a warm welcome to our new features editor, Aaron Potter. He has a soothing Bristolian accent, plays guitar, and has a pet gecko named Dotty. Welcome aboard, Aaron!

Toot!

Ryan Lambie
Editor

Toolbox

Rated

FiXFOX

Cuddly animals meet grand sci-fi in a 2D open-world
adventure from the Czech Republic

With its furry protagonist and obsession with comfort food, there's a wholesomeness to the upcoming *FixFox* that contrasts quite strikingly with its sci-fi world-building. It's set in a future where humans have begun splicing their genes with those of animals in order to survive the harshness of space: fur insulates them from the cold; their new-found ability to hibernate means they can sleep through the long journeys between planets. Such is the backdrop for a top-down adventure where your primary objective, as vulpine mechanic Vix, is to explore an alien world populated by robots, repairing the locals' broken-down household appliances.

When coming up with *FixFox*'s premise, Czech developer Jaroslav Meloun was inspired by, of all things, the lofty genre classic, *2001: A Space Odyssey* – which also pops up in another Wireframe game this month: *Naut*, on page 78. "Interstellar transcendence may not come to mind when you see a cute pixelated fox

"Interstellar transcendence may not come to mind when you see a cute fox"

eating a bowl of rice," Meloun concedes, "but the strong contrast between the intimately personal stories of the main characters and the grandiosity of mysterious events that brings them together felt like a really interesting plot to tackle."

Roam around *FixFox*'s open world, and you'll discover a varied landscape of desert, farmland, and mountains, with their own communities, cuisines, and stuff to repair. Those repairs are made by solving puzzles, which, in turn, triggers food-themed challenges. "As a reward for fixing machines, you get to taste some of the local cuisines, which is also a first-person minigame," Meloun explains. "The local robots have a strange rule: along with sharing a meal, the host must always share a secret. You'll need to pay ➡

Info

GENRE
Vulpine adventure
FORMAT
PC
DEVELOPER
Rendlike
PUBLISHER
Joystick Ventures
RELEASE
2022
SOCIAL
@fixfoxgame
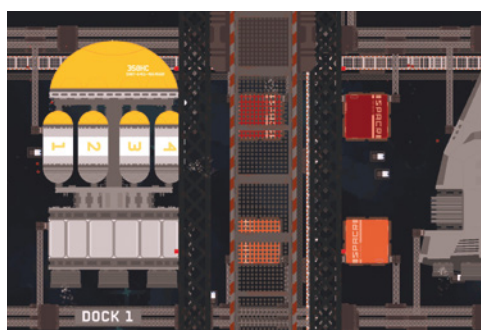
⌃ There are various ways of getting around in *FixFox*, including four types of huge mecha, which you can repair and use to explore.

‹ *FixFox* originally began life as a much bigger, intergalactic roguelike called *SPACR*. Realising the scale was a bit much, Meloun pared the scope back to one planet.

IN THE BEGINNING

Before the fur and comfort food went into the mix, *FixFox* started out as a somewhat different project – one even larger in scope than the one Meloun's now working on. "It started as a fever dream of making a sci-fi-themed 2D roguelike game with realistic physics and a procedurally generated universe on a galactic scale," he tells us. "It was originally called *SPACR*. Being a solo developer, I gradually realised the scale of this dream was impossible. I started shaping the design into a more accessible and feasible form… I've worked on smaller game jam games before, but nothing of this scope. I jumped on this project with eyes wide, filled with passion, and no clear plan. Slapping a bunch of prototypes together and seeing what sticks is how the creation of *SPACR* began initially. Only much later did I come up with a more cohesive plan, which helped me carve out a more focused idea, and eventually I renamed the game *FixFox*."

attention to the conversation while eating, sifting out the hidden nuggets of wisdom that will help along your quest. Food is a big part of the *FixFox* world – it just adds a feeling of comfort and cosiness."

Your furry odyssey will also take you off-world, to "mysterious, ancient objects" orbiting the planet. "Towards the end of the game," Meloun says, "you'll even get to venture where no human or fox has gone before."

With its mixture of exploration and repairs, there's a lot going on in *FixFox*, then, and Meloun concedes that he's never embarked on a project of this scale before. But by procedurally generating certain elements in the game, including the terrain and puzzles, he's managed to find a way to get the scope he was looking for as a solo developer. "I've had to create my own tools, of course. Since the terrain is procedurally generated, I made a system for crafting tiles with pseudo-random variations. So I'd create a building with multiple variants of decorations, then a village with multiple building variants, and boom! The game was able to spawn countless small villages with each looking a bit different.

"A similar system was used for the repair puzzles… there are dozens of fixable elements, and the innards of each machine that you need to fix are generated from a random selection of these elements. A few of these puzzles are pre-scripted in the tutorials, but the rest are procedurally generated, always different, theoretically allowing for an infinite number of combinations."

^ *FixFox*'s planet may be populated by robots, but their personalities are far from mechanical.

The global pandemic and the arrival of a new baby have added an extra layer of challenge to *FixFox*'s development – the latter making time management an even more critical element of the game's production than before. "I started working on the game in the middle of 2020, and the whole world going upside-down due to the pandemic didn't help my mental health or ability to focus," says Meloun. "But working on the game has been my dream for so many years, so I just clenched my teeth and worked as hard as I could. A few months into the production, I became a father. We had everything planned perfectly – I'd take a break at that point for a few weeks, then start slowly ramping up the working hours again. But, as it happens, the reality of it caught me by surprise. Our baby proved to be very high-maintenance, requiring more of our energy than we expected. I wanted to be with my family, but also work on my dream project, so the toughest task has actually been trying to make both work, and finding a balance."

What's clear, though, is just what a personal, heartfelt game *FixFox* is. It's steeped in the genre fiction Meloun loves; its top-down perspective is inspired by the original *Grand Theft Auto*, one of his favourite titles as a youth; there are collectable cassettes dotted around its world, which are a nod to his first computer.

"With the Iron Curtain still holding tight, commercial computer games weren't available, so my first experience came from mobile arcades that arrived once a year with a travelling funfair," Meloun says of his childhood in the Czech Republic – or Czechoslovakia, as it was then called. "Once the Iron Curtain crashed down in 1989, the first 8-bit computers started seeping in. When my parents brought home a cheap Atari from a newly accessible East Germany, I was mesmerised. Shortly after, thanks to an old

^ The food theme continues into the repair puzzles, with some machines requiring edible components – honey, herbs, and the like – to fix.

textbook, I wrote my first program in BASIC. I was hopelessly hooked. Making games was what I wanted to pursue in my life."

By the time Meloun reached his college years, he'd set his sights firmly on becoming a game designer – but here too he encountered a stumbling block that would, in a roundabout way, eventually lead him to making *FixFox*. "I was learning to make games, getting ready to start my career as a game developer," he recalls. "The problem was that there were no game studios to join at the time. More precisely, I thought I lacked the experience to be hired. So I took a small detour into computer graphics and programming, finally getting into games a few years later. I learned the basics at a few mobile game startups, then joined a punk indie studio, and finally worked a few years of independent freelancing before taking on my first project, which became *FixFox*."

"You'll get to venture where no human or fox has gone before"

Maybe it's only fitting, then, that *FixFox* is about a character who's had to adapt to survive in their particular climate – and has to improvise and make the most of the resources available to them in order to get by. The warmth of *FixFox*'s characters and plot are also a product of Meloun's personal game design philosophy, which coalesced when he visited Japan. "I used to play all kinds of games, not being very picky, including shooters and oddities
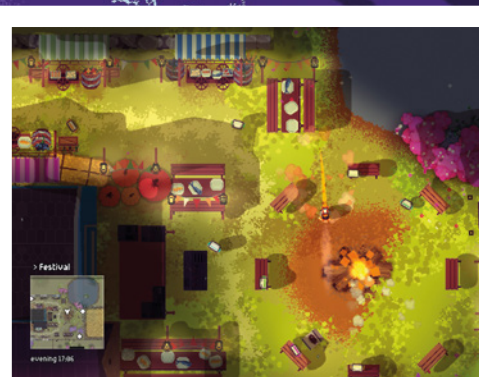
like *Carmageddon*," he says. "Then in 2012, I visited the Peace Memorial in Hiroshima, Japan. Witnessing the records of horrors that humanity is capable of shook me very deeply. With games being my main channel of both entertainment and creative expression, I vowed to stop playing and making games that feature violence."

That's *FixFox* in a nutshell, then: it's an adventure that tackles mind-expanding themes, but in a playful, human way that is uniquely the work of its creator. "In my eyes, on their deepest level, games are a medium that teaches us and shapes our thinking," says Meloun. "I decided to focus on making games that teach us kindness and empathy, which I think are skills more useful in our everyday lives, as opposed to force and coercion. I won't be able to change the world, but maybe I can make a small corner of it a bit better." ⓦ

WRITTEN IN INK

With its wealth of locations and inhabitants, *FixFox* is, Meloun points out, a "pretty chatty" project, with a script that weighs in at around 50,000 words. To write the script and get it in the game, Meloun turned to Ink – Inkle's proprietary narrative scripting language. "Since its data format isn't best suited for proofreading," Meloun explains, "I've invented my own system to tag each script line with a code, then sync them all automatically to an online spreadsheet, so that the proofreaders could easily edit the text, then I could pull the changes back into the game."

Ink co-creator Jon Ingold wrote a handy guide to using the language in Wireframe #29 – you can download it at **wfmag.cc/29**.

All the small things

Merge Games talks us through the process of making Smalland: a tiny survival game with big ideas

Before Smalland, there was 'Smalland: the Indiegogo campaign' – a 2017 effort to crowdfund a survival game about tiny people scratching out an existence in a huge, hostile world. As is often the case with original ideas on crowdfunding platforms, though, Smalland failed to reach its minimum goal of £36,876. Its concept, however, soon caught the eye of British studio Merge Games. "The project was originally owned by a very small team," the game's head of production, Ben Averley, tells us. "They realised there was something about the concept that really engaged people, and it generated a load of interest in the community, but the team was clearly struggling... At the time, it was very much a prototype, but Merge Games had a lot of faith in it."

One IP acquisition later, and Smalland got a second life at Merge. In the four years since, a team of around seven or so 'decentralised' artists and designers – among them a couple of members behind the original Smalland prototype – have been working away at turning those initial ideas into a workable reality. It was a process that, Averley says, required the team to pretty much throw out everything that was built before. "We effectively started from scratch. A lot of the art was in a very different style to the direction we felt the game needed to take. So we dropped all of that, all of the original assets, and we pulled in entirely new assets for everything from the characters to the world dressing... in the background, we updated the engine version a few times."

Fundamentally, though, Smalland remains true to what was pitched back in 2017: it's a multiplayer sandbox where you can craft and wield weapons to fend off attacks from wasps the size of Shire horses. You can tame and ride grasshoppers and leap across canyon-sized puddles. There'll be quests to go on and a story to follow, but you can just as easily spend your time exploring, foraging, and building your base. There are PvP battles, but this is an altogether less competitive, in-your-face kind of survival game.

Over a refreshing cup of tea, then, Averley told us more about Merge's plans for a very different, more whimsical take on the genre.

^ Some creatures you'll encounter in Smalland will put up a boss-battle level fight.

Can you give me an idea of the backstory and lore behind the game?

Sure. You're a small, sprite-like race of creatures. So they're not humans that have been shrunk down – they're these incredibly small humanoid people. We affectionately call them 'small folk'. I don't know if that's going to be their official name, but [that's what] we call them! The idea is that they've lived underground for a long time in the darkness, sustaining themselves on the roots of trees and fungi and whatever they could find. Something's happened on the surface of the world, and humankind's no longer present. Nature has started to grow back. And so, the small folk decide to venture out to see whether there's a new frontier out there on the overworld, to try and claim and expand into. And really, that's the driving factor behind the game… it's about forging a home in this entirely new environment.

I wonder if camera positioning is pivotal in a game like *Smalland*, because you've got to sell the player on the idea of scale – that you're a very small character in a huge world. What are the challenges there?

It's difficult, because we provide both first- and third-person views to the player, so we have to make sure that the scale works in both perspectives. Then we have to consider interiors and exteriors. So we do have to make sure everything reinforces the sense of scale. And that's generally not so much done through the camera itself – it's more done through intelligent level design, to make sure there are things on
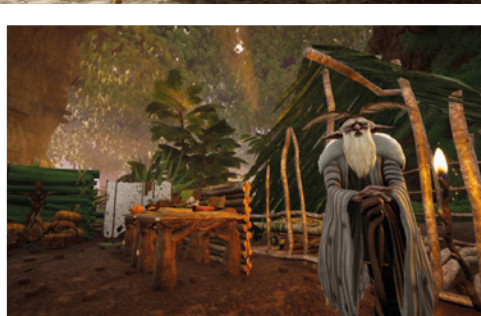
^ NPCs play an important role in *Smalland*, providing quests and useful detail about its world.

the ground, dressings in the world, to make you feel like you're very small. Almost everything is taller than the player, and that's clear from every perspective. So it's about building a world where it's designed to almost always be bigger than the player.

I guess that sort of feeds into the creatures and the backgrounds as well. Is there a challenge there, when you're recreating things that people see all the time in real life?

Yes, there is. That's a core of building a game with this scale: we want things that are recognisable exclusively through their silhouette. Take something like a can-opener, for instance: it's a very recognisable silhouette. Everyone knows what a can-opener is, but everyone's used to seeing it at a scale where it's in your hand – it's a very small tool. In *Smalland*, it's as large as a two-storey house, so we have to think about the intricacies of showing off the mechanics differently. You might not think about the detailing on the handle and the way that the metal flattens and twists in places. So we ➡

CUSTOM NPC

Guiding you through *Smalland*'s narrative are a number of colourful NPCs – among the cast you'll find an engineer called Knock, who'll explain how the tech tree works and how to craft, and Averley tells us there's "a historian somewhere, stashed away in the world". Generating these characters is, we're told, a back-and-forth process of writing and design. "As a team, everyone has their opinion," Averley says. "We'll refine an idea together because we have such an intrinsic understanding of what we're trying to get across in the game. From there, we hand off to a character artist who develops the art based on the concept. We technically implement it, we add all the quests, so we can see how they move, how they look, how you engage with them… then we go full circle, back to design, and continue to develop the narrative."

TINY GAME, TINY TEAM

For a project of its scope, *Smalland*'s team of roughly seven to ten developers might seem almost as diminutive as the people in the game itself. "The team's very small, considering the game's ambition," Averley concedes, but later adds: "Obviously, it would be nice with such a large project to maybe have a team of 50, but that does become hard to coordinate and manage. I think with the focused, skilled team we have, it allows us to keep the game feeling as though it's been made by an individual, and the world feels cohesive as a result."

have to emphasise all of those things to say there is something here you've not noticed before in something that you see every day.

The creatures, in particular, are difficult: everyone's used to seeing spiders, for instance. They're a mechanically complex creature with their eight legs, and various joints on each leg. And while we do try and stay as true to the real world as possible, you do have to gamify how it works a bit. If a spider in the game behaved exactly like a spider in the real world, it would run a thousand miles an hour, grab things and furiously wrap them up in half a second, which wouldn't make for a very fun experience as a player. So we've had to take some license in translating what's real, particularly in the creature animations, and what can work as a gameplay experience that people will enjoy. Animation itself is very tricky because we're working from real-world reference, and we're having to, in this gamification process, reimagine how things might move. So the animations are particularly difficult.

What variety of creatures are there in the game? Do you have a vague number of how many different insects and other life forms there are?
There'll be approximately a dozen different species of creatures around the Early Access launch. The numbers are still to be confirmed because we're constantly pushing to try and add as much content and richness to the world

⌃ There are reminders here and there that the landscape you roam once belonged to full-sized humans. Here's a not-so-subtle one.

as possible. And we do have plans through the Early Access development cycle up to the 1.0 for launch to add many more creatures as we continue to expand the world.

We have a lot of creatures, though: the grasshopper and the ladybird. We have several varieties of spider. We also have fireflies, butterflies, moths, several varieties of beetle, a lizard, dragonflies, and damselflies. Those are the key creatures you interact with at this stage in development. And we have others in the works, but they're not quite ready to be shared yet.

The systems in the game sound interesting – how they all interlock. But is there a food chain as such? Might you see, say, a spider eat a small insect?
Yes, yes. The world's built to mimic many of those natural behaviours. We have a complex network of how these creatures will interact. Should they have the opportunity to meet one another in the environment, everything's on a scale, whether it's a prey creature all the way down the bottom or an apex creature all the way at the top. Something like a large spider is an apex, so if a spider meets anything – including some other spiders – it may well attack them on sight. But then a ladybird doesn't predate anything in the world, so it's at the bottom end of that scale. And then we do creature-to-creature interactions where, for instance, wasps and bees have a very specific relationship in nature.

With taming certain creatures, how much detail is there in terms of what you can do?
Roughly half a dozen creatures will be tameable at launch, and the majority of those will be rideable as well. There are a few different benefits to taming creatures. Some may fight alongside you when you're attacked by something, so they act as a kind of territorial pet.

Arachnophobes may want to take a deep breath before playing *Smalland*. Please don't make us go in here. Gibber.

Others could be used to bring you resources, but that's still something we're working on in secret. Creatures that can be mounted can obviously be ridden around the world – we have a variety of these creatures and they can move in different ways. Grasshoppers can allow you to bound over great ravines, which are just cracks in the ground to us. Dragonflies allow you to hover over a body of water that you otherwise can't swim through, because you're incapable of swimming at this point.

So in terms of the survival genre, do you imagine *Smalland* as being a relatively welcoming game or on the more harsh end of the spectrum?
Relative to a lot of other competitors in the survival genre, we're trying to stay true to the original vision of the game, which is that it's quite whimsical. To put it relative to a game such as *ARK* or *Rust*, it's far less competitive. It's more about being collaborative with players, so we don't have that combative player-versus-player nature as a major focus. The challenge is almost as much as you want it to be – players can seek out the challenge. It shouldn't be consistently overbearing and too difficult. It's not like starting in *ARK* and having your entire base destroyed by a T-rex in the first five minutes; we want it to be a bit more accommodating and accessible to players. But there's certainly challenge there, and there's certainly threats present throughout the world. It's at the lower end of the spectrum, though, I'd say, relative to other survival games.

So what's the key to designing an interesting open world – one that isn't just big, but worth exploring?
As far as creating a working, successful, engaging open-world survival game, obviously, the scale itself is hopefully something that's quite unique as an offering to *Smalland*, and will encourage people to explore the world. But beyond that, we have a narrative, so we have quest systems that drive players into different areas to explore. We have resources that vary by area, which, in turn, allow different crafting opportunities for gear, weapons, and bases. So we have player progression gated behind the need to explore these things, and hopefully each brings a new point of interest.

How much work's gone into the combat? Is that a system that's taken a lot of time to refine?
It's an ongoing battle, refining the combat, and the majority of focus has been an effort to improve and refine the player to creature experiences, but it's been built with PvP in mind as well. It's tricky to get right. You move slightly differently because of your scale, you're a bit lighter because of your strength to bodyweight ratio. It's a little bit strange when you get into the undergrowth of the world, so we have had to make a couple of adaptations there, but we do have melee and ranged combat, both of which we've been honing for PvE.

We've had to build our own animation sets. We've got a lot of unique rules to abide by, particularly with so many different types of ➡
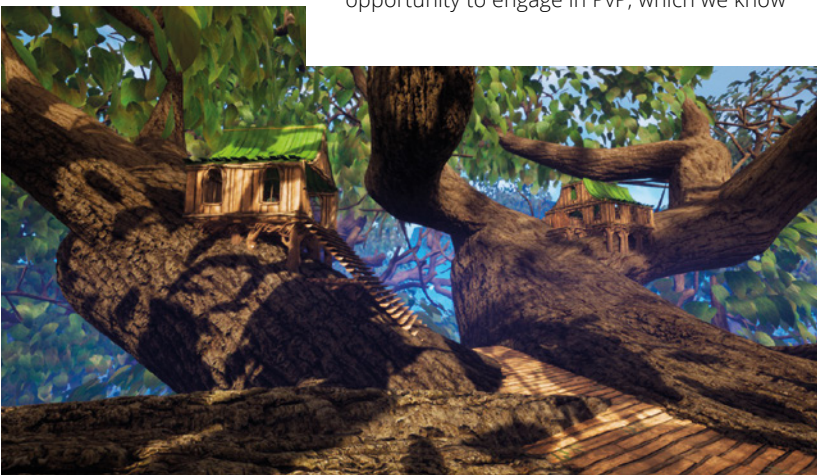
If you've ever fantasised about defeating a giant wasp in mortal combat, *Smalland*'s your game.

▲ **Armour's customisable, and there'll be six or seven variants of wing – perfect for gliding gracefully from a colossal tree, say.**

▼ ***Smalland* has all the base-building you'd expect to see in a survival game. The difference here is that your bases are the size of thimbles.**

creatures – some that are up to your waist, and some that are five times bigger than you. And that's been a particular challenge that we've had to deal with and make look good, whether you're using the same sword swing on something that's half your size or something five times your size. We'd been overcoming that mostly through clever use of animation and really tight bounding on collision for combat.

At the moment, PvP is optional. When you create a server or you join a server, you can have PvP enabled or disabled. We want the game to be collaborative, and we don't want players to accidentally shoot one another in the back of the head with a bow and arrow. But we do also want to open up the opportunity to make it accessible to players and give them the opportunity to engage in PvP, which we know

is an important part of the survival genre for a lot of players. So you'll be able to invite random people in and you can have a little brawl. We don't have any encouragement right now for you to engage in PvP, it's just a bit of fun. Again, it's not like *Rust*, where you do base raids to steal a load of someone else's items and resources. It's really just about who's better in the moment, but we do have plans through Early Access to expand on the PvP.

What's been the biggest challenge so far, would you say?

The biggest challenge has probably been in realising something so unique. We've gone through a lot of design iterations to try and craft this experience almost from scratch. As I said, a lot of what was seen early on was quite staged, so there was very little there to work with. We had to go from something that hadn't been developed but had all these visuals and ideas, then we had to find a way to technically create that and to make it possible.

There are some things that are just way outside the realms of possibility. And there are a lot of things that we could achieve and we've done our best to achieve as many of those as we can to stay true to the Kickstarter and the community, but the design aspect has been massive. The game almost sits somewhere between a single-player RPG experience and an MMO. And it tries to tackle a lot of things – the design is an incredible network of ideas that all relate to one another, that have to be

carefully considered. One change in any area could impact 150 other small mechanical parts of the game. So that's probably been the biggest challenge – just the pure scope of the project.

Smalland's been in development for a long time, and in the interim, Grounded came out. So how is Smalland different from Obsidian's game?
Grounded feels much more like a quite fixed RPG-type experience, and less in the survival space. It does have similar elements, and we'd never deny that when they announced *Grounded* over at Obsidian, it was very much a surprise. But we'll always welcome that kind of competition and to have more games like that in the market. It's fantastic. But really, you know, they've got this quite fixed, linear experience based around the robot that guides you through the narrative; it's one to four players, and it's very much made to be an RPG. They have more of a focus on quite a limited pool of crafting… I don't want to bash it, but it's relatively confined; it's an RPG in a somewhat survival space.

I'd say *Smalland*'s world is larger, and will continue to expand as well. They've built their game to have very strict confines as to progression and where you can explore, and very linear paths. We want our world to be a sandbox, with as much opportunity and freedom for the player to choose how they explore and how they engage with it as they can. We're also probably a bit more true to the survival genre, and offer a bit more of an organic simulation as well, in the way that our creatures and our world interact with the player.

So finally, what's left to do before Early Access?
We're doing a lot of closed testing. We have our Merge Games test group, which people can sign up to.

We're doing various tests at the moment. I can say what it's about: it's a prototype for a set of movement changes to creatures as well as a prototype for a new player. Then there's equipment that gives you different types of movement – we have a couple of different types of grapple to allow you to swing [Indiana Jones-style] across things, or there's a new one which allows you to propel yourself forward on, like, a bungee grapple. So we're continuing to refine a couple of these movement aspects as we finish up the world creation and wrapping up some of that story we talked about, while leaving it open to continue developing during Early Access.

We're adding a couple of extra creatures in the background – I can't say which ones yet – and continuing to just refine and polish all of the experiences in the game dressing.

There's a lot of balancing – boring stuff that people probably won't be interested in, but balancing all of the values of the health, the damage, the resistance, all of these things.

That's really a big bulk of work. We're just continuing to add as much content as possible: building pieces, additional resources, additional things to craft, and things to do. That's really what we're working on. ⓦ

Smalland is due to hit Steam Early Access later in 2022

BOSS BEETLES

Among the various creatures in the game, you'll occasionally encounter unique, 'unicorn' variants – such as a species of grasshopper with its own colour pattern or movements. Some of these variants are also more aggressive than the rest – giving *Smalland* what could be described as its equivalent of boss battles. "We have some very large spiders in here, and they're potentially boss encounters," Averley tells us. "It's the same for the beetles, which are generally passive, but if they're attacked or angered in any way, they can become exceedingly aggressive, and they're obviously quite powerful creatures in our scale. So we do have a particularly large beetle that we're looking to make into a boss encounter."

Been spendin' most their lives livin' in the…

Arcade Paradise takes us back to an age of rooms full of wonderfully noisy coin-ops

f you're old enough to have lived through the eighties or early nineties, you may recall that arcade machines used to turn up in the most random places. It wasn't uncommon, for example, to spot a battered *Space Invaders* cabinet standing in the corner of a fish-and-chip shop, covered in a film of grease, or to stumble on a *Double Dragon* machine at the back of a café, its buttons lightly melted by cigarette burns.

Nosebleed Interactive founder and CEO Andreas Firnigl is certainly old enough to remember that bygone era of ubiquitous coin-ops: he still recalls the first arcade he ever visited, tucked away in the "grotty back room" behind a VHS rental shop. *Arcade Paradise*, then, is a management game steeped in Firnigl and his team's memories of that era: "You start off working this dead-end job in your father's launderette," he tells us, adding that it's a scenario "very much influenced by a bunch of dead-end jobs" he did himself as a youth.

There's a motivation for completing your daily chores, though: you play as Ashley, whose long-term aim is to turn the dusty room behind the launderette into a buzzing arcade, and so all the cash earned from completing minigames is funnelled into buying cabinets for your new venture. "We try to balance things so that the player is rewarded for everything," Firnigl explains. "So collecting rubbish is like a mini RPG fetch quest ending with a little basketball game where you throw [the rubbish] in the bin… cleaning the toilet is a little boss battle, and winning increases the business' cleanliness and reputation, so you get a little boost."

There's more to *Arcade Paradise* than management, too. All the machines you acquire for your arcade are playable, and can range from fictionalised takes on the monochrome shooters of the late seventies to more advanced, late nineties-style brawlers with detailed sprites. You'll even find a *Bomberman*
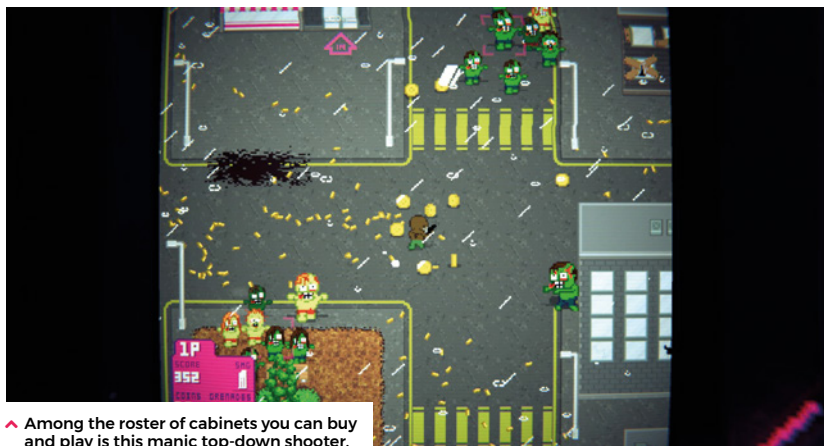
∧ Among the roster of cabinets you can buy and play is this manic top-down shooter.

Some games are straight out of the 1970s, but others, like an RPG-puzzler hybrid called *Woodgal's Adventure*, will be more lengthy and complex.

clone among *Arcade Paradise*'s roster of 35-ish games. "We wanted to do a sort of historical whistle-stop tour of the different graphical styles throughout the decades," Firnigl explains. "So you'll see some old seventies cabs with vector graphics and really low-resolution monochrome displays. The older the machines, the kind of worse the displays are, so one of the oldest games has this really dodgy monitor with loads of noise and screen tear and so on."

Like everything else in *Arcade Paradise*, playing those games will result in rewards in the management area of the game: playing a coin-op will boost its popularity and, in turn, increase your profits, for example. But whether you choose to spend all day tapping away at your collection of coin-ops or earn cash by completing other tasks around the launderette, there's always a motivation to progress – not only will you be able to purchase more machines for your arcade, but you'll also have an impact on the environment around you. As the business grows, you'll have the option to expand the premises; meanwhile, the surrounding neighbourhood will gradually flourish from a grey hellscape to a clean urban community.

SILENT SCOPE

Given that Nosebleed Interactive has a 3D open world to build as well all those arcade games

"By far the biggest challenge is the sheer size of the game"

that exist within it, scope has been a major challenge during development. "I think by far the biggest challenge is the sheer size of the game," Firnigl tells us. "The physical space you walk around in might be restricted to the street outside, the launderette, and the arcade, but in terms of systems and the variety of gameplay on offer, it's absolutely *huge*. I think even next to some of the bigger, open-world triple-A games, we compare very favourably on that front. It probably doesn't help that I'm a bit of a perfectionist, so balancing and tweaking each of the arcade machines has taken a lot of time and effort. It's our goal to become known as the most generous developer out there."

All that perfectionism is going into a game that, if all goes to plan, will provide the ultimate nostalgia fantasy for players of a certain age: you're building a mini-empire, one hulking chipboard cabinet at a time. "When Ashley buys a new game for the arcade, the player has to wait until the next day for it to be delivered," Firnigl enthuses. "They still have to do these chores, so there's some suspense and anticipation there. But when it arrives, we play this totally elaborate and over-the-top loot box-style animation. For Ashley, it's exciting because the business is growing, but for the player, they're looking forward to being able to try out a new game, too." ⓦ

CABINET RESHUFFLE

One of the things that stands out about *Arcade Paradise* is its dedication to the minutiae of real-world cabinets of days past. The names may be entirely fictional, but you'll probably recognise the styles: there are the classic upright cabs, gigantic arcade racing cabs, and even a rendition of the curvaceous Astro City machines once seen all over Japan. "Not every arcade game has a unique cab," Firnigl points out, but adds: "That said, we do have quite a big variety, with some of the showcase games having their own unique cabs… In terms of numbers, I don't know off the top of my head, but it's definitely more than 13 different cabinet styles, and then, of course, there's the physical games such as darts and pool and so on, as well. I'm a big fan of the Astro cabs, personally."

That was the month that was

03

02
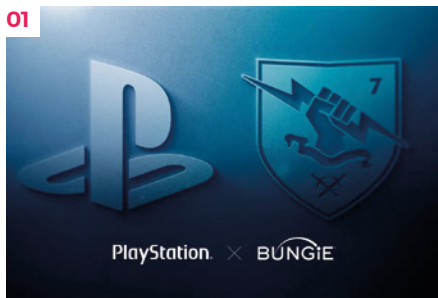
01

01. Sony acquires Bungie

Another uber-acquisition? Sony announced that it'll be purchasing *Destiny* developer Bungie for a meagre £3.6 billion. Sure, that's a drop in the ocean compared to what it took for Activision to be welcomed into the Xbox family, but it's indicative of a console war being fought on a different front. No longer is it just third-party exclusives being bought up (hello, *Final Fantasy XVI*) but now entire studios. "Bungie's world-class expertise in multi-platform development and live game services will help us deliver on our vision of expanding PlayStation to hundreds of millions of gamers," said SIE president & CEO Jim Ryan.

02. Rain Cloud

A Business Insider report has indicated that Google intends to quietly abandon the Stadia brand, scaling back its ill-fated cloud streaming platform by not actually focusing on video game releases. What? The Stadia division will instead shift towards making deals with white-label businesses and companies such as Peloton, that hope to have use for the tech by creating online demos and playable experiences. The writing had been on the wall since last year when Google announced its shuttering of all its internal gaming studios. We'll do our best to act shocked.

03. Still Switching

Nintendo president Shuntaro Furukawa revealed in a recent earnings call with investors that the Switch is "just in the middle of its life cycle". A sensible stance considering that almost every model (aside from the Lite) continues to stay popular and sell gangbusters worldwide, acting as the company's fastest home console to surpass 100 million sales. Furukawa noted how Nintendo's past consoles tended to wind down from their sixth year onwards but appeared confident, stating that "Switch is ready to break a pattern". Another half-decade of Switch? Yes please!

Head of Xbox Phil Spencer receives lifetime achievement award at 25th annual DICE awards

SEGA officially gets out of the arcade business after 50 years

05

06

04
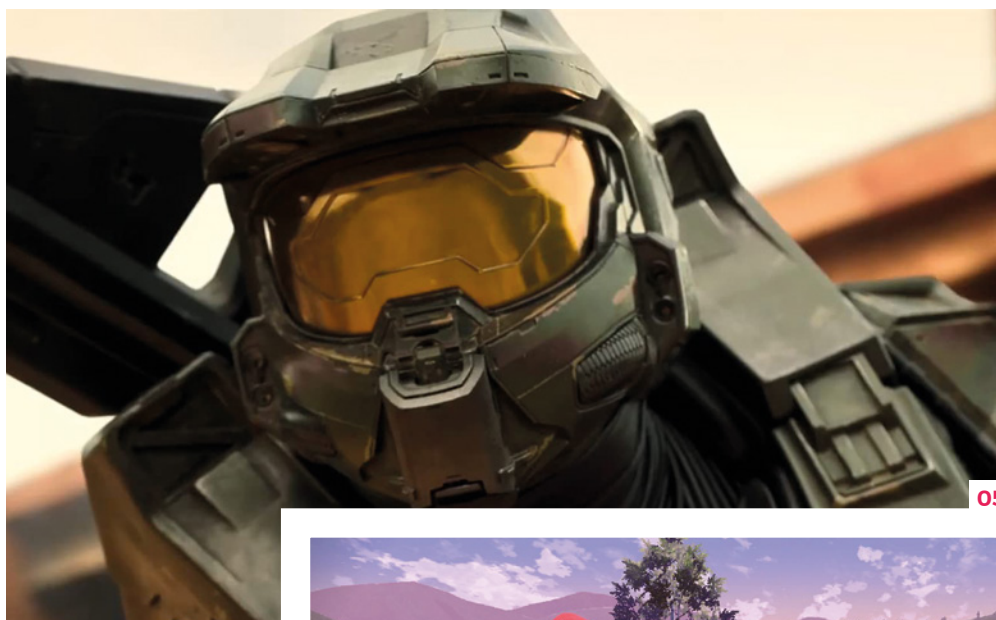
04. Worming out

You'd think by now publishers would have learnt their lesson: players don't like NFTs. That's why it wasn't too surprising to see Team17 quickly walk back its intention to merge the world of *Worms* with an NFT art company called Reality Gaming Group, not 24 hours after they initially announced it. "We have listened to our teamsters, development partners, and our games' communities," the company announced in a follow-up message, "and have therefore taken the decision to step back from the NFT space." Good riddance. Leave our precious *Worms* out of it.

05. Halo there

After what feels like an entire decade's worth of false starts and maligned attempts to translate the Master Chief's ringworld adventures to the small screen, a *Halo* TV show actually feels like a tangible thing that we might one day see – mainly thanks to the Paramount+ show debuting its first trailer. It certainly looked very *Halo*-y, with small glimpses of Cortana, an Elite, and other franchise iconography sprinkled in throughout. Colour us intrigued, especially since the show will sit in its own continuity known as the "Silver Timeline" so as to not bump up against the events of the games.

06. Catch 'Em All

Nintendo reported record sales for Game Freak's experimental, open-world spin on the beloved creature-catching JRPG series, with *Pokémon Legends: Arceus* shifting a staggering 6.5 million copies on Nintendo Switch during its first week of release. That's 500,000 more than what *Pokémon Sword* and *Shield* sold combined in the same launch period, for those keeping count. Reviews across the board may have varied wildly, but that didn't seem to affect people's excitement for the franchise going in a new direction. With such colossal global sales figures, surely a sequel is all but guaranteed.

Nintendo Switch surpasses the Wii, sailing past 103.54m units sold worldwide. Next stop: DS!
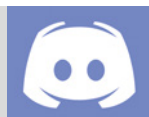
Discord integration rolls out to PS4 and PS5. Cross-platform chat for all
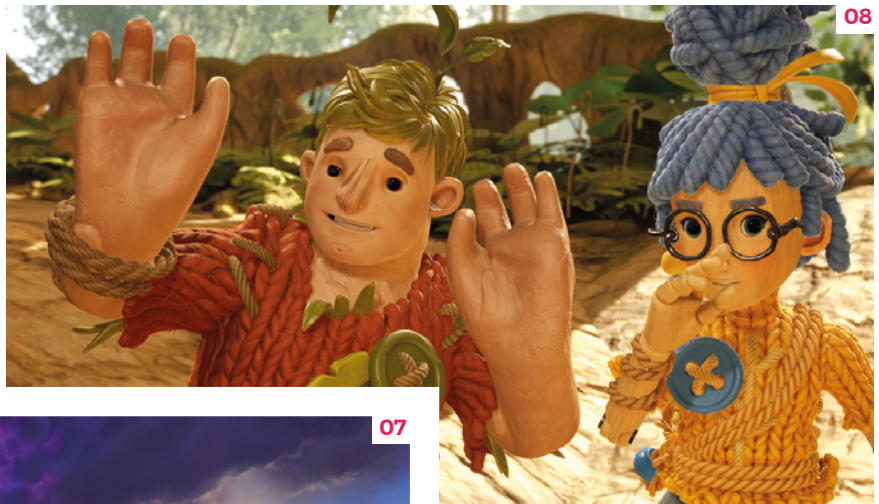
07. Not so Epic

PC players wanting to play *Fortnite* on the go might want to brace themselves. Epic Games CEO Tim Sweeney took to Twitter to let fans know that the free-to-play shooter won't be supported on Steam Deck at launch, citing fears over "Easy Anti-Cheat compatibility with Steam". *Fortnite*, of course, isn't on Steam anyway, but Sweeney's comments go so far as to rule out a potential Linux version which could in theory run on Valve's handheld hardware. Ah well, we guess gamers on PC will have to make do playing *The Witcher 3: Wild Hunt* for the tenth time.

08. Co-opted

Having already claimed the top title from last year's Game Awards hosted by Geoff Keighley, Hazelight's co-operative platformer *It Takes Two* is soon set to receive an on-screen adaptation – because when is divorce never not fun? The Josef Fares-led studio will be teaming up with production outfit dj2 Entertainment, Variety reports, where the shrunken-down adventures of couple Cody and May will be used as the basis for a film or TV show. Whatever format the translation ends up taking, toy elephant torture is a must.

09. Eye, eye

Excitement continues to build for PlayStation's second attempt at kickstarting a legitimate virtual reality platform. A presentation by Jim Ryan at CES back in January gave us a better idea of what to expect from the upcoming PSVR 2 in terms of specs – 4K visuals, OLED displays, and a single-wire connection – but now we have a better idea about who Sony is courting to manufacture the headset's eye-tracking tech. Tobii dubs itself the "global leader" in this field, confirming it has entered negotiations to be the official eye-tracking provider. Maybe PSVR 2 isn't quite as far along as once thought?

Andy Serkis will star in new *Warhammer 40K* game: *Chaos Gate – Daemonhunters*, for some reason

Ubisoft gifts its *Ghost Recon Breakpoint* devs an NFT cap each. Yikes!
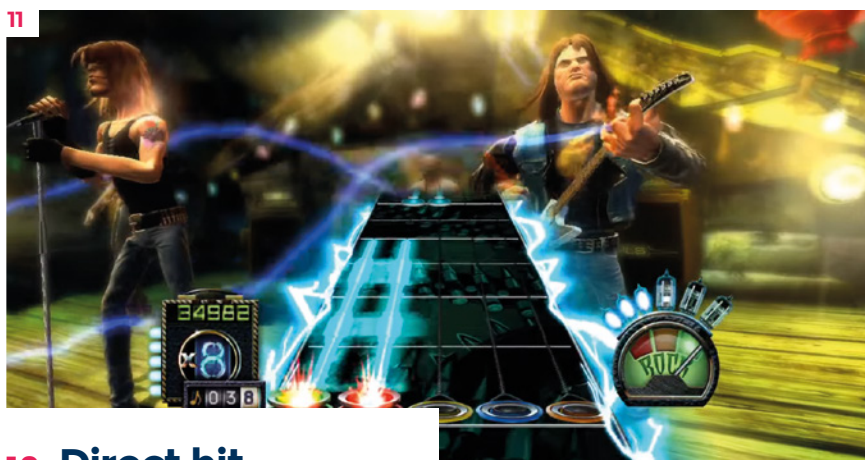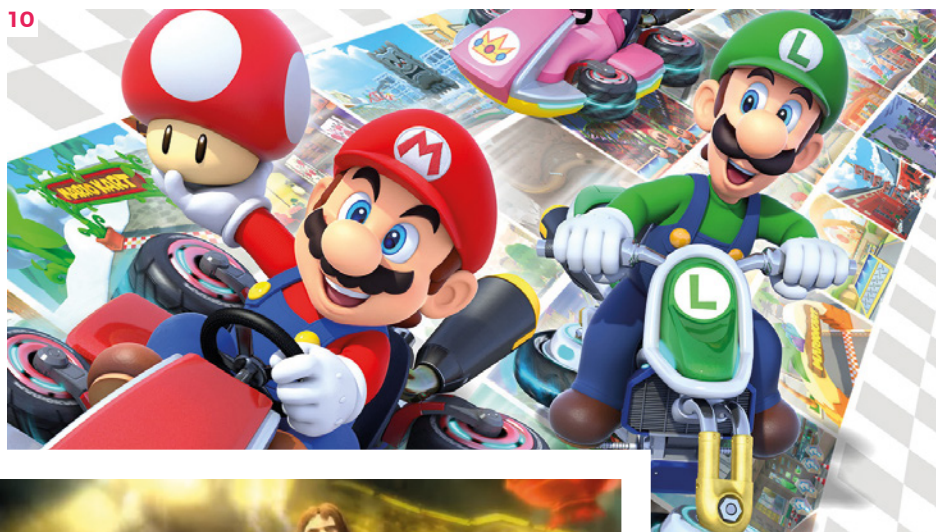
10. Direct hit

Turns out Nintendo has much more planned for the first half of 2022 than merely a new 3D title for its pink, pillow-shaped sucker. *Kirby and the Forgotten Land* looked great in the February Direct, don't get us wrong, but where the showcase shined most was in the surprise reveals of *Nintendo Switch Sports*, *Mario Strikers: Battle League*, *Fire Emblem Warriors: Three Hopes*, and more. Equally as unexpected was *Mario Kart 8 Deluxe* receiving new tracks via the 'Booster Course Pass' (finally!), which will be free to Switch Online + Expansion Pack subscribers. There goes another 60+ hours of our time…

11. Guitar Zero

Most of the world may have laid down their plastic instruments by the time even Spotify was still in its infancy, but for a specific subset of speedrunning and rock enthusiasts, the *Guitar Hero* craze continues. One player that won't be riding through the fire and the flames anymore, however, is Schmooey. Once considered the world's top *Guitar Hero* player, fans were left devastated when the YouTuber revealed to have faked many of his top videos. "I'm sorry I'm not the person you thought I was," he said when addressing his viewers. "I am a fraud."

12. Five Stars

If there was anything more certain in life than death and taxes, it would be the inevitable announcement that *Grand Theft Auto VI* is in the works. In true 2022 fashion, Rockstar Games shared the update in a tweet to fans. "We're pleased to confirm that active development for the next entry in the series is underway," it read. *GTA VI* was previously rumoured to have been started and restarted several times behind the scenes. Either way, no planned release date was revealed, and details relating to setting, characters, and online remain a mystery. There'll be guns, though, right?

PlatinumGames calls out Xbox, says it would "love to" resurrect *Scalebound*

MLB The Show 22 reveals its steelbook cover star, Shohei Ohtani

Post Apocalypse

Alan Sugar's video games, middle-aged Nintendo Switches... it's this month's letters

Issue #59

NFTs (again)

I found myself nodding along to Dan Marshall's righteously vitriolic piece at the top of issue 59. But leaving aside all the environmental concerns and other issues, something else keeps cropping up in my mind: has anyone come up with a compelling reason why NFTs in games are beneficial to the people who play them? I'm loath to be one of those people that instantly dismisses a new idea, or something that might be of use to independent game developers who are looking for new ways to raise funds. But notwithstanding the fact that nobody seems to explain what one of the sodding things is in a paragraph, why would I want one? Also, why is there such a vicious backlash against them? Emperor's New Clothes, or is there actually something to them?

Thanks for sorting this out.
Mark Gere

Ryan writes:
It's a good question. From where I'm sitting, the benefits all seem to be weighted in favour of the publishers who put the NFTs in their games in the first place, or people with deep-enough pockets to speculate on what appears to be an exceedingly fickle and volatile marketplace for things that only exist in the ether. We do have an in-depth feature about NFTs coming up in issue 61, though, so who knows? Maybe there'll be something in there that convinces both of us that NFTs really are the future...

Switched on

How refreshing to see Nintendo put on its latest showcase of games and give us old-fashioned things like release dates we can count on. Having sat through the latest Nintendo Direct showcase in February, I'd forgotten how simple things used to be. The idea that games could be announced, and then you wouldn't have to brace yourself for an interminable procession of delay announcements.

What I'm finding particularly impressive is how Nintendo has played a long game with its Switch machine, a strategy that feels more akin to its days with the Game Boy and DS machines than the GameCube and Wii. Why hasn't Nintendo released or announced a Switch 2? Simply, it doesn't need to, does it?
Alex Turland

Ryan writes:
Well, the Switch 2 (or whatever it ends up being called) may not be due for a while yet, but there's nothing to say that Nintendo won't keep bringing out new iterations of the Switch, much as it did with the OLED model. Besides, with the Switch's sales continuing to be astoundingly buoyant,

Nintendo's bound to feel a bit cautious about bringing out a true, fully-fledged successor. Just look at how the Wii U compared to the Wii...

Shortcuts

To go with our profile of *Mass Effect* and *Guardians of the Galaxy* composer Richard Jacques on page 84, we asked Twitter: what's your favourite video game soundtrack of all time?

Shenmue. Waves of Morning Haze. Used brilliantly in *Shenmue II* when Ryo leaves Hong Kong to go to Kowloon and, one by one, says goodbye to all the friends he has made there. Genuine emotions!
@tweeting_keith

The *Colin McRae Rally 2* theme was hyping up the high-speed action in the opening video every time you started the game. One of the most memorable soundtracks for me.
@Gameplicit

Must be *Tears* by HEALTH [in *Max Payne 3*]. Simply because it made you feel like Denzel Washington in *Man on Fire* and until then I didn't know video games could pull something like this off.
@Honablee

The *Morrowind* theme. So evocative of the place, all mystery and magic, strange cities looming out of the fog. I hear it and I'm there again.
@phlebasjon

Everybody's Gone to the Rapture by Jessica Curry. Still my all-time fave and go-to game soundtrack to listen to.
@Lef0nda

Sugar Rush

Given how into gaming I am, I watched a recent episode of BBC One's *The Apprentice* with interest. If you haven't seen it, the two teams were asked to come up with a video game concept and then pitch it to a number of games industry notables – among them *Fighting Fantasy/Tomb Raider* legend, Ian Livingstone. The episode unfolded pretty much like all the others: egos clashed, ridiculous ideas prevailed, and everyone lined up to get shouted at by Alan Sugar at the end. What most fascinated me, of the episode's other bizarre moments: Sugar's assertion that he's made "thousands" of games. I struggle to believe he ever sat in front of an Amstrad CPC 464, coding even one game, let alone thousands. Anyway, the entire show left me so baffled that I had to email somebody about it, and you drew the short straw.
Steve Jenkins

Ryan writes:
This sounds so astoundingly weird that I have to see it for myself. [Cuts to one

"I found myself nodding along to Dan Marshall's righteously vitriolic piece at the top of issue 59"

though, was just how loose its understanding of the games industry was. I'm no expert, but do developers really start designing their logo before they've begun work on the game itself? Do they come up with the (ropey) character models before they've even got their concept nailed down? And all this happens before another one hour later]. Goodness me. That really is the strangest piece of television I've seen in quite a while. Congratulations to the team that managed to come up with a Google-proof game name ('*Time*') and their rivals, who managed to leave a glaring typo in theirs. Game of *Artic Saviour* [sic], anyone?

The burning question

Yes, it's another one of our entirely serious and incredibly scientific pie charts. In light of Microsoft's Activision Blizzard deal, we asked Twitter: which firm might it snap up next?

- **EA** - **11**%
- **Capcom** - **8**%
- **Sega** - **31**%
- **Wetherspoons** - **50**%

Incoming

The Last Worker

In the near future, a gigantic online retailer – which definitely isn't Amazon – has largely replaced its workforce with AI machines. The sole remaining human, toiling away in a warehouse "the size of the sunken city of Manhattan", is Kurt, a grizzled chap who's tasked with fulfilling the sea of orders rolling in every day. Ultimately, *The Last Worker*'s a game about the promise of rebellion: you can sneak into areas of the facility you shouldn't enter, avoiding the patrolling machines; then there's SPEAR, a group of anti-automation activists. Do you join them, or stick with your corporate master, who definitely isn't based on Jeff Bezos? *The Last Worker* is the game debut from filmmaker Jörg Tittel, its unique look is courtesy of Judge Dredd artist Mick McMahon, and Jason Isaacs is among the vocal cast. It's one we'll be keeping a close eye on in the run-up to its launch later in 2022.
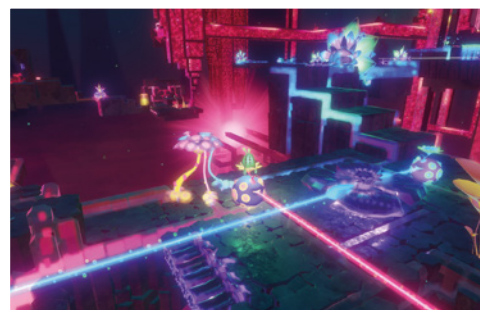
Lumote: The Mastermote Chronicles

There's a hint of Wii-era 3D platformers to *Lumote*, and that's by no means a bad thing. It sees you take control of an aquatic lifeform on a mission to turn its under-sea kingdom from red to shimmering blue – a mission achieved by hopping from platform to platform and solving puzzles as you gradually descend into the sea's lowest reaches.

Tiny Troopers: Global Ops

If you're pining for the days of *Cannon Fodder*, Sensible Software's Amiga-era war sim, then *Tiny Troopers: Global Ops* could be just the game to fill the gap. Like that 1990s title, it sees squads of diminutive soldiers take on a string of increasingly deadly missions – and if one of your number dies in the heat of battle, they're gone for good. The *Tiny Troopers* games have been around for a while now – the first one came out for mobile devices in 2012 – but *Global Ops* looks to be a bigger, more refined take on the twin-stick action formula.

Gran Turismo 7

The *GT* series is a quarter of a century old this year, and while the racing sim has some fairly tough competition these days – not least from the twin-pronged *Forza* franchise – Polyphony Digital is almost ready to roll *Gran Turismo 7* out of its virtual garage. Expect over 420 cars to unlock, race, and generally tinker with, and approximately 90 tracks to hurtle around on. Incredibly, it's almost a decade since *Gran Turismo 6* came out; we'll know whether the wait for its sequel was worth it when it launches on 4 March 2022.

Hindsight

Imagine the gorgeous flat-shaded polygons of 1991's *Another World*, but allied to a gentle drama that follows a woman's path from birth to adulthood. *Hindsight*'s hook is its focus on physical objects: examining everything from personal belongings to items in the natural world will trigger memories, offering more insight into the central character's history. Publisher Annapurna Interactive has a track record for picking out unique indie experiences, and this one looks like another promising entry in its growing catalogue.

Planet of Lana

Swedish developer Wishfully Studios counts among its number a co-founder of Tarsier, the team behind *Little Nightmares*. We bring this up because there's a distinctly cinematic quality to this side-scrolling action-adventure that recalls Tarsier's hit, though the premise here is very different. *Planet of Lana* is an invasion story with a captivatingly painterly look: a quiet, leafy world is overrun by a marauding army of insectoid machines, and against this backdrop, you guide a youthful protagonist, Lana, and her dog-like companion, Mui. In terms of puzzles, we can expect something in the vein of *Inside* or *Limbo*; visually, though, *Planet of Lana* looks entirely its own thing. It's a title we'll hopefully learn more about in a future edition of Wireframe.

Bear and Breakfast

The title might sound like a quaint British pub, but it's actually a pretty accurate description of the game itself: you're a bear, and you run a bed and breakfast. But first, you have to get your establishment up and running, turning a run-down shack you find in the woods into a plush hostelry that'll satisfy your customers and earn lots of money. We've played a good number of management sims of late, but the quirky premise and humour alone makes us more than a little intrigued for indie developer Gummy Cat's hairy debut.

Neon White

Here's a first-person shooter with a distinctly Japanese turn of speed – we keep looking at it and thinking of things like *Bayonetta*, *Vanquish*, or *El Shaddai*. None of those were first-person shooters, but *Neon White* at least shares a bit of their look and tone. Surprisingly, developer Angel Matrix's previous game was the whimsical puzzler *Donut County*; they've evidently gone for an altogether different vibe here, with a more adult story about a denizen from hell hunting down other demon hunters using guns and parkour skills.

Bomb Rush Cyberfunk

This street-savvy sports sim doesn't hide its debt to the Dreamcast gem, *Jet Set Radio*; *Bomb Rush Cyberfunk* even has music from the earlier game's composer, Hideki Naganuma. Developed by Team Reptile, this one offers a wealth of high-speed sports to tackle – skateboarding, inline skating, and BMX biking are among the attractions – with the aim being to score points by pulling off tricks and combos, leaving graffiti tags all over the place, and remaining one step ahead of the law. Radical, as we're sure the kids all say these days.
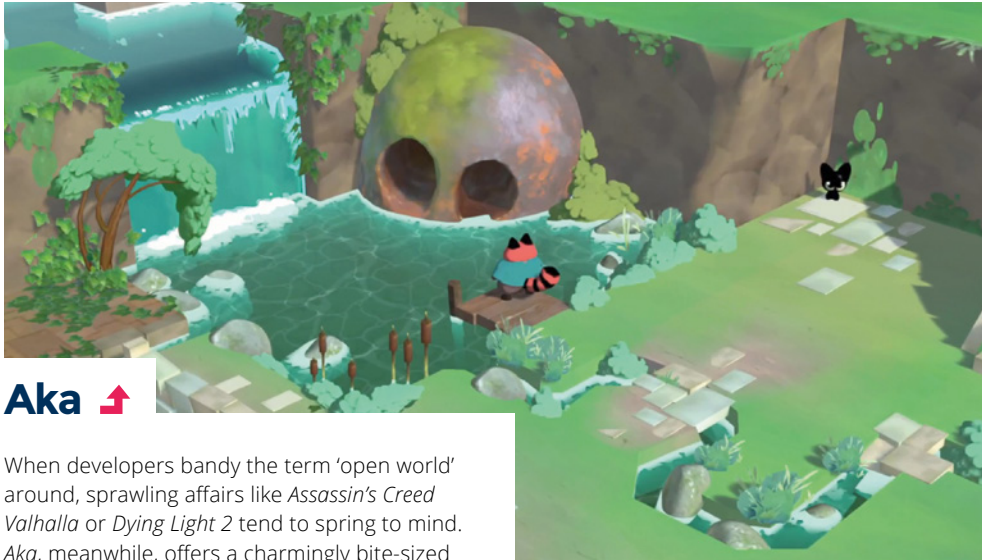
Aka

When developers bandy the term 'open world' around, sprawling affairs like *Assassin's Creed Valhalla* or *Dying Light 2* tend to spring to mind. *Aka*, meanwhile, offers a charmingly bite-sized landscape divided up into islands: cast as a furry mammal – specifically, a red panda – you get to explore, farm, craft, and do lots of the typical stuff you get to do in an open-world game. But you can also fall asleep on the back of a gigantic capybara, feed a baby dragon, and swim with similarly huge manta rays. It all looks thoroughly serene and utterly heart-warming.

Floppy Knights

Stop chortling at the back – the title refers to floppy disks. This one's a mash-up of tactical RPG and deckbuilder, set in a fantasy world of magic, goblins, and retro technology (hence all the floppy disks). *Fire Emblem* and *Advance Wars* are among the titles cited as influences by artist and creative lead Marlowe Dobbe, and if the colourful art style looks familiar, that's because Dobbe previously provided the visuals for Terry Cavanagh's similarly cute *Dicey Dungeons*.
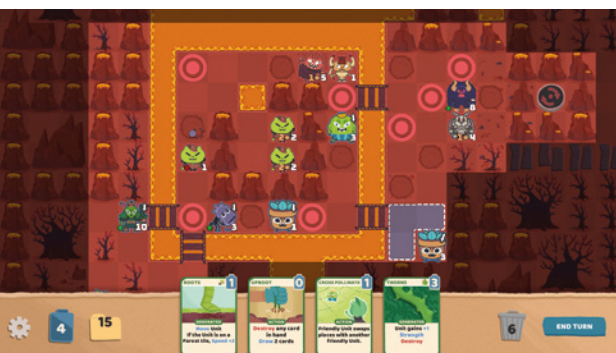
How To Say Goodbye

Here's a narrative puzzler with a pleasingly relaxed vibe. The aim is to guide a series of ghosts through the limbo-like world in which they're trapped, and safely on to the afterlife. Those worlds resemble complex sliding puzzles which have to be thoughtfully manipulated to complete; tying it all together is a story that, according to developer ARTE France, deals with such themes as kindness and grief.

COSY GAMES

A ROUNDTABLE DISCUSSION

A designer, publisher, and content creator chat about the popularity of cosy games – and what their future holds

WRITTEN BY
HELEN JOHNSON

Cosiness: a state of contentment, warmth, and security. As the pandemic swept the globe in 2020 and 2021, a growing number of gamers sought cosy alternatives to the outside world – which goes some way to explain how *Animal Crossing: New Horizons* turned a series that has existed for 20 years into a sales phenomenon. In the midst of Covid, *Animal Crossing* became a refuge, where players could come together in a candy-coloured world filled with friendly characters and low-stakes tasks to complete. Other cosy games came to the fore around the same time: 2021 alone saw the release of such gentle, pleasurable delights as *Unpacking*, *TOEM*, *Chicory: A Colorful Tale*, and many more besides.

> **"*Harvest Moon* could be regarded as the archetypal cosy game"**

Not that gentle, laid-back games are a new phenomenon. *Harvest Moon*, released in Japan for the SNES in 1996, could be regarded as the archetypal cosy game: it provided a romanticised vision of rural life, with farming, a friendly community, and the changing seasons gently marking the passing of time. In the years since, indie developers have sought to make their own relaxing sims along similar lines: the most obvious being Eric Barone's phenomenally successful *Stardew Valley*.

To find out more about an increasingly popular type of game, we poured a mug of coffee and sat down for a virtual roundtable chat with three people who have an intimate knowledge of the medium's cosy side: Louis Durrant of carrotcake, a British studio currently developing the upcoming gardening sim, *The Garden Path*; Matthew White, CEO of US indie publisher Whitethorn Games, which specifically focuses on cosy games; and Kennedy, a US-based content creator whose YouTube channel Cozy K aims to showcase the best cosy games around.

What follows is a lively discussion about the appeal of cosy games, the sometimes grim backlash they can receive online, and where the genre might go in the future – that is, if you can call it a genre, of course... ➤

^ Dr Matthew White, founder and CEO of Whitethorn Games, in a suitably cosy situation at home.

^ *Lake* allows players to escape into another person's leafy reality.

▲ **Louis Durrant of carrotcake, currently developing *The Garden Path*.**

▼ **Designer Eric Barone's refinement of *Harvest Moon*'s mechanics resulted in *Stardew Valley* – one of the most popular farming sims of all time.**

COSY BY DESIGN

We began by asking Louis Durrant about his introduction to cosy games, and the titles that led him to start making *The Garden Path* four years ago. "The challenge of creating a cosy game is unique, and that's what drew me to it," he says. "I used to play a lot of *Harvest Moon: A Wonderful Life* and that was good fun. But I really found cosiness in *Final Fantasy Crystal Chronicles* – I remember that as a kid. You had your own little caravan, and groups of people, and you'd have an adventure, and everyone would party at the end of the year. There isn't really a game like that anymore, is there? But I really remember feeling that as a kid and I'd really like to evoke that again."

Whitethorn Games has so far given the world the likes of *Lake*, *Teacup*, and *Calico* – all gentle experiences that publisher Matthew White says are aimed at a specific type of gamer. "Our original market was older millennials – people who had more disposable money than time," he explains. "We were aiming at people who wanted three-to-six-hour experiences for $20; they don't want to spend 300 hours on a game. And it turns out we had a great affinity with the cosy or wholesome games community. Those fit well with the approachability and bite-sized ethos. *Calico* is probably our best-known game, but we're really passionate about these experiences because it's what, it seems, the world needs right now, with how horrible everything is all the time."

When asked to describe what a cosy game is, White replies that it's hard to define – it's "like a kiss," he says. "I can't tell you what makes a good kiss, but I can tell you what doesn't."

White does, however, have three "markers" when it comes to the games Whitethorn publishes: their experiences should all be "approachable", "bite-sized", and "stress-free".

"Approachable means that anyone, anywhere, can pick it up and play it," he explains. "There's no finger karate or genre knowledge that you need to play the game. Bite-sized doesn't necessarily mean the game's short, but when I sit down to play for half an hour to an hour, the time invested delivers a full game loop. It's a full experience. As for stress-free, I think this is what typifies

the cosy bit: we talk about challenging but not punishing players. You can lose, but none of it's punitive; there's no 'game over', no losing progress or starting over. You respect people's time, and I think cosy games are about that. Even the adjective evokes this image of cuddling up with a cup of tea. None of us in our lifetimes expect making a cup of tea to be like, 'Steep me for three minutes, loser!'"

"I think it's also having that sense of predictability," adds Durrant. "The player knows where they stand with things, what they can expect, and if something doesn't quite work, then I think it's important for the player to see the reason and have that feedback. When you're playing a cosy game, you want a feeling that actions have a certain weight… Cosiness is a kind of mindfulness, and every action needs to be intentional. When you push a button, you want to feel like something's happening, and you're getting feedback. In that sense, you're getting that predictability which feeds into the cosy feel – because it's familiar. Nothing's scary. You have some breathing room for some mystery, some puzzles – but at the end of the day, you always know where you stand. You can pick it up and put it down and you're always where you remember being."

CURATION AND PACE
Durrant suggests that a feeling of ownership is key to a good cosy game: that the items in the game are "mine, I like them, and I know where they are," he says. "Curation as well, I suppose: a feeling of organisation. Our room may be a total mess, but we go into our cosy game and there's a sense that things are in order."

White makes the argument that cosy game design is intentionally "ponderous". He points out how one of Whitethorn's most recent releases, *Lake*, a game about delivering packages in a small American town, encapsulates this pondering via the absence of a run button whereby "every step takes effort, which adds to the atmosphere".

After *Lake*'s release, some players asked for quicker modes of traversal – a change Kennedy argues would potentially ruin the game's pace and world-building. "You're not going to sprint around the world as a mail carrier, you're going to walk," she says. "It's world construction… there's

characters that feel safe and familiar, colours that are soft and warm, dialogue which indicates that you and your efforts for the community are appreciated."

COSY: NOT A GENRE?
Most of us could point out a cosy game when we see one. So could it be considered a genre in its own right? White certainly doesn't think so. "I don't think it's a genre," he says. "You have a game like *Lake*, which is kind of an adventure game, you have *Calico*, which is a café simulator, and then you have more formal games like *Stardew Valley*, which is a farming game with clear objectives. Even things like *Boyfriend Dungeon* is cosy – and that's a dungeon crawler! So, it isn't genre-limited."

Durrant adds, however, that "something seems to bind" all these disparate games together. "When we're asked to think about cosy games, we say similar things," he says. "There's a running current through them which brings up specific, yet different games. I couldn't tell you what that 'thing' is; there's so many different mechanics and styles."

However you class cosy games, it's inarguable that gentle sims like *Animal Crossing* have really come to the fore in recent years. So what role did the pandemic play in the rise of these sorts of experiences? "I think it was on its way before Covid-19," White says, "but cosy games became something that we needed during the pandemic. Many of us were so locked away from society – ➔

> **"Approachable means that anyone, anywhere, can pick it up and play it"**

COSY FIRES

Cosiness, although often discussed as whole game experiences, can also include sections of a game that encourage rest, reflection, and recuperation. A popular example of this is the campfire or bonfire scenes in *Tomb Raider* and *Dark Souls*. The player has a sense of safety as they can't be attacked, and the gameplay takes on a slower pace as the player organises equipment and gathers upgrades.

˅ *Calico* portrays its cosiness through softness of design and a friendly community feel.

CORE DESIGN

When it comes to game design, Matthew White argues that while there should be some room for player expression – "there are certain things you let people do that won't change the fundamental nature of what the game is," he says – there are other, more intrinsic areas that should remain off-limits. Some criticised *Lake* for the slow pace of its central character's walk, for example; but for White, adding a run feature to the game would be akin to "throwing in a visual novel-style dating sim between you and the bonfire in *Dark Souls* – it's weird and doesn't fit in the game!"

Covid really placed community, the outdoors, and other humans in the centre [of discussions]… I feel like cosy games had a moment during Covid, specifically *Animal Crossing* right at the beginning. So I think now, cosy games perhaps have more fans than they did, so it certainly helped. But I think that undercurrent has always been there, at least in the USA. The world wasn't great before Covid… and cosy games are a reaction to the immense pressure the world can put on you."

Kennedy nods. "As a content creator, this is why I got into [cosy games], why I'm now part of this community. It was people looking to occupy their mind [via] escapism. It was both people reconnecting with gaming, who had forgotten about it as a hobby, and people who'd never touched gaming before."

THE DARK SIDE OF COSY

When talking about cosy games, it's easy to consider the environment which surrounds their creation as similarly wholesome. One of the fundamental indicators of a cosy game is that they tend to be more inclusive in terms of representing gender, sexual identity, race, and disability. As White points out, however, creators of such games don't escape some of the less positive discourse which often surrounds the video game industry as a whole. "Our game *Calico* is made by a two-person team: a man, Andrew, and a woman, Kells. Kells is unapologetically hyper-cis feminine. So, she likes to make extremely feminine games… and we were absolutely dragged on Twitter for caring
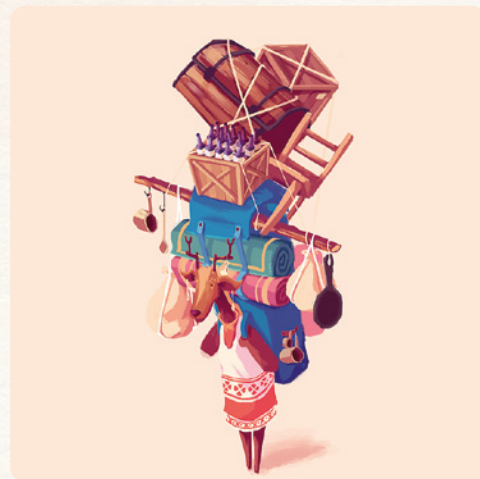
⌃ Concept art, showcasing a nature-inspired colour story, natural materials, and fauna for *The Garden Path*.

to advance a narrative that was for someone [in particular]."

"It's why I try and stay off Twitter," says Kennedy, when White asks whether she saw any of that negativity. "The discourse can be running around in circles and shouting into a void. It's so interesting to me because, as a woman of colour, I would take anything that isn't just what we had before. I don't care if it doesn't fit my exact experiences, I'm happy to have it. I understand wanting a bit more of a defined experience, but I think asking for that when it wasn't the developer's goal to begin with is kind of weird… Who are you to tell them, 'No, this should be your goal instead'?"

"You also get these comments like we're greedy and chasing a trend to get money," White continues. "That's a really common narrative you see in Twitter feeds and Steam forums. 'Oh, another one of these cosy games. I guess the indie dev needed to make a quick buck'. And I think a lot of that is fundamentally not understanding how long and difficult it is to make video games."

TOXIC POSITIVITY

A somewhat different issue with cosy games came up during our discussion: something called 'toxic positivity' – a type of game that's too reliant on trying to make the player happy. Curiously, the happiness paradox states that when happiness is the goal, it's rarely achieved. Rather, the act of accomplishment brings forth both joy and happiness. Durrant suggests that some cosy games "are almost upbeat to a point

⌄ Cosy workstations equal cosy content for Kennedy of Cozy K.

Sunday   ฿10000

Daisy
squeak Good day!

of there being absolutely no downtime – there's no sadness, no whimsy."

As a contrast, White points to 2016's *That Dragon, Cancer* – a narrative-driven story about a father losing his child – and notes how the game was always framed as happy, despite knowing as a player that the situation would be immensely sad in moments.

Adds Durrant: "I feel as a developer, there's a responsibility to not just provide an escape but to also show a reflection of the real world. When constructing the world and the forest, I wanted it to *feel* like a forest. Trees where it's not you hit it three times and it's down and you get three bits of wood. I wanted to show that things do rot and die, and that's how a forest is. I didn't want to present this cereal box imitation, because to me the game is about the garden, it's about the forest – and that is how I wanted to approach it. But I think there's value in that, where people spending a lot of time in the game learn something from the experience and come away with, hopefully, another way of seeing their world."

A COSY FUTURE?

As our coffee mugs were almost empty, and our chat neared its end, conversation turned to the future of cosy games. With the pandemic seemingly on the wane, is our collective affection for less stressful experiences on the slide, too?

> **"Cosy games are a reaction to the immense pressure the world can put on you"**

"I don't think it's going anywhere," White says. "One of the nice side effects of the cosy game community is that a lot of people who had a different idea of what games were are now making games, and many of them are making money making them."

"I hope that gaming goes in the direction of being a common household thing which everyone does," says Kennedy. "I think cosy games will be an easy entry point for many people because they tend to be more relatable – a slice of life. And I've been seeing that a lot, people saying 'I didn't even know there were games where you could just cook or decorate or whatever'. So, I hope it continues that way because gaming is a great hobby."

"I wonder if games as a service will come into this, because you get a lot of cosy games where you pick it up for a little bit and then put it down," Durrant concludes. "There's this trend of almost wearing a game like a coat or something, something which defines you. But with a lot of cosy games, I know I would like my game to be a secondary game – people are using that term more these days. I've got my main game and then I have my downtime, secondary, game…But it's certainly interesting [seeing] cosy games evolve. Personally, I'm keen to watch that space." Ⓦ

⌃ Kennedy, who makes content for her appropriately named YouTube channel, Cozy K.

In praise of chrongaming

KIM JUSTICE

Kim Justice is a YouTuber, streamer, and writer who specialises in the world of retrogaming. If she isn't making lengthy documentary videos about old games and companies, she's probably chatting and mouthing off about them live to a dedicated handful of people.

As a documentarian, recording the antics of a video game company from the past requires me to be thorough. A lot of people might imagine this means a great deal of research; going beyond the Wikipedia page, poring through old magazine articles, listening to interviews, finding as many angles as possible on key moments, or unfinished titles. In all honesty, however, the meat of this research lies in simply playing the company's games: to try, as much as possible, to play everything a studio released – not just the big successes and failures, but a myriad of generally forgotten titles that may well mostly be mundane. Why? Because to do this provides an all-important context and fits the entire patchwork of a company's history together, rather than having moments or games exist in vacuums – and it's in this practice where the appeal of chronogaming, or chrongaming, becomes readily apparent.

Chrongaming is a pretty simple thing to do on paper – you take a company, or most usually an entire platform, and you play everything in as close as possible to the order it was released. You leave nothing out, embracing what may well be an entire raft of games involving exciting subjects like mah-jong, pachinko, or dating, and usually, you try to record some sort of thought on everything you play. In this day and age, it's something of a defiant process – in the retro world, we're often guided towards experiencing games thematically, even if that grouping is simply the very best games, the worst ones, or the hidden gems that don't get enough love.

Chrongaming rejects all of these themes, and yet it makes the important games feel even more impactful – when you approach a classic with an idea of the mediocre also-rans that surrounded it, you get more of a feeling for why a particular game managed to stand out from the crowd, and you're closer to the experience people had when the game came out.

Appropriately enough, it can be a time-consuming process – to play everything means to take a bit of time over it, the sort of thing we're always told we don't have nowadays. It's also an intimidating one – there are many unfinished attempts at chrongaming out there simply because the task someone set themselves was too massive. You may be more comfortable just watching other people take that task on, and fortunately, there exists the likes of Dr. Sparkle, Generation 16, and Jeremy Parish, who've happily been recording their chrongaming exploits for years on YouTube.

But even if you don't choose to chronologically play every release for the ZX Spectrum, you can apply a little of the practice. Before you choose to play a much-loved retro game, whether it's for the first or tenth time, have a little look at the games surrounding it, the ones you don't remember. I can assure you it'll be fun and interesting, and while the games you uncover might occasionally be baffling, playing them will make the end result that much sweeter. ⓦ

▲ Why would anyone choose to play *Dick Vitale's "Awesome Baby!" College Hoops* in 2022? Chrongaming is one good reason why.

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Out of the
BOX

The tricky art of translating toys to video games

With a new era of licensed games on the
way, we speak to the indie developers
taking an authentically playful approach
to toy-based experiences

Written By **Aaron Potter**

Much like video games, toys often represent a simpler time in people's lives: that period of childhood when we had all the time in the world, free to express ourselves by creating imaginary stories using shrunken-down, plasticised versions of a favourite hero, vehicle, or animal. But just as games based on TV shows or movies were once thought of as inferior, games spun off from toy licences have long had a similar stigma attached. At their worst, games based on toys could be perceived as rushed cash grabs, little more than another glorified advert designed to encourage kids to buy more toys.

Slowly but surely, though, the tide is beginning to change, largely thanks to the talents of a generation of developers who grew up playing with a particular toy. A game based on the likes of Nerf, G.I. Joe, or Hot Wheels is no longer automatically bad. Sure, there are strict brand guidelines that any studio developing a title based on a toy must adhere to, but many are jumping at the opportunity to do these properties justice. For some, the chance to turn an iconic plaything into a game is a tempting one, especially if it means providing renewed enjoyment for the next generation of youngsters.

One developer that knows this more than most is Milestone – a Milan-based studio primarily known for its work on racing titles such as *WRC*, *Ride*, and *MotoGP*. 2021 saw the team put the simulation side of its driving games aside in favour of an arcade racer based on Mattel's line of toy cars. "The main goal was to create a proper Hot Wheels game, not a generic arcade racer," says Domenico Celenza, producer on the surprise hit, *Hot Wheels Unleashed*. "The creative and production focus had been to infuse the game with the spirit of the real toys, while keeping it challenging and fun to play."

Balancing those last two aspects proved key to making *Unleashed* look and feel like a legit racing game, treating it with a similar reverence

to, say, a *Burnout* or even *Forza Horizon* to ensure it wouldn't just be written off as another cheap tie-in.

Until now, there's been an unspoken belief that any toy-based game needs to be dumbed down in order to cater to a broad audience. Rather than see this as a negative, though, Milestone viewed this as a strength during *Unleashed*'s development, and attempted to find a sweet spot that would interest first-time racing fans and experts alike. "Approaching this iconic brand, we had to respect every aspect of it, and we tried to include them all," Celenza says. "You can collect the cars and enjoy all the tiny details, you can spend time customising their liveries in the editor, you can experiment with the track editor, or you can just jump on a quick race and try to beat your opponent in online and offline modes."

Hot Wheels Unleashed allows racing fans to brake, boost, and drift around all kinds of ➜

▲ Domenico Celenza is one of the producers at Milestone.

◄ In a bid to be taken seriously, *Hot Wheels Unleashed* features no power-ups.

⌄ Every car in *Hot Wheels Unleashed* is unlocked using in-game credits, which thankfully can only be earned and not bought.

^ Loop-the-loops and multiple routes feature throughout *Unleashed*'s circuits.

> "One of the toughest things was figuring out how Barbie could 'attack'"

v Adam Tierney has been a designer/ director on countless WayForward titles.

tracks, faithfully replicating many of the toy line's most recognisable vehicles – from triceratops trucks to exotic muscle cars – to try and capture a small slice of that childhood joy Hot Wheels represents for so many. All this you do against the backdrop of a garage, college campus, basement, and other real-life environments, while tearing up the plastic track in a bid to be the first over the finish line. *Unleashed* even goes a step further to replicate the sensation of ripping open a Hot Wheels box, letting players unlock new vehicles by having randomised plastic tubs burst open.

In addition to featuring sets and vehicles long-time Hot Wheels fans would be familiar with, though, making *Unleashed* had to be accurate in terms of scale and detail. "The real diecast models are 1:64 scale, but in order to have a realistic world, it's not enough to have a very big environment: we put a lot of time and effort into researching and developing all the tiny details that make the whole game world so authentic," Celenza says. "Moulding lines and imperfection on the diecast vehicles, fingerprint marks on the tracks, scratches on the car paints at the end of the race, duct tape used as starting lines, just to name a few." They're the kind of elements you

only get through a combination of modern tech and a passionate team of developers.

The die's cast
You'd be forgiven for thinking that working with a gigantic toy conglomerate like Mattel on a Hot Wheels game would prove to be a logistical nightmare. But the reverse was true, according to Celenza. "They provided us with all the references and material to reproduce the diecast models," he says. "We also collaborated to redesign all the classic Hot Wheels playsets in order to make them funny and interactive track pieces for our tracks."

As great an arcade racer as *Unleashed* turned out to be, its Hot Wheels branding made it an obvious candidate for the genre. But what about a toy that doesn't obviously lend itself
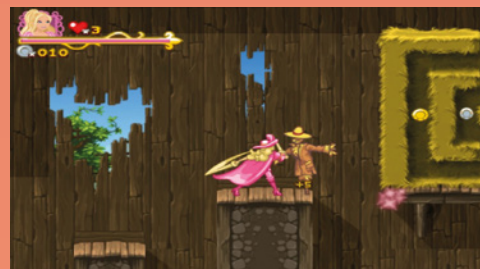
^ *Barbie and the Three Musketeers* served as a relief for WayForward, as Barbie was allowed to wield a sword.

^ Your chief 'attack' method in *Barbie and the Magic of Pegasus* is a magical wand, which can also free frozen citizens.

to an arcade racer, shooter, or other popular video game category? This was the case for WayForward, another studio with experience of working with Mattel – in its case, on a tie-in starring a certain fashion doll. "Few toy brands are as big as Barbie," says WayForward director of publishing, Adam Tierney. "There were inevitably a lot more discussions and a lengthier approval process on things than when you're working with a less prominent brand."

Responsible for several Barbie tie-in games on such platforms as the Game Boy Advance and Nintendo Wii, one of the core obstacles that Tierney and his team needed to overcome when developing the first game, 2005's *Barbie and the Magic of Pegasus*, was what its gameplay would even look like. Unlike Hot Wheels, the approach wasn't so self-explanatory.

"One of the toughest things was often figuring out how Barbie could 'attack' in some of our games where that version of Barbie wasn't very action-y in the source materials," Tierney reveals. "Or who or what could be enemies, and how Barbie could dispose of them. Depending on the branding, it could still be very easy, such as with *Barbie and the Three Musketeers*, where she runs around with a sword.

"But other games like *Barbie in The 12 Dancing Princesses* didn't have immediate answers for some of these elements, so we needed to go back and forth with the licensor to come up with solutions that played satisfyingly, but also didn't make that version of the brand more aggressive than it was meant to be."

Thankfully, Barbie's a character who wears a lot of hats depending on the type of story or fantastical scenario she finds herself in. This allowed WayForward an unusual amount of creative freedom with its time working on Barbie – something that isn't always possible within

the confines of a licensed or toy-based game. The problem was, however, meeting a tight turnaround time to coincide with the princess' latest direct-to-DVD adventure.

Fortunately, Mattel was able to give WayForward plenty of Barbie-based materials to serve as inspiration. "We'd be sent work-in-progress versions of the films, scripts, and VO samples, so that we could match each game to the film in terms of plot, location, and such," Tierney says. "Mattel was always fantastic about providing abundant reference material like that during development."

This, coupled with the studio's penchant for working on games based on the likes of X-Men, Shrek, and SpongeBob, meant that once the initial gameplay concept was nailed down, characteristics like style and tone soon followed.

WayForward was never under the impression its trio of Barbie titles would win any awards, but that never took away from the studio's desire to →

^ WayForward's first Barbie game was *Barbie and the Magic of Pegasus* for the Game Boy Advance.
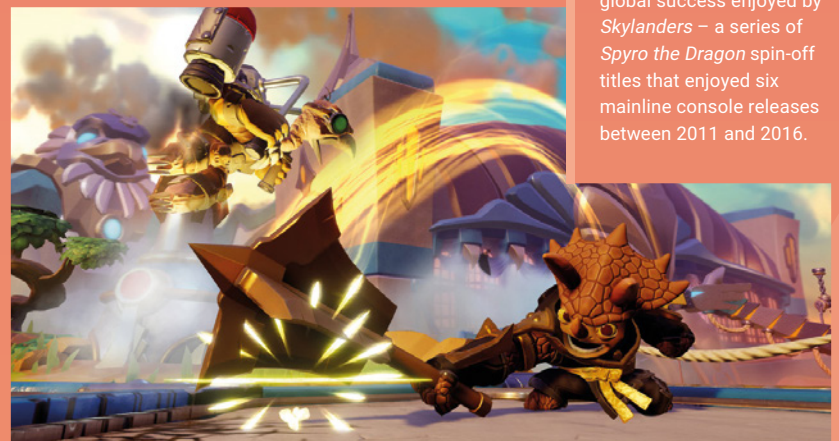
Toys-to-life

It wasn't too long ago that big third-party publishers like Warner Bros. Interactive, Ubisoft, and Activision were cashing in on the toys-to-life craze. The idea of purchasing real-life figures that would unlock in-game features was sound enough, but the quality of the games attached to them tended to vary. *Disney Infinity*, for instance, despite its wealth of brands like Pixar, Marvel, and Star Wars, failed to reach the global success enjoyed by *Skylanders* – a series of *Spyro the Dragon* spin-off titles that enjoyed six mainline console releases between 2011 and 2016.

In *Hypercharge*, everyday items like batteries and even blades of grass convince you of your small stature.

Simulating scale

Scale is an important consideration when making a toy-based game, especially if you're trying to accurately represent real-world products in a 3D environment. Milestone achieved this by adhering to the 1:64 scale of Hot Wheels cars, but it was equally as vital for *Hypercharge*, where you play as a 6.5" action figure. "Extra care must be taken to get the scale of every object right," says *Hypercharge*'s environment and level designer Andrew Hielscher, "as incorrect scaling becomes obvious when you're very small. Other challenges include making the platforming throughout the levels appear natural and believable in its environment."

Up to four friends can shoot alongside each other against hordes of enemies in *Hypercharge*.

make a great game each time. This partly explains why the likes of *Three Musketeers* and *12 Dancing Princesses* were some of the team's best-reviewed licensed games at the time, praised for introducing new audiences and younger gamers to the classic action-platforming genre.

To this day, WayForward remains known for its tie-ins, alongside its own original series (most famously the *Shantae* series). Question is: has the process of working with licence-holders changed in all that time? "The major difference is that previously, the licensed game world was driven by the idea of games-in-a-box," says Tierney. "If Barbie had a movie coming out soon, there needed to be a game version of it. So publishers would reach out to developers like WayForward and pay us to develop those games. Nowadays, it's the opposite – more often, it's a developer like us who reaches out to

a licensor like Mattel and asks if we can develop a Barbie game."

That last approach certainly worked recently with Milestone and *Hot Wheels Unleashed*, but a third route, often taken by select indie developers, is to avoid dealing with gigantic licence-holders at all. It's less costly to not-so subtly allude to the look and feel of a familiar toy rather than outright feature the licensed product, after all.

Chiefly inspired by action figures, as well as toy-based movies like *Toy Story* and *Small Soldiers*, *Hypercharge: Unboxed* is a wave-based co-op shooter that enjoyed much success opting for this affectionate (though staunchly off-brand) method. For developer Digital Cybercherries, it was enough to evoke such toys as Beyblades and Rock 'Em Sock 'Em Robots while letting you fight amongst them from a ground-level, toy-like perspective. In-game, it's done to great effect, elevating what's otherwise a tried-and-tested video game concept. "We always focused on the nostalgia of it all," says *Hypercharge: Unboxed* character artist and animator Josh Lennen. "We wanted the player to recognise the idea of a toy, but we never sought to outright copy an existing one. We draw inspiration from other toys, combine it with features found in various designs, and make a toy that fits with our gameplay."

The game's CyberRex enemy is a great example of this. "We strap armour onto a T-rex toy," says

Lennen. "It's got the nostalgia of an eighties TV show and toy series, but a completely unique design with a dose of steroids. It could be fully functional with rotating turrets and push button missile launchers, but completely separate from an existing IP."

The core gameplay loop of *Hypercharge: Unboxed* might be deceptively simple, challenging you and your friends to either defend or attack against hordes of dangerous toys in all manner of oversized settings. But it managed to get away with it due to its reverence for all things plastic, and the distinct toyetic quality found in everything from the LEGO™-inspired forts you can build to the Nerf-like guns you fire. This simple foundation is something Digital Cybercherries has continued to build on via DLC and new updates over time, proving there's an appetite for toy-based games based on this era – whether the toys being depicted are licensed or not.

Channelling such a sense of nostalgia was always key for the team behind *Hypercharge*, hence why they weren't all that taken aback by the game's popularity. "[It] aesthetically packs a punch," explains Digital Cybercherries' Joe Henson. "The visuals look striking and realistic, which helps evoke nostalgia and make the viewer instantly think, 'Wait, I had a toy similar to this!' Most of us have a soft spot for action figures, or at least we have fond memories of them. They really are a big part of our childhood. This type of personal connection resonates well with the player. Honestly, the number of emails we receive from mums and dads thanking us for creating *Hypercharge* is huge."

Of course, as well as the realism of the visuals, it helps that endlessly gunning down toys is never not fun.

Finding the fun

The relationship between toys and video games is a unique one. On the one hand, those based on a specific brand continue to be tied to the demands of their licence-holder, to a certain extent, but as the likes of *Hot Wheels Unleashed* and WayForward's *Barbie* trilogy proves, that's only a hindrance if you let it be. Besides, it speaks volumes that developers big and small are now in a position to take their own approach when looking to translate a toy into a game.

Games based on toys are no longer the preserve of huge companies out to make a quick buck by promoting their products. Regardless of the approach, toys are designed to be fun to play with, and any game based on or inspired by them – whether they're arcade racers or hectic shooters – should strive to be the same. ⓦ

> "The licensed game world was driven by the idea of games-in-a-box"

Over the years, *Hypercharge* has received several updates that include new modes, a tutorial, and character vaulting.

Joe Henson, PR and marketing manager at Digital Cybercherries.

Toolbox

The art, theory, and production of video games

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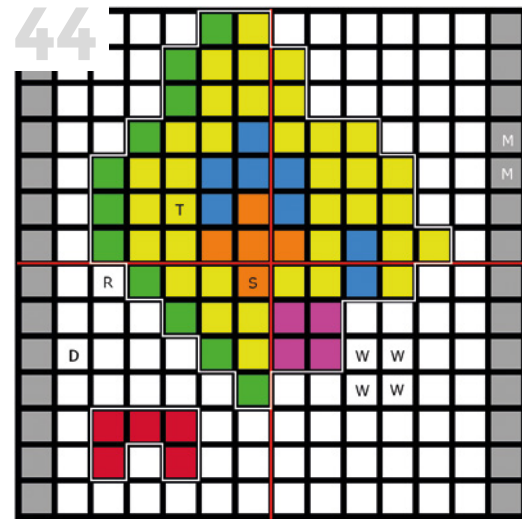
⌃ Randomly generate a fantasy city the analogue way – Konstantinos shows you how on page 44.

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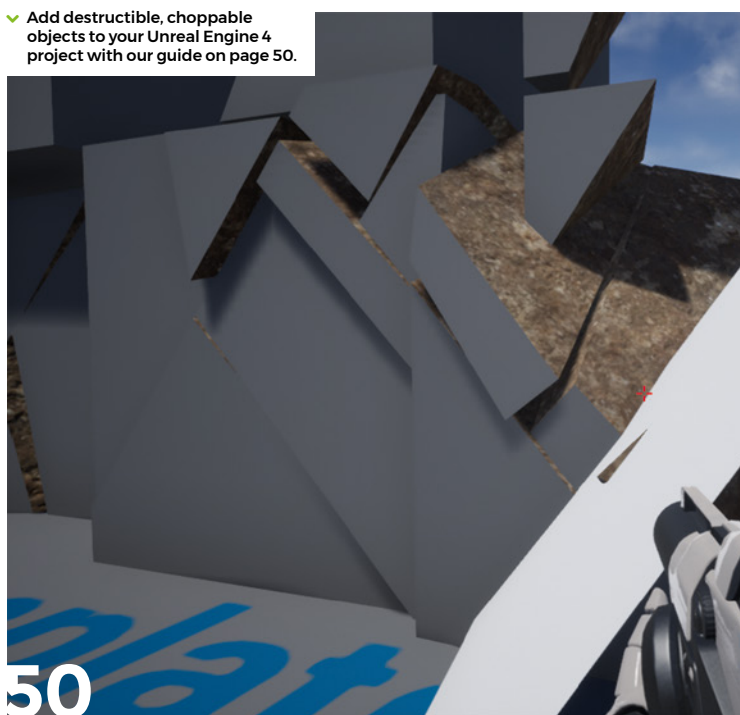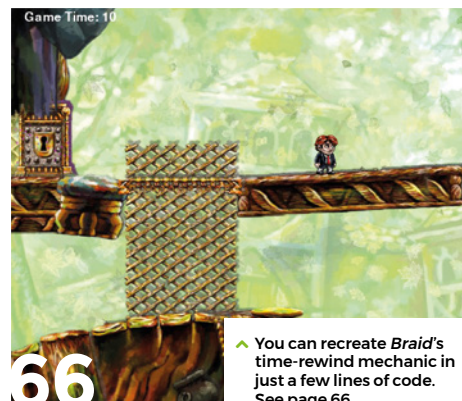⌃ Are your shooter maps lacking a certain oomph? Then check out our essential tips for 3D level design on page 58.

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A fantasy city
generation tool

Create a fantasy city using nothing more than some dice and a few handy tables
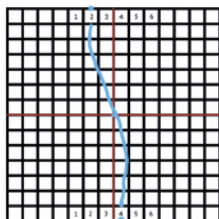
AUTHOR
KONSTANTINOS DIMOPOULOS

Konstantinos Dimopoulos is a game urbanist and designer combining a PhD in urban planning with video games. He is the author of the *Virtual Cities* atlas, designs game cities, and consults on their creation. **game-cities.com**
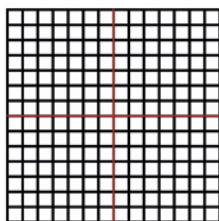
Figure 1: An empty grid, waiting for my city to be generated.

Figure 2: Now we have a river, running north to south.

Semi-random, rules-based city generation tools – what we'd call procedural generation in video games – can provide creative solutions and serve as first drafts for the making of a fictional setting. What's more, making and experimenting with such tools can offer insights into the city design process itself.

The pen, paper, and dice approach shown here will help you plan a fantasy city, mostly inspired by medieval urbanism. To use the generator, you'll need a few traditional six-sided dice (D6), a pencil, some coloured pens or highlighters, and a piece of A4 paper.

1. THE SETUP

To begin, roll a D6 die and consult **Table 1** to determine your city's size. This roll will not only decide the number of districts in your city, but also give it a size rank and assign a level of complexity – both societal and physical.

To see which races inhabit the city, roll 2D6 (two six-sided dice, and add the results) for each one, and consult **Table 2**. The first race rolled is the dominant one, and the last one the least powerful or numerous. Rolling a race for the second time leads to a hybrid race. So, rolling for elves twice gives you populations of elves and half-elves.

Table 2:

2D6 roll	Race
2	Trolls
3	Orcs
4	Goblins
5	Halflings
6	Humans
7	Dwarfs
8	Elves
9	Gnomes
10	Lizardfolk
11	Undead
12	Demons

Now, draw a grid of 14 × 14 on an A4 piece of paper, ensuring that the geometric centre and the central axes lines stand out. Keep in mind that any tile you may be asked to add to the city that doesn't fit in the grid will be ignored.

Table 1:

D6 roll	Size rank	Districts	Races	Population	Detail dice
1	1	4	1d6	10,000	2
2	1	4	1d6+1	15,000	3
3	2	5	1d6+1	30,000	4
4	2	5	1d6+2	60,000	5
5	3	6	2d6-1	100,000	6
6	3	6	2d6	200,000	8

Example city: started by rolling a 5, and thus a Size Rank 3 city of 100,000 residents. I then rolled a 2 and a 3 for the number of races (2D6-1), meaning there would be four races in it. To pick said races, I rolled a 6 on 2D6 to get humans, a 5 for halflings, a 9 for gnomes, and another 5 for half-hobbits (these are gnome-halfling hybrids, apparently).

You can see my initial grid in **Figure 1**.

2. ENVIRONMENT

The wider geography surrounding a city defines everything from its climate to its topography. To determine terrain, take a look at **Table 3**.

Table 3:

D6 Roll	Environment
1	Mountains
2	Grasslands
3	River (north to south)
4	River (east to west)
5	Mountains (east and west) and River (north to south)
6	Lake

When rolling a 1 for mountains, a second roll is required to place the mountain ranges according to **Table 4**.

Table 4:

D6 Roll	Mountain Type
1	A single mountain range across the northern side of the grid. 1 tile wide.
2	A single mountain range across the eastern side of the grid. 1 tile wide.
3	A single mountain range across the southern side of the grid. 1 tile wide.
4	A single mountain range across the western side of the grid. 1 tile wide.
5	One range to the east, one to the west. Each 1 tile wide.
6	The city is enclosed in mountains. Surround it across all 4 sides of the grid.

Rolling a 2 for grasslands requires no additional action, whereas a 3 generates a river running north to south. To do this, roll 1D6 to select the starting point at the northern edge of the grid, and another D6 to select a point at the southern edge. Draw a (blue) line that connects those two points, and passes through the grid centre to create the river (see **Figure 2**).

The east to west river follows the exact same logic, while rolling a 5 combines a north to south river with mountain ranges on the east and west. To create a city by a lake – a roll of 6 – you will have to roll another D6 on the following table to determine its shape (see **Figure 3**).

To place the shape, roll again. A 1 puts it on the northwestern corner of the grid, a 2 on the southwestern, a 4 on the northeastern, and 5 on the southwestern. Formations 3 and 6 are to be placed on the eastern and western ends of the grid, respectively. You can decide their exact positions yourself (see **Figure 5** overleaf).

Example city: rolled 1 for mountains, and then a 5 for a valley with mountains to its east and west.
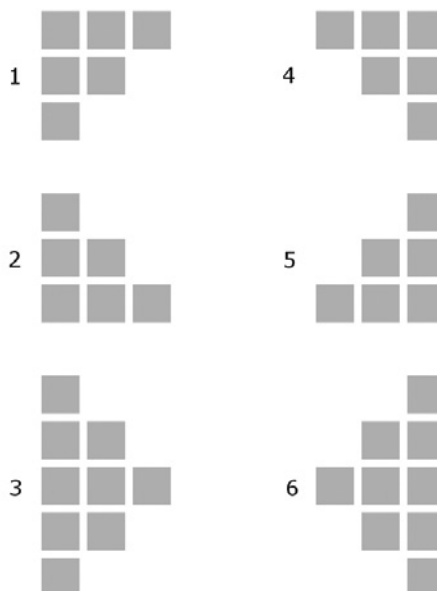
3. THE CORE

Roll 1D6 to determine the type of urban core your city has. A 1, 2, or 3 mean it was built around a castle; 4, 5, or 6 around a monastery. Roll 1D6 to pick the core's shape (see **Figure 4**), and make certain at least two of the core's squares touch the grid's centre. ➡
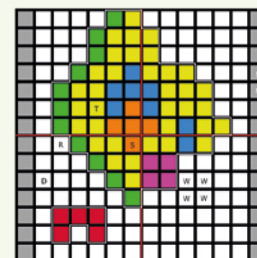
EXAMPLE CITY

Here's my completed city, which has a monastery in the centre (picked out in orange), is partly surrounded by fields (green), and sits between two mountain ranges (grey). Blue denotes an upper-class district; yellow's the popular district for the masses, purple's the holy district, while the burgundy shape is a palace. Its population is roughly 100,000, a melting pot comprising humans, halflings, gnomes, and gnome-halfling hybrids.

‹ **Figure 3:** A selection of lake tiles.

⌄ **Figure 4:** Your dice roll will determine the shape of the city's core.
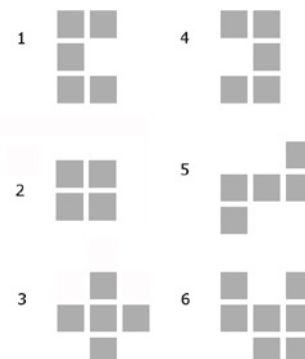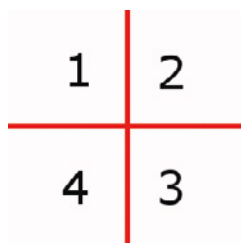
Table 5:

D6 roll	City Size rank 1 and 2	City Size rank 3
1	1-tile deep zone attached to the Core's north	2-tile deep zone attached to the Core's north. Also a 2×1 area to the east or west of the Core. Minimum distance for it 1 tile, maximum 2 tiles.
2	1-tile deep zone attached to the Core's south	2-tile deep zone attached to the Core's south. Also a 2×1 area to the east or west of the Core. Minimum distance for it 1 tile, maximum 2 tiles.
3	1-tile deep zone attached to the Core's east	2-tile deep zone attached to the Core's east. Also a 2×1 area to the north or south of the Core. Minimum distance from it is 1 tile, maximum 2 tiles.
4	1-tile deep zone attached to the Core's west	2-tile deep zone attached to the Core's west. Also a 2×1 area to the north or south of the Core. Minimum distance for it 1 tile, maximum 2 tiles.
5	1-tile deep zone attached to the Core's east or west	2-tile deep zone attached to the Core's north east or south west. And 1-tile deep zone attached to the Core's west or east.
6	1-tile deep zone surrounding the Core	1-tile deep zone attached around the Core. And 1-tile deep zone attached either to the north and east or south and west.

▲ **Figure 5: Use this grid to define where your fields will lie.**

4. UPPER CLASS DISTRICT
Depending on the size rank of your city, roll a D6 and look up the result in the appropriate column in **Table 5**. Remember that the nobles and rich of the medieval town always stuck closer to the important city centre.

5. THE MASSES
The popular district differs for each size rank. Roll a D6 and check **Table 6** to determine the width of the added zone to each compass direction.

Table 6:

D6 roll	Size rank 1	Size rank 2	Size rank 3
1	0N, 1S, 1W, 1E	1N, 2S, 1W, 1E	2N, 2S, 2W, 3E
2	1N, 0S, 1W, 1E	2N, 1S, 1W, 1E	3N, 2S, 2W, 2E
3	1N, 1S, 0W, 1E	1N, 1S, 2W, 1E	2N, 3S, 2W, 2E
4	1N, 1S, 1W, 0E	1N, 1S, 1W, 2E	2N, 2S, 3W, 2E
5	1N, 1S, 1W, 1E	2N, 2S, 1W, 1E	2N, 3S, 2W, 3E
6	2N, 2S, 1W, 1E	2N, 2S, 2W, 2E	4N, 2S, 3W, 2E

6. FIELDS
Fields within city walls are fitting, both historically and aesthetically. To come up with them, roll on **Table 7** to place fields in the logical regions that the grid is broken up into. **Figure 5** shows the regions.

For size rank 3 cities, roll another D6 and once again apply the results. Note that you can't add tiles outside the grid.

Table 7:

D6 Roll	Region
1	1
2	2
3	3
4	4
5	1 and 2, or 3 and 4
6	A field completely encircles the city

7. SPECIAL DISTRICT 1
The special district is a geographical result of increased civic size and a resulting specialisation, such as manufacturing. Special districts are only added to cities of size rank 2 and 3. Roll 1D6 on **Table 8** to get a district type alongside the placement method that applies to it.

Table 8:

D6 Roll	District Type	Creation Method
1	Merchants & Artisans District	1
2	Holy District	2
3	Guilds District	2
4	Magical Town	2
5	Manufactories	1
6	Military Facilities	1

Creation method 1: Add a zone with a depth of 1 tile. Roll to determine the region in which to add it, and re-roll any 5s or 6s. The zone takes up the entire region.
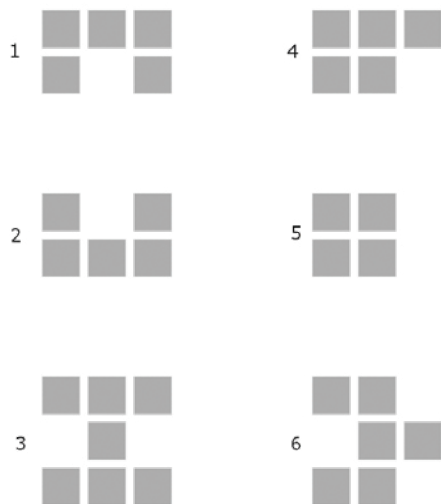
Figure 6: Use this table to set the shape of your city's palace.

D6 Roll	Type	Generation Method
1	Learning, Libraries, and Sages district	Outside main city. 4 tiles arranged freely. Roll to determine region. Re-roll 5, 6.
2	Old Town	2×2. Throw dice on grid to determine position. Doesn't overwrite Core and Special District 1.
3	Ghetto	2×2. Throw dice on grid to determine position. Doesn't overwrite Core and Special District 1.
4	Great Palace	Outside city. Pick position. Roll on table for shape. Surrounded by walls.
5	Red Light	2×1 or 1×2. Throw dice on grid to determine position. Doesn't overwrite Core, Upper, and Special District 1.
6	Fortifications Zone	1 tile deep zone around city, separated by wall.

Creation method 2: Add a 2×2 zone that replaces all sorts of pre-existing tiles except those of the Core. To place its upper left corner, roll 2D6+1 and count as many tiles from the western edge of the grid, and another 2D6+1 and count from the northern edge to get its coordinates.

8. SPECIAL DISTRICT 2
Roll on **Table 9** for a last district that is only applicable to size rank 3 cities.

The shapes of the Great Palace are to be determined by rolling on the table shown in **Figure 6**.

9. WALLS AND GATES
Walls surround the city. Roll on **Table 10** to determine number and placement of city gates.

Table 10:

D6 Roll	Gates
1	North and south
2	West and east
3	North, south, west, and east
4	Every face
5	A single gate
6	North, south, west, east, and two more of your choice

10. ADDING DETAIL
Finally, each city needs details and places. Roll the number of Detail Dice appropriate to your city's size (see **Table 1** overleaf), and add the details prescribed on **Table 11**, depending on the type of tile they land on. The 'area' quality means that all tiles touched by the die get the detail.

EVOLVING THE TOOL
After trying out the generator a few times, feel free to add more options and fiddle with it. You could use 10- or 12-sided dice, expand the grid, or even design ways to generate main roads; for example, by connecting gates and squares. You could also adapt it to sci-fi or contemporary settings – theoretically, the system's flexible enough to generate all kinds of towns and cities. Ⓦ

CITY NAMES
You could create your own rolling table to generate city names, or you could try out this online fantasy name generator: **wfmag.cc/city-names**.

Table 11:

| D6 roll	City	Country	Water	Mountain
1	Tower	Dungeon Entrance	Island Fortress	Fortress
2	Inn	Ruins	Sunken Ship	Ruins
3	Monastery	Monastery	Silent Waters	Shrine
4	Guild House	Estate	Pleasure Barge	Hideout
5	Marketplace (Area)	Windmills (Area)	Fishing Area (Area)	Mines Entrance
6	Square	Jousting Grounds	Island	Forest

The principles
of game design

When it's time to put your video game or other piece of work out into the world, hell is other people's opinions

AUTHOR
HOWARD SCOTT WARSHAW

Howard is a video game pioneer who authored several of Atari's most famous and infamous titles. His new book, *Once Upon Atari: How I Made History by Killing an Industry*, is out now. **onceuponatari.com**
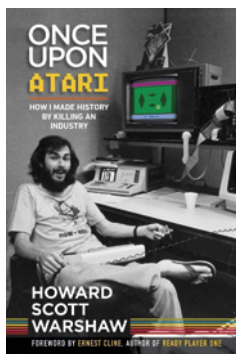
⌃ Not technical enough? It's Howard's book, *Once Upon Atari*, available now.

"I shot an arrow into the air, it fell to earth, I knew not where," is the beginning of a short poem by Henry Longfellow. A recent experience leads me to paraphrase it thus: I put a product into the world, yet foresaw not how it unfurled.

As with any creative production, when I put it out to the world I expect something to come back. Hoping it's positive, but knowing full well feedback isn't always delightful (after all, I did release the *E.T.* video game). But love it or hate it, I hope to learn something from how the feedbacker relates to the product. Such was the case with my book, *Once Upon Atari: How I Made History by Killing an Industry*. I expected a wide variety of feedback, but I never anticipated this:

"I like anything Atari – so I recommend if you are a fan of the early VCS, get this for sure..." Sounds good so far. Reading on, I encountered this: "... There is very little technical info in this book. It's dumbed down so a ten-year-old could read it and understand everything. *Another disappointment*." [Italics are mine, but the quote is verbatim.]

❯ *E.T.*: a game often described as the worst ever. But how many of its critics have actually played it?

I found this disappointing. Not because the reader missed the point – they didn't. I intentionally wrote *Once Upon Atari* in a way that makes technology and technologists understandable to everyone, not just insiders. That's what I was going for, and clearly he got it. Mission accomplished, right? Apparently not. He perceived my intention accurately but took it as a flaw because it wasn't what he was looking for. He was disappointed by his unfulfilled expectations.

We have a saying in the therapy community: an expectation is a down payment on a resentment. His expectations (formed in advance and quite contrary to my published characterisations of the book) created the basis for how he felt about the book. It's the difference between curiosity and judgement. Instead of just reading it to see what's there (curiosity), he read it to find something he was already looking for (judgement). When we come from curiosity, we're open to anything and may gauge the experience freely. When we come from judgement, the world is bifurcated into matches and non-matches, typically with non-matches summarily discarded. Curiosity opens the world; judgement tends to shrink it.

And where did he get these expectations? I never represented the book as a manual or technical treatise. If you look at the promos, it's all about the drama of my journey, not the layout of the chipset. I chose wit and wisdom over bits and bitdom. Does any of that matter? Not too much. The fact remains he read the book seeking a very specific experience, which unfortunately was not the one I was offering. That's not extraordinary; that's just life.

As the creator of the work, I have several options. I can explain how this is a feature, not a bug, denying his opinion. I can point out he has misinterpreted promotional messages, invalidating his opinion. I can write him off as a doofus, ignoring his opinion. It seems whichever way I turn, it's all about his opinion. How can I make him see and acknowledge my design intent? How can I get him to appreciate (or at least consider) my work in that light?

The point is: regardless of *my* intention with a product, consumers will judge it and form their opinions based on *their* expectations… and that's appropriate. To be clear, I don't like it, but it strikes me as appropriate. So, what are we to do with this?

Some devs slam people who don't like their product, calling them simps, lame-os, and a cornucopia of colourful epithets. The truth is: opinions are always right and never need to be defended. The only thing you cannot righteously do with an opinion is call it a fact (yes, I'm aware that some rather self-righteous people do so regularly). Opinion is the furthest thing from fact because fact is all about verifiability and opinions are independent of validity. If I say it's my opinion, that's valid. If I change it a moment later, that's valid too. Because opinions are just opinions. And who cares about opinions? As developers, we do!

In our business, opinions matter a great deal. As video game developers, we cross over a line where opinions not only matter, they can make the difference between success and failure. Between profit and loss. What about reviews? Word of mouth is crucial, but reviews can dictate which people will bother to pick up a game and form an opinion. Trusted reviewers earn our trust over time with consistency and quality. We can tell.

I try to respect opinions of people who sample my work. Over the years, I've had lots of opportunities to practice this skill. When people tell me how bad *E.T.* is, I never argue with them, but I do ask them one question: 'Have you ever played it?' I don't challenge opinions, but occasionally it's fun to qualify them.

Opinions are not only biased by expectations, they can also be biased by assumptions. Lots of people approach a piece of entertainment assuming it was made specifically for them. This isn't true, of course, but that's how they judge it. And often they're justified in this belief, since promotional materials will tell them it was made specifically for them. But even without ads, people still come from this mindset. As developers, our challenge is to reap the feedback and improve our products, because trying to improve the opinions is a fool's gambit. It's also nearly impossible to do, which kind of makes it more attractive.

When we put our designs out there, they come back to us in unpredictable ways. When you shoot those arrows into the air, try not to be too shocked when one or two land in your foot. Ⓦ

> **"When people tell me how bad *E.T.* is, I never argue with them"**

BAD INFLUENCE?

In the virtual world of social media and algorithmic targeting, with amplification, shadowing, fake like factories and so forth, opinions are the coin of the realm. What about influencers, people whose opinions seem to carry more advertising weight? How can we tell if the opinions floating around are genuine thoughts of thoughtful players or marketing fantasies intended to influence rather than report? How do we separate the wheat from the chaff? Must I play everything for myself to obtain reliable data for my opinion? It's a bit of a sticky wicket, to be sure.

Slice and dice destructible objects in Unreal Engine 4

Want to chop up objects with a sword, Metal Gear Rising: Revengeance–style? Ryan shows you how

AUTHOR
RYAN SHAH

An avid developer at The Multiplayer Guys with a strong passion for education, Ryan Shah moonlights as KITATUS – an education content creator for all things game development.

A 'slice and dice' mechanic can be used in all kinds of ways in your projects, from chopping up food to adding a more visceral edge to your swordplay. Here, we're going to create a system loosely based on *Metal Gear Rising: Revengeance*'s Zandatsu mechanic to learn all about Procedural Meshes and how we can chop them up.

The key to a mesh slicing system in Unreal Engine is something called an imposter. The idea is, we take a mesh, create a procedural version of it, and from there, use that data to alter the visuals of said mesh to achieve our slicing effect. For the purposes of this guide – and to keep it simple to explain – we'll be starting with the First Person sample project, which you can create when launching Unreal Engine or via the Add/Import menu above the content browser (Add/Import > Add Feature or Content Pack > First Person).

We're going to add a Debug Mesh to the first-person character, so we can see the rotation of our sword, as well as the general direction and distance of our attack. With the First Person example content in your project, navigate to Content > FirstPersonBP > FirstPersonCharacter in your content browser. Double-click it to open the Blueprint editor for our first-person character.

Because we're focusing on sword slicing, we're going to remove the existing shooting mechanics from the example. Within the Event Graph of the FirstPersonCharacter, look for the red event for InputActionFire (or InputTouch). Select everything connected to the event and delete it; only the original red event (either the ActionFire or Touch) should remain from the execution line (see **Figure 1**). We'll be coming back to this later.

Let's go back to creating the Debug Mesh. Head into the Viewport tab (under the large Compile button at the top of your screen) and then head into the Components view (which by default is on the top left of your screen). Look for FP_Gun, select it, then press the green Add Component button at the top of your Component tab. Find the cube and select it. Once it's been
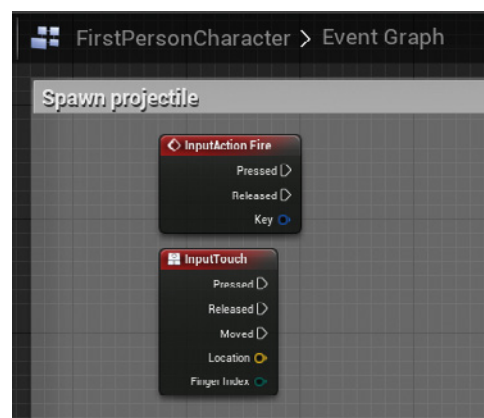
> **Figure 1: Before we can cut, we must first remove the existing shooting mechanics. You should have nothing connected to your fire/ touch events, as shown.**

created, check that it's a child of your FP_Gun. With the cube selected, go to the Details panel and set the Transform to these values:

```
Location
        X: 0.0, Y: 180.0, Z: 10.0
Rotation
        X: 0.0°, Y: 0.0°, Z: 90.0°
Scale
        X: 2.5, Y: 2.5, Z: 0.1
```

With the Debug Mesh created, we'll then use it to show how the cut's going to affect whatever cuttable mesh the player looks at. For that reason, we're going to disable the collision on it for now as it's just a visual aid. Within the same details panel we used to set the transform, scroll down to the Collision section and set the 'Collision Preset' to 'NoCollision'.

"A 'slice and dice' mechanic can be used in all kinds of ways in your projects"

We want to be able to rotate this mesh, so head back into the Event Graph and in an empty space, right-click to open a palette. In the search box, look for Mouse Wheel and create the Mouse Wheel Axis event. If you'd like to use a different button to rotate your 'sword', then feel free to put in whichever event you'd like instead.

The event we've created gives us a float output based on the mouse wheel input. This means that if the mouse wheel is being scrolled down, the float will be 1.0; if the mouse wheel is being scrolled up, the value out will be -1, and not moving the mouse wheel will give us 0. This is enough data for us to know not only if the player is using the mouse wheel, but in what direction they're spinning it.

Instead of writing complicated code that does different things based on these states, we can simply use the float in a maths equation. Since $X * 0$ will always $= 0$, we can add rotation to our mesh based on the current value, as if the player isn't moving the mouse wheel, the result will be "Add 0 (or nothing) to this".

Grab the green output pin of the Mouse Wheel event and drag it into an empty space, then, in the search box, type 'float * float' (you can use the search term 'multiply' if you're struggling to find it). In the Float Multiplication node that gets created, change the 1.0 to 10.0 (or any speed you like – remember, 1 from the Mouse Wheel event will be full speed forward and -1 will be full speed backwards).

Look at your Components menu on the top left of the window and find the cube we created earlier. Click it and drag the cube into the Blueprint. Click the output pin of the created node, drag it into an empty space, and make ➡
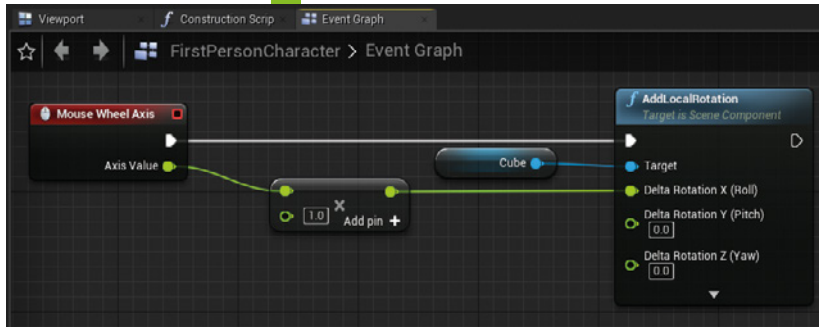
⌃ **Figure 2: This is what your Blueprint code should look like for your spinnable cube. Right-click the Rotation pin and select 'Split' if your AddLocalRotation looks different.**

MESHES

The example content gives you many different meshes, effects, and Blueprints to play around with. Static Meshes such as 1M_Cube can be found in almost all the example projects in the Add Feature or Content Pack menu.

an AddLocationRotation node. Right-click the purple rotation pin of this node and select 'Split' to give us the float values. Plug the output of the Multiplication node into the AddLocalRotation's 'Delta Rotation X (Roll)' input. Then simply connect the execution pins of the Mouse Wheel Axis event and AddLocalRotation together and that gives us our spinning mesh (see **Figure 2** for how the Blueprint should look). You can give it a try by compiling, saving, and pressing the Play button on the top middle of the window.

VERTICAL SLICE

With our cube correctly spinning on command, we can move on to the next step. While we'll be returning to the FirstPersonCharacter soon enough, we need a mesh we can slice up, so let's create that next.

To create a choppable actor, we need to head to the content browser and press the Add/Import button. Select Blueprint > Blueprint Class and then select Actor as the parent class. Name it 'BP_SliceActor'. Once created, double-click to open it.

We need to add a component, just like we did before. Go to the 'Add Component' area and add a Static Mesh. With the Static Mesh selected, head to the Details panel on the right and select

the drop-down menu next to Static Mesh. Select 1M_Cube for the mesh to use.

We are going to make a slight adjustment to this mesh to be able to create and use a procedural version of it – we need to allow CPU access. With the 1M_Cube set as the Static Mesh, press the magnifying glass just under the asset name. This will locate the asset within your content browser. Double-click it to open it.

In the window that opens, use the 'Search Details' text entry box on the top right to search for 'Allow CPUAccess' (**Figure 3**). Make sure the checkbox is set to true, then save and close the asset. Once that's done, head back into BP_SliceActor.

We're now ready to create the procedural version of our mesh. Head into the Blueprint Event Graph so we can create it. What we're about to do is create a Procedural Mesh, copy the existing mesh data, and then destroy the old mesh as it won't be needed once we've copied the important information across.

Normally from this point within code, you'd create your own Component at run time and set it up after the fact, but there's a variable locked away at pre-spawn for Procedural Meshes, meaning we need to create another Component like we did the StaticMesh. Press the green Add Component button and look for the ProceduralMesh Component. Select it to add it.

Select the newly created ProceduralMesh component and head over to the Details panel. Under 'Procedural Mesh', there's a section marked 'Use Complex as Simple Collision'. Make sure this checkbox is unchecked to set it to false.

Now we need to copy the data from the mesh into our Procedural Mesh. To do this, drag both

⌐ **Figure 3: The Details panel for Blueprints, meshes, images, and other assets are filled with options that can change an asset. Use the search box to look for a specific value.**
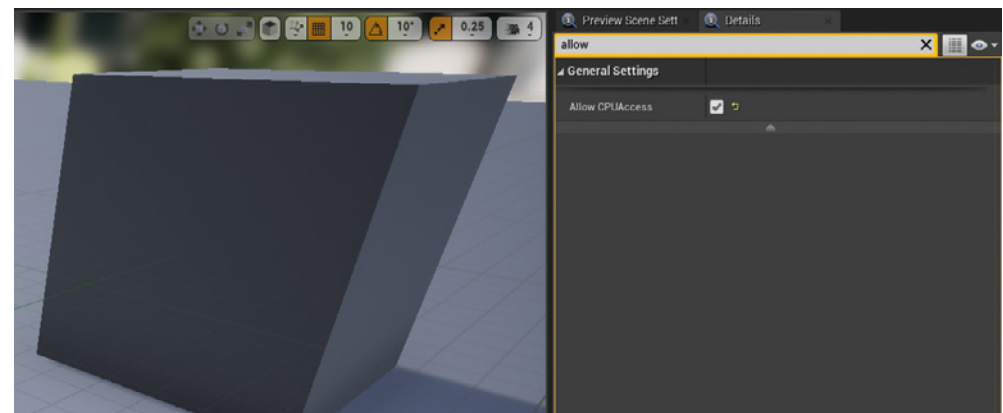
the StaticMesh and Proc Mesh variables into the Blueprint. From the StaticMesh variable made, drag from the output pin and create a Copy Procedural Mesh from Static Mesh Component node. Hook the left-hand execution pin into the right-hand execution pin of the Event BeginPlay node already in the Event Graph.

Your StaticMesh variable should be pre-connected to the StaticMeshComponent pin, but if not, connect it now. Connect the Procedural Mesh variable into the ProcMeshComponent pin and set 'Create Collision' to true. We've now copied the data over, so we no longer need the original mesh. Drag the StaticMesh variable in again and this time create a Destroy Component node from the output pin. Hook the Destroy Component's leftmost execution pin into the execution output of the Copy Procedural Mesh from Static Mesh Component node – your graph should now look like **Figure 4**.

Compile, Save, and close the Blueprint. Go ahead and drag an instance of the BP_SliceActor Blueprint into your scene. To make things easier, you can adjust the scale (try the values X: 3.0, Y: 3.0, Z: 3.0) to make the target easier to hit. If you press play now, you'll notice that we can't do anything to the mesh yet. This is because we have to add some more logic to be able to cut the mesh into pieces. Let's put that final piece of the puzzle together now.

> **"We have to add some more logic to be able to cut the mesh into pieces"**

CHOP CHOP
To get started, head into the FirstPersonCharacter Blueprint again. When the 'Shoot' button's pressed, we're going to check the space in front of the player's gun, see if it's hit a Procedural Mesh, check the rotation of the debug cube, and slice said Procedural Mesh in the direction of the debug cube.

To check for a Procedural Mesh, we're going to fire a line from the start of the debug cube (or the end of the gun, since they're the same location) and look ahead of it. If we've hit a Procedural Mesh, that line will get stopped before it reaches the destination it expects, so we know we've struck gold.

To do this, head to InputAction Fire in your FirstPersonCharacter Blueprint. Drag the Cube variable in that we created earlier – it's in the Component list; select 'Get' if asked). From the ➡
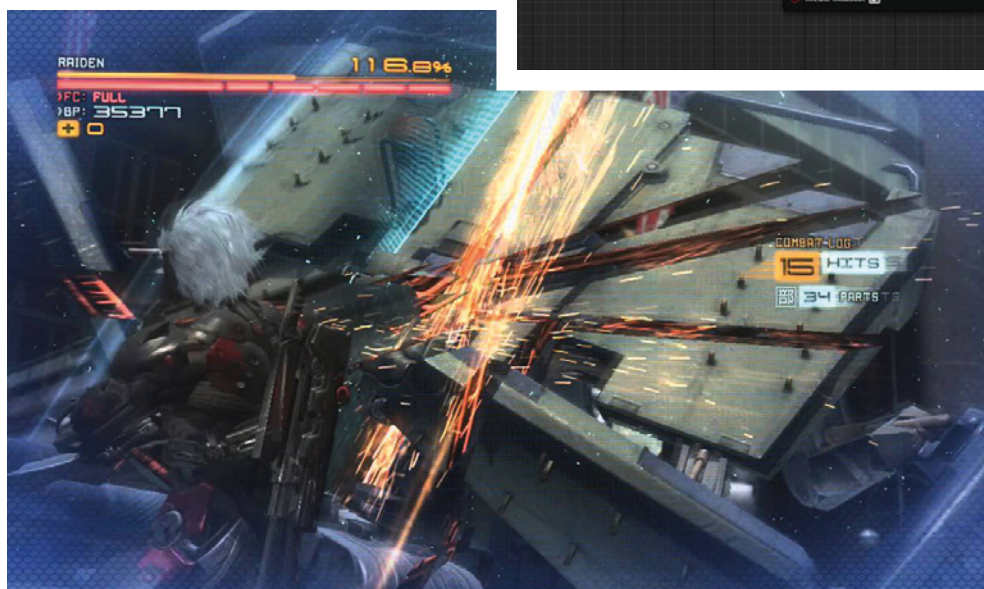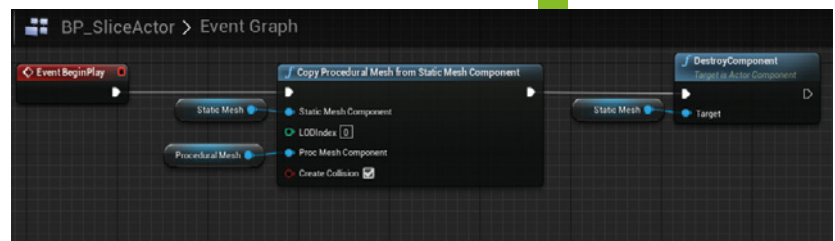
Figure 4: This is what your BP_SliceActor should look like. It's important to ensure you've turned 'Use Complex as Simple Collision' off before continuing.

Metal Gear Rising: Revengeance's Zandatsu mechanic could be used to chop up enemies and inanimate objects alike.

You can make chopping up a destructible object even more satisfying by adding a material to its procedural meshes – we've added a concrete texture to ours here.

Figure 5: Line traces are powerful tools for checking one object is in range of another. They're cheaper in performance terms than checking overlaps, too.

blue output pin, we actually need two nodes – GetWorldLocation and Get Forward Vector. Go ahead and create them now. GetWorldLocation gets the absolute location of where the cube is in the game world, and Get Forward Vector gets the direction in 3D space that's in front of the cube – which is perfect for what we're trying to do here.

We're going to need a little bit of maths now (don't worry, not a lot!). Basically, the location of the cube is going to be the start of our line trace and the end point of said trace is going to be that starting location plus an offset, with the direction filtered in to make sure we're looking in the right direction.

We already have our starting location, so we only need to calculate the end location. From the yellow output pin of GetWorldLocation, drag into empty space and look for 'Vector + Vector'. Once you've created that node, click the second '+' to make a new pin, click that pin, and drag it to an empty space. This time create a Vector * Float node ('Multiply' is a search term that can be used to find it if you're struggling). Plug the input (the leftmost pin) of the created Vector * Float node

into the output (or Return Value) of Get Forward Vector and the output into the second '+' of the Vector + Vector node. In the green float input box on the Vector * Float node, type a large number – '1000.0' should do the trick.

Now, in order to actually trace these distances, create a LineTraceByChannel node: do this by clicking the Pressed pin on the InputActionFire event, dragging it to an empty space, and searching for the Line Trace node in the search box. Next, click the Return Value pin on GetWorldLocation and drag it to the Start pin on LineTraceByChannel, then click the rightmost output pin on the Vector + Vector node and drag it to the End pin on LineTraceByChannel. Ensure 'Ignore Self' is set to true. If you want to confirm the trace is working when it comes time to check, you can change 'Draw Debug Type to 'For Duration' to make the trace visible to the end user. Just remember to turn it off when you're happy the system functions as intended. Check **Figure 5** to see how the whole Blueprint should look.

At the moment, we're just shooting the line and aren't using the data that returns. Let's fix that next. From the Out Hit pin of the LineTrace, drag into empty space and select 'Break Hit Result'.

The created node holds all the data collected from the trace. Note that there are a lot of pins, but not all of them will contain valid data. For our project, this fact plays to our advantage. Instead of checking 'Did we hit something?" and then doing our checks, we can simply cast the result to a ProceduralMesh – if it fails, we didn't hit anything we care about, so we can stop what we're doing.
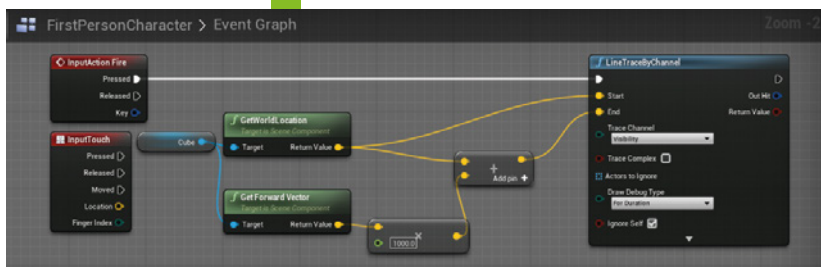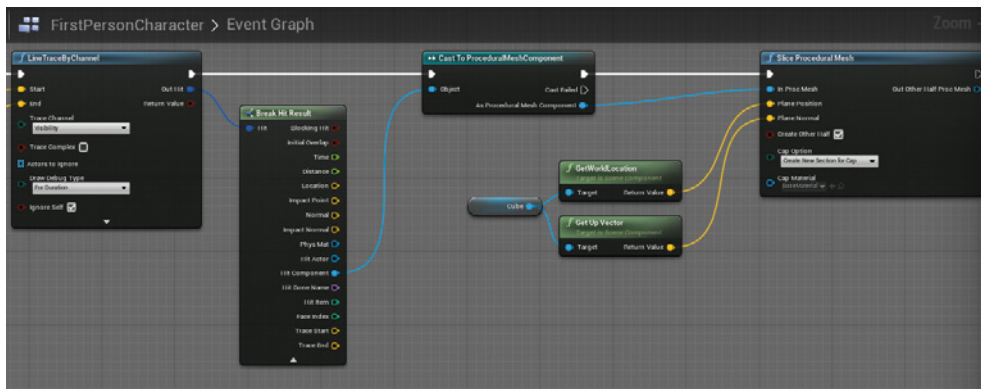
Since the ProceduralMesh we created was a component, click the Hit Component output in the Break Hit Result node and drag it to an empty space. When it asks, create a Cast To ProceduralMeshComponent node. Hook the input execution pin to the output execution pin of LineTraceByChannel. What this node is doing is asking 'Did we hit a component, and if so, was it a ProceduralMeshComponent?'. If it was, we continue. If not, we stop. Now comes the fun part. Time to slice!

HACK AND SLASH

From the blue As ProceduralMeshComponent pin on the Cast To ProceduralMeshComponent node, drag into an empty space and create a Slice Procedural Mesh node. There are a number of pins on the created node but they're not as daunting as they first seem. Before we go on, connect the execution pins together if you haven't already.

For 'Plane Position' and 'Plane Normal', we can use the data from our debug cube. Drag in the Cube variable from the Component menu again, and from its output pin, create a GetWorldLocation and Get Up Vector. Get Up Vector gets the 'Which direction is up' in a similar way to Get Forward Vector.
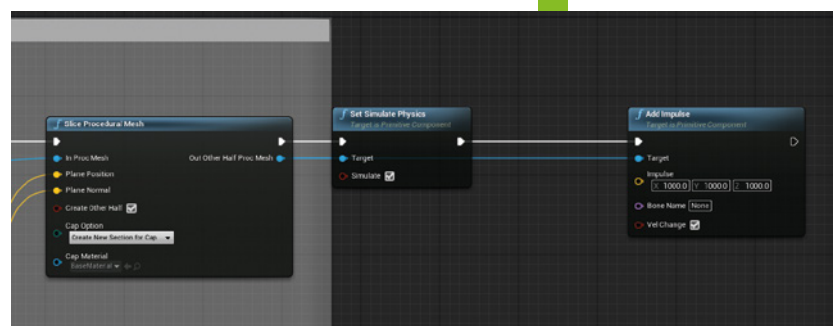
Connect the output of GetWorldLocation to Plane Position (as this is the location of our cut) and Get Up Vector's output pin to Plane Normal (as this is the direction of our cut). Set 'Create Other Half' to true as we want to cut the mesh into pieces. Make sure Cap Option is set to 'Create New Section from Cap' – this will ensure that it creates a second piece. Cap Material is the material you want to show inside the cuts made, so for now, select any material – but in the future, feel free to come back and change this to something more vibrant... or fleshy! See **Figure 6** to see how this latest part of the Blueprint should look.

We've almost finished our system – but first, we need to tell the new pieces created to simulate physics, and for a little bit of visual flair, we can add a bit of physical force (or Impulse) to make the sword slice feel like a satisfyingly hefty strike.

From the blue Out Other Half Proc Mesh node, create a Set Simulate Physics node, and check the box next to Simulate to set it to true. Grab the same node again for an Add Impulse node. Drag Set Simulate Physics' output pin to the input pin on Add Impulse to link it all into the execution chain. For the Add Impulse node, set the Impulse to 1000, 1000, 1000, and check the 'Vel change' box to set it to true (see **Figure 7**). Compile, save, and test out your hard work. You should be able to correctly slice and dice your mesh like a true ninja.

We've now learned all about Procedural Meshes and how to slice them up. From here, you can apply your knowledge to alter and tweak the systems to create more intricate meshes – perhaps even putting together a fruit ninja clone using the same systems! The most important part of extending this system now would be to replace the Cube Mesh. From here, the system should be flexible enough to deal with the vertices of a new mesh. Don't forget to also play around with Cap Material to add interesting new visual effects when the mesh is sliced! ⓦ

How game writers manage your mind

As writers guide you through a game's plot points, they've begun to anticipate where your head's at to avoid boredom and confusion. Here's how they do it
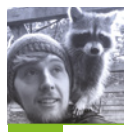
AUTHOR
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s there anything more tiresome than having something you already understand explained to you? In media, nobody likes characters who monologue their way through extensive flashbacks to events you watched a few episodes ago. "I already know this!" you silently scream. "Release me!"

But I'd say that when games do this it's especially annoying, since the player's role is as the master of pace. Players set the tempo in most games, by choosing difficulty in *The Last of Us*, choosing the song in *Beat Saber*, and choosing whether to blast through *Fallout* rabidly or take the time to wander every dusty road. So as soon as the game limits the player to the dialogue option "Who are you?" with a character they already know, it has failed. The player, trained to control, is suddenly confronted with an unskippable explanation of something they already know, and things can get heated. This is because the game has incorrectly anticipated the player's knowledge, in this case by underestimating it.

BALANCING ACT

The opposite can also happen. The game can overestimate the player's knowledge and throw them some information they can't yet understand. They might be told to "Deliver this letter to the Guildleve", but if they haven't yet been introduced to a 'Guildleve', they're again frustrated: "What the hell is a Guildleve?!". The player's role as master of pace requires them to know how to move the game forward, and failing to give them enough information is just as bad as doling it out when unnecessary.

Games of all stripes, then, need to model the player's knowledge. This means that the game's designer needs to be aware of roughly what the player knows about controlling their character, the game world, and all sorts of other things. This lets us ensure balance is always maintained, that the player is neither infantilised nor befuddled.

Although this is a problem across most game design disciplines, it's a particularly hard one for writers and narrative designers since our work usually encapsulates the most convoluted, nuanced knowledge found in a game: characters, worlds, histories, and plots. There are, broadly speaking, three ways of tackling this problem. Most games use a mix of these approaches for the multiple types of knowledge within, but tend to favour one core approach.

▾ **For a deeper dive into the state tracking approach, check out Jon Ingold's GDC talk** *Narrative Sorcery*.
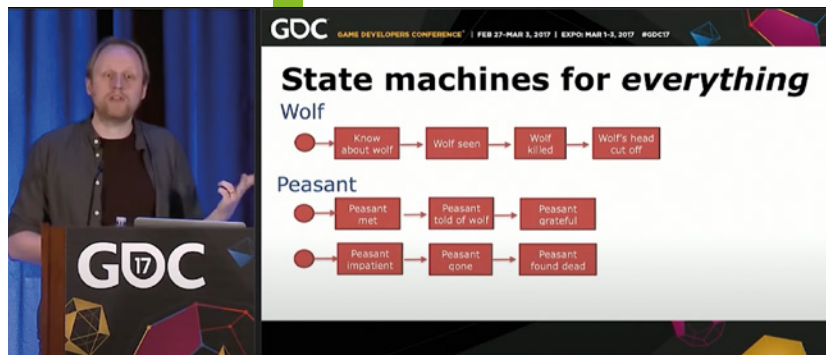
The simplest way for your game to correctly model what the player knows is for it to be linear. In a linear model game, the order in which game content occurs is predetermined, and no game content can be experienced without having completed, and therefore presumably understood, the previous piece of content. The classic example of this is the Campaign Mode of games such as *Uncharted* or *Halo*. In these games, there is only one possible order in which a new player can make their way through its various environments, cutscenes, and encounters. When the player 'reunites' with their companion character in act two, the writer *knows* the relationship was established in act one, and needs no reintroduction – if there was one, it'd be weird. It is the storyteller's job to simply smooth the daisy chain of events until the player's knowledge is always where the game needs it to be.

> **"Games of all stripes need to model the player's knowledge"**

STATE TRACKING

This isn't always so easy, however. Sometimes, as in *Divinity: Original Sin 2*, the player can ignore the companion character in act one, leaving them on the beach without so much as a glance. Writing the 'reunion' scene in act two now becomes much harder. If I were to write a 'one size fits all' encounter, it would feel unspecific, likely a little cold for players who are best buds with the companion, and overwrought for those who've not paid them any mind. Bear in mind, there are many shades of familiarity between those points, too!

So instead, we model the player's knowledge using state tracking. To do this we plant little flags in the computer's memory whenever the player receives new information, such as meeting a character, learning a secret, or being given a quest. That way, we can make the game's story divergent. The script for our reunion scene might begin with a simple check: has the player met this character? If not, play the 'introduction' version of the scene. If so, begin the standard version wherein the character explains that they have a child who's been missing for years, and they disappeared to chase a rumour about them. We could perhaps have added another check to that second outcome: has the player already learned this character's backstory? If so, modify

the scene with a warmer greeting, and skip the 'reveal' about the missing child. State tracking allows us to always deliver the appropriate content to the player.

Some games solve this problem by putting the player fully in charge. In the above examples, there is an order to events; the player will complete act one, then move to act two, and so on. But this doesn't have to be the case. *Telling Lies*, for example, simply presents all of its story as video snippets in a keyword-searchable database. Searching at random, the player is entirely likely to discover information they either already know or lack the context for. But in *Telling Lies* this isn't the game's fault, and isn't frustrating, because responsibility for the delivery of information itself is shifted onto the player. If the player has entered a search term that's led them to old information, that's on them: they have to be more discerning. Alternately, if the player stumbles across something they lack context for, this is no longer a barrier to progress. In this model, information they don't yet understand is an opportunity to move the game forwards, an avenue of inquiry for yet more searches.

So, next time you start noodling around with a game idea, ask yourself: how will I model the player's knowledge? Deciding on an approach early can help avoid later setbacks, and trust me, you don't want to watch your game completely fail to engage its first playtesters. ⓦ
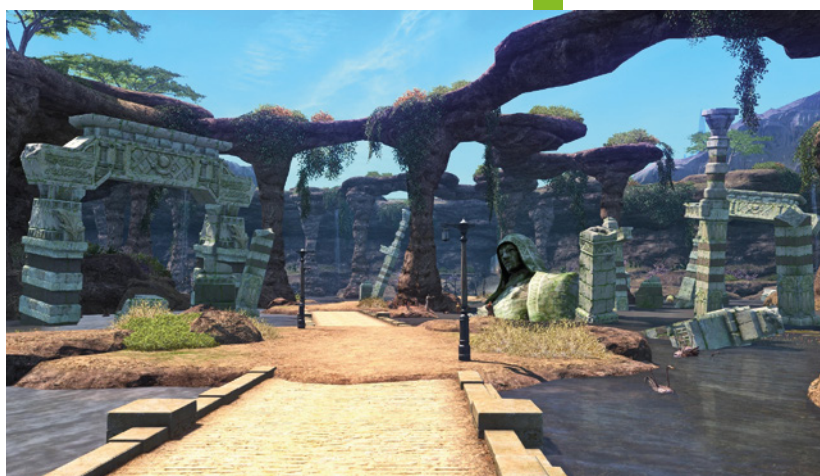
SCHRÖDINGER'S DRAGON

It's important to note that not all games which use linear knowledge modelling are what we'd classically call 'linear' games. MMOs like *Elder Scrolls Online* and open-world games like *Far Cry* generally employ the linear model described here. Their main quests cannot be done out of order, parallel side quests never rely on knowledge from other questlines, and quest-related places or characters are either absent or inaccessible until called on by a quest. Isn't it conspicuous how the special Golden Dragon enemy can't be encountered before the Archmage tasks me to kill it for him? That's linear, baby!

> ⌄ This *Final Fantasy XIV* swamp isn't home to any Blood-eyed Buzzards… until the player's tasked with exterminating them. Strict linearity is enforced.

3D level design: the essential techniques

Whether it's for a first-person shooter or a third-person adventure, level design can make or break your game. Here's how to ensure your levels are compelling experiences

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A famous game development quote from id Software veteran Jay Wilbur is: "Level design is where the rubber hits the road". This means that it doesn't matter how cool your weapons, how stylish your graphics, or how deep your story is, if your levels fail to deliver those elements to your players in an engaging way. In effect, levels are the bridge between the content you make and the people playing your game, so it's worth ensuring each level is delivering exactly what you need it to.

To help with this, we're going to run through a wide range of tips to help in creating fun and focused levels for the sort of 3D environments you might find in first- (*Counter-Strike*) or third-person (*Zelda*) games. We're going to focus on single-player levels, because while a lot of these techniques also apply to multiplayer levels, there are enough key differences that they deserve a separate article of their own.

WHAT'S YOUR LEVEL'S GOAL?

As with most areas of game design, when starting a new level, you should start by asking 'Why?' – as in, 'Why am I making this particular level?' Just like scenes in a movie or book, it's not enough for levels to simply exist to pad out a game's playtime; every one of them must bring something new or unique to the game to prevent them blending together.

You might want your level to revolve around a newly introduced game mechanic or enemy type. Or maybe you want it to be predominantly puzzle- or exploration-based to provide contrast to the previous combat-heavy one. Maybe you need the level to advance the game's plot or move the player's avatar from environment A to environment B in readiness for the next section. All these objectives are valid, but note that they're 'your' goals as a developer, not the player's goal (which might be to shut down a

They may look different, but both *Super Mario 3D World* and *Titanfall 2*'s levels revolve around thoroughly exploring a new gameplay mechanic or set-piece.

reactor or kill a boss, but the action involved in doing so will serve your goal).

Once you've worked out your goal for the level, then be sure to write it down. Levels take a long time to move through every stage of the process and it's easy to lose track of your original objective as things evolve.

PLANNING YOUR SPACE

Even with a goal in mind, it can be difficult to know how to begin a brand-new level from scratch. One useful technique is to jot down a few words for each of the potential big moments and key locations in the level. By writing these on Post-it notes representing each area, you can then start to position them in a rough flow chart or map of the major locations and how they might connect to each other.

As an example, consider the Library level in the original *Halo*. The designer's goal for this level was to introduce a new enemy faction, the Flood, and to provide a horror theme to contrast the racing about in buggies from previous levels. So the Post-it notes might have sentences like:

- Build a sense of dread
- Reveal the Flood
- Fight the Flood
- Flee from the Flood
- Secure the Halo's key
- Story revelation about the Halo
- Cramped, confusing environment

We can string these together to give a flow chart 'path' of events through the level, then begin to turn that into a sequence of main locations and set-pieces. Next, we can take these major 'story beats' and sketch our initial map, beginning with exploring creepy, empty areas, our action kicking off, new enemy types gradually being introduced, our fight to the exit, and the level's story climax. Note that the final point about the environment doesn't end up on a Post-it note but is there to remind us that the connecting corridors between areas need to be cramped and the combat arenas should be disorientating. More on why, later.

BUILDING BLOCKS

While sketching a 2D map on paper is great to get you started, it's important to get into building 3D geometry as quickly as possible. Because they have no depth, 2D maps make it difficult to plan truly 3D environments (more on this later, too), but more importantly, it's impossible to visualise how a space will look until you're standing in it.

This is where you jump into whichever level editor you're going to use to build your environment. For beginners, I'd suggest using Unreal or Unity, as both offer comprehensive tools and tutorials for making 3D environments, but you could also build levels in an art tool like Blender and export them into your game, or use a specific game's built-in editing tools if you're making levels for it. ➡

PLAYER METRICS

A common technique when blocking out levels is to cover everything with textures showing a visible grid, allowing you to see your 'player metrics' in the environment. For instance, if you've decided that your player can jump 40 'units' vertically then ensure ledges are clearly 30ish units tall (I can jump up there) or 50ish units (I can't jump that high). Anything roughly around 40 units may confuse players into thinking they can jump somewhere when you intended them to use another route. These metrics apply to door sizes, buttons, handrails, steps – anything the player might interact with.
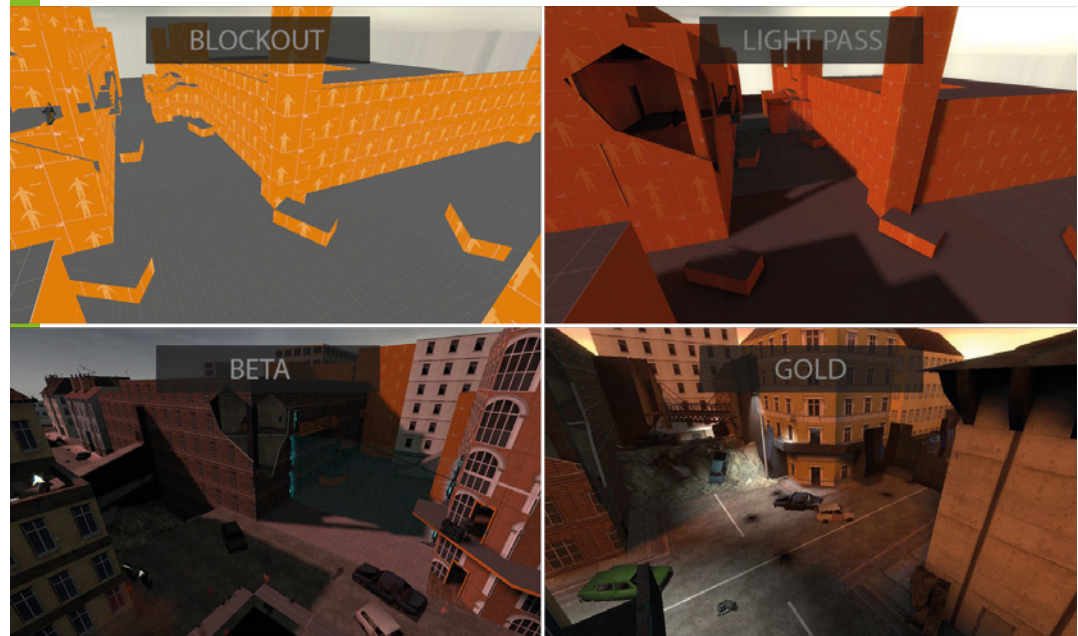
> This image of a *Half-Life 2* level kindly provided by Joshua Christiansen handily illustrates the main stages that a level goes through during development.

PACING THROUGH GEOMETRY

One architectural technique is to dictate emotion by controlling your environment's scale. Cramped spaces funnel us forward, while large areas slow us down as we stop and look around. You see this in churches, where entering through a small vestibule gives the grand chamber beyond a sense of awe as we naturally look upwards. You can also use this technique to affect pacing. For instance, both *The Last of Us* and *God of War* have sequences where level geometry compresses to drive you onwards before suddenly opening out when the designers want you to stop and breathe.
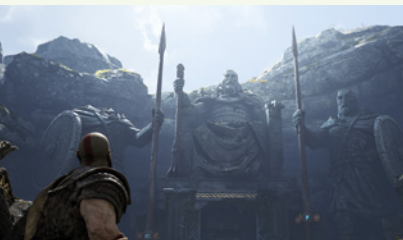
In any case, you should start by 'blocking out' your level using chunky primitive shapes (cubes, wedges, cylinders) that are snapped to a grid. Your goal at this stage is to get an idea of roughly how big each area will be and how they connect to each other. Don't worry about lighting and textures, and if you find yourself building something in detail, then you've gone too far. You're looking to understand how your level flows from area to area, and it's only now that you'll be able to see how the pieces interconnect. You might find one large space blends into another (bad for performance and for player navigation) so you'll need to move them apart. Or maybe you realise that rotating a section might make the player's first view of it much more interesting.

You can also start to consider which 'chunks' of environment you can make to be used multiple times over the level. Building some reusable sections now can save development effort later, allowing you to focus on your level's set-pieces.

EVOKE EMOTIONS

As you begin to refine your initial blockouts into more detailed geometry, you can begin to ensure that the emotions your level will evoke in the player are the right ones. This calls back to the plan for the level you made earlier: do you want to launch straight into combat or build up tension before finally springing an ambush? Will you provide a sense of wonder or just drive players to try and get out of the environment as quickly as possible? Will it be obvious there's a deadly threat, encouraging the player to move quietly, or is figuring out past events part of solving the level's puzzle? Basically, decide how you want the player to feel in each area and the level overall.

I talked about games having pillars in Wireframe 52 (**wfmag.cc/52**), but you can also apply this technique to individual levels. For example, a level set in ancient ruins might have development pillars revolving around awe (who built this?), hubris (we should let the past sleep), or greed (these treasures are mine). Thinking about these pillars means you can ensure each decision you make works towards the emotions you're aiming for, and allows you to co-ordinate the level's colour palette, brightness, sounds and music, length, pacing, challenge, and so on.

Once you start to nail these decisions down, it can be handy to gather reference material and put together a mood board. Look for images at both ends of the scale: zoomed out ones that evoke the overall feel you want, and close-up details that capture textures.

> ## "You're looking to understand how your level flows from area to area"

THINK IN 3D

In addition to making all corners strictly at 90 degrees, another first-time level designer mistake is to present the entire level on a flat plane, without making use of the fact that you're in a 3D space that can climb or drop. If you need to separate two areas, consider that a vertical shaft is basically the same as a corridor. Can an area's entrance be raised, letting the player survey this new space from a vantage? Or lowered, meaning you need to be cautious as you can't see hazards ahead? Both raised sections and death pits force players to look for routes across, while enemies on higher or lower platforms drastically changes how it feels to fight them.

3D geometry also allows you to offer players a choice of 'difficulty' in each area, with the easiest option on a flat plane and harder choices requiring more spatial awareness and skill to access. For example, the easy way over a pit might be to simply fight across a bridge, but a harder option involves clambering up and sneaking past the enemies. The second option is more dangerous as you might fall, but if there's a reward for getting across unnoticed then players can choose if they want to risk the more difficult route or not.

GUIDE THE PLAYER

A useful technique to prevent levels feeling aimless is to ensure the player knows exactly where they need to go, just not how to get there. If you show players the level's goal then they can judge progress through the level by getting closer to it, and can use it to orientate themselves (if the goal's behind them they may be going the wrong way). Maybe they see the goal through a force field but need to turn it off first, or it's across a gap they need to find a way around. Or you can make the goal huge and place it way off in the distance, with multiple levels (or even the entire game) involved in reaching it. See *Half-Life 2*, *Journey*, and *The Witness* as examples of this technique.

At the smaller scale, you can subtly guide player attention towards what's important in each area of the level without resorting to 'Go here!' HUD arrows. Elements like bright or flashing lights, bold textures, movement, and trails of pick-ups can all gently attract players. You can back up each of these guiding elements with sound effects as an extra layer of reinforcement, but you should never rely on audio as the only clue. ➡

^ Despite ostensibly similar gameplay, *Deep Rock Galactic*'s different biomes mean its environments evoke a range of emotions, from tension to unexpected wonder.

TECHNICAL LIMITATIONS

Video games are a unique blend of creative vision and technical requirements, and nowhere is this more true than in level design. You need to consider the limits of your engine and chosen hardware at both the small scale (does this area have too much 'stuff', tanking the frame rate?) and over the entire level (do I have so many unique elements that the level won't fit in memory?). Use corridors, teleporters, or other transitions to ensure only one area at a time is visible and 'active'. Of course, the challenge is in hiding this from the player…

‹ *The Witness* sets out your goal of reaching the distant mountain early and allows you to track progress as you get closer.

∧ The environments in games like *Deus Ex: Mankind Divided* provide players with enormous amounts of information about their world without explicitly spelling it out.

∨ *Yooka-Laylee*'s 'gameplay first' environments use many of the techniques we've covered to help players, such as distinctive textures to indicate platform edges, and visible goals.

CONSIDER YOUR CAMERA

Third-person games complicate level design by adding a separate camera that follows the player's avatar around, forcing you to make environments large enough for both. This can be particularly tricky when you're trying to build 'realistic' environments such as a house or an office, because the sort of grand scale that works best in third-person games conflicts with our real-world knowledge of these places. There's useful advice online for dealing with third-person cameras, but remember to factor into your gameplay pace and difficulty that the player is controlling two 'entities' at once (their avatar and the camera).

If your level's built around a central 'gimmick', such as a new weapon, technique, or enemy, then you need to ensure the player is taught how that element works properly, ensuring later levels can rely on them having fully grasped it. A good approach is the 'demonstrate - practice - prove' teaching technique discussed in Wireframe issue 44 (**wfmag.cc/44**) and used by Valve and Nintendo.

ENCOURAGE EXPLORATION

While many players will simply push through your beautiful environments in search of the next challenge, unless you want them to rush through the level (because they're up against a time limit, for example), you can encourage players to slow down by rewarding exploration. You can do this by including plenty of secret areas to find, or places that players can see but can't yet reach (as seen Metroidvania games). These can, of course, include pick-ups as rewards, but the approach taken by Bungie is to tuck away snippets of their game's lore for dedicated players to track down. Either way, I'd suggest making the first of these secret areas quite easy to find so that players realise they exist and that exploration will pay off.

Another way to encourage exploration is through 'environmental storytelling', the technique used in the *Fallout* and *BioShock* games where small details are laid out to tell a story about an event in the past. That the player must put clues together to work out what happened is the key to this technique's power

Though set in semi-realistic environments, *Control*'s levels need huge rooms and high ceilings to fit both the camera and player's avatar alongside predominantly ranged combat.

– it requires them to do some of the storytelling work rather than having everything explicitly spelled out.

PROVIDE CONTRAST

We've covered contrast in lighting and textures to attract attention, but contrast also applies to your gameplay. When you can more or less play through your whole level, it's time to take a step back and look at its pacing. Ideally you'll have contrast between areas, including in intensity (frantic/relaxed), gameplay style (combat/puzzles), and emotion (oppressive/hopeful). If area after area matches the one before then your level may become exhausting or boring.

Also consider the levels before and after this one to try and provide contrast over the course of the entire game. If the previous level ended with a boss fight, then your new one might want to give players time to recover. Or if it ended with a tough puzzle then perhaps make this level about traversal, both for variety and to give players the sense that they've earned some forward momentum.

PLAYTESTING

From the blockout phase onwards, it's important you playtest your level as often as you can by watching other people run through it. You can ask them questions afterwards, but you'll learn just as much by studying how they play it. Do your testers understand what to do? Are the environmental clues you placed helping them go the right way? Are there any difficulty spikes, or boring sections that need cutting out or spicing up? Does the level take roughly how long you thought it would for the player to complete (helping you estimate this better in the future)? Do they find any of the secrets, run out of ammo, get stuck in any gaps in the geometry, and so on?

CONCLUSION

Level design encompasses so many factors that we've really only scratched the surface here. Still, hopefully we've at least exposed some important elements that you may not have considered.

Level design can feel slow and frustrating when you're rebuilding a section to solve a problem (or worse, struggling to work out what's wrong), but in my opinion, there's nothing more rewarding in game development than seeing someone totally immersed in a level you helped build.

A final piece of advice: study levels in other games and dig into further research. Above all, practice as much as you can. By far the best technique for improving your level design skills is to build – and critically, finish – levels of all sizes, genres, and gameplay priorities. Ⓦ

> **"You can encourage players to slow down by rewarding exploration"**

FURTHER RESEARCH

While level design is a vast topic, there's plenty of advice online if you want to dig further. Game Developers Conference, Game Maker's Toolkit, and Extra Credit all have useful level design videos on YouTube, plus there are some good books on Amazon. It's also worth expanding your research to include architectural techniques and interior design, plus how Disney's 'imagineers' work to impart specific emotions through the design of their theme parks. Finally, study other games, paying particular attention to what emotion each section of a level is trying to evoke or which technical need is being served.

The importance of multiplayer testing

If you're making a multiplayer game, here's why getting it in front of playtesters early is key

AUTHOR
DAN QUILL

Dan Quill is an indie developer with a passion for old games and all things pixelly. Discover more at **danjb.com**

After years of making mods and levels for games like *Liero* and *Super Mario World*, it was only natural that my first commercial game – *Abacus* – took the form of a retro 2D shooter-platformer. I decided early on that I wanted *Abacus* to have multiplayer capabilities. This decision had widespread consequences for the codebase – every action now had to go through the server – but it also raised an important question: how could I effectively test the multiplayer gameplay?

THE LOGISTICS OF PLAYTESTING
Testing a multiplayer game solo is a lonely business, and it can only get you so far. When it comes to pushing the game to its limits, assessing the balance, and most importantly, making sure it's *fun*, getting more players involved is a must. The number of testers you'll need depends on the game, but it is worth noting that a fairly large group may be necessary to achieve consistent numbers; from my pool of 20 testers, each testing

session typically attracted only 3–6 players. Friends and family are good starting points, too, but you may also have some luck enlisting extra testers in online communities such as Reddit (see **r/playmygame** and **r/playtesters**, for example).

Discord is an excellent tool for organising sessions, due to its support for multiple channels, voice chat, and fine-grained notification settings. Dropbox is helpful for sharing builds, although if you decide to submit your game to Steam in Early Access, this is easily surpassed by Steam's support for beta branches.

Development can be a long process, so the question of when to start multiplayer testing is a tricky one. Too early, and the gameplay may be too limited to warrant any meaningful discussion; too late, and it becomes difficult to change the core mechanics. Personally, I would recommend starting the testing sessions as early as possible during development. It may not be much fun for your testers, but catching problems early ensures that you have a solid foundation to build on.

RESPONDING TO FEEDBACK
Playtesting alone is useful, but the real value of these sessions lies in player feedback; players will often have their own ideas or perspectives which fall outside the developer's vision (admittedly, that is sometimes tunnel vision).

When I hosted the first playtesting sessions for *Abacus*, feedback was mostly focused on major frustrations and game-breaking bugs. This can be extremely disheartening for a developer, but it's important to remember that this is the whole point of testing – to identify the areas that most need improvement. Even sessions that feel
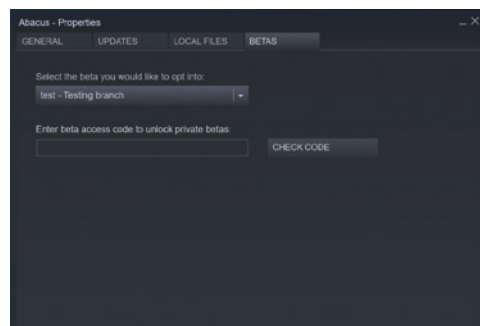
> Steam beta branches are an easy way to share builds.

disastrous can still be extremely valuable: log files can help to pinpoint the cause of any crashes, and feedback can inform development priorities. Over time, frustrations lessen, and the game becomes slicker. The difference between a clunky prototype and a polished end-product is smaller than you might think.

In the later stages of development, expect a shift in emphasis from "Please fix this glaring bug" to "Hey, wouldn't it be cool if...?" This is often the most exciting part of development, for developer and tester alike, because it signifies that the game's potential is starting to become apparent, and possibilities abound.

It's important to keep an open mind while listening to such feedback. Often, I've found myself resistant to an idea at first, but after further consideration, I realise it's exactly what the game needs. It's equally important, however, to recognise that not every suggestion can be accommodated – inevitably, some ideas will be impractical, ill-considered, or at odds with the game's core values. Mark Brown of Game Maker's Toolkit has an excellent video on this subject (**wfmag.cc/feedback**). Ultimately, it's impossible to please everyone, but to me, the most important question is always: *Is it fun?*

It's important to ask the right questions. Your testers' time is valuable, and they don't want to answer a long survey every time they play your game. But perhaps more importantly, asking too many questions muddies the focus of the responses. Limiting yourself to just two or three questions – and keeping them fairly broad –

ensures that the most significant points will be conveyed. For example, "If you could change one thing, what would it be?" or "What was the most frustrating moment?"

Your own time is obviously valuable, too, which is why it's important to carefully prioritise changes. It's easy to get distracted by refactoring tasks that have no bearing on the gameplay. While refactoring is important sometimes, it can also become a form of procrastination. Creating a rough schedule, listing key features, and planned deadlines, can help to keep development on track.

Ultimately, *Abacus* wouldn't be the game it is today without the help of my testers and their feedback. Inviting a group of players to test your game costs nothing, and the benefits cannot be overstated. While multiplayer playtesting can initially be a gruelling, humbling experience, it can also provide an invaluable insight into the minds of players, help to identify bugs and imbalances, and prompt creative ideas and suggestions. ⓦ

> **"To me, the most important question is always: *Is it fun?*"**
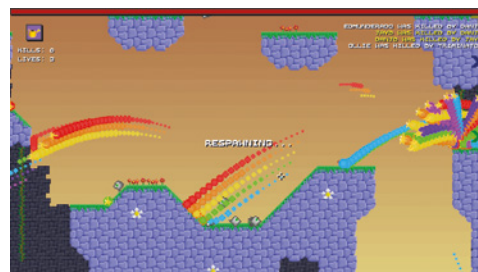
Clumsy testing

Secure, reliable, and efficient networking is a notoriously hard problem in game development, and, while many game engines provide multiplayer support out of the box, with my homemade engine, I had no such luxury. Fortunately, I came across clumsy (**wfmag.cc/clumsy**), an excellent tool that allows different network conditions to be simulated locally, including lag, packet loss, and out-of-order packets. I found this to be invaluable in testing the low-level networking functionality, and I would recommend it to anyone who finds themselves in the same situation. (Or better yet, find a library that does the hard work for you, to save reinventing the wheel!)

⌃ Every game's got to start somewhere: *Minecraft* is the best-selling video game of all time, but it started as a humble alpha build.

‹ Losing at your own game is surprisingly fun.

Source Code

Travel back in time with Braid

Code a time-reversal mechanic straight out of the 2008 indie hit

AUTHOR
MARK VANSTONE

How many times have you played a game and wish you'd done the last move differently? In 2008, *Braid* answered thanks to designer Jonathan Blow's ingenious time-reversal mechanic. If you jumped at the wrong time and fell down a hole, you could rewind time and try again.

Braid's graphics were created by artist David Hellman, who's generously made the artwork available for download from his website at **wfmag.cc/hellman** – we've used these to recreate the *Braid* time mechanic with Pygame Zero. There's also a Game Developers Conference video where Jonathan Blow describes how he coded the time reversal part of the game (see **wfmag.cc/braid-blow**), so we have a good idea of how to approach this challenge. We'll just make a small section of the game here, but it could easily be expanded using materials provided by the original creators.

Before we get to the reversing time bit, we'll need to create a basic platformer game screen. *Braid* has a parallax scrolling background with organic-looking


In *Braid*, Tim solves puzzles and collects jigsaw pieces to save a princess – though there's more to the plot than first appears.

foreground elements. We can't really make the game environment out of separate blocks, as we might in other retro platformers, so we'll just have one large image for the background and one for the 'platforms' in front, and this will form the environment which protagonist Tim runs around in. We also need another invisible image for collision detection, to test where Tim's moving and whether his path is blocked. On our collision image, white pixels can be moved in, black ones are the platforms, and the blue area represents a rope ladder that Tim can climb.

We'll move Tim left and right with the arrow keys. This scrolls the environment along with the background moving half the speed of the foreground to create a parallax effect. There are several frames of animation, both left-facing and right-facing, for Tim running, so we cycle round those while the arrow keys are pressed. We need to check if Tim's standing on a platform, so we check the pixel under his feet on the collision image, and if it's not black, we apply some gravity to him. There's a bit of a fiddle on the gravity to enable Tim to run up inclines. If we move Tim up a pixel before we apply gravity, then that will allow for shallow slopes during movement. We'll also stop Tim from running through walls by checking the direction he's moving in for collision too. We can get Tim to jump with the **SPACE** bar by activating a jumping countdown, with Tim moving upwards as the counter counts to zero, before the gravity calculation kicks in again.

Now we can deal with the time-shifting element. To make the game run backwards, we'll make a list of all the things that are changing on the screen each frame. In this case, there are only a few movable elements, but in the original
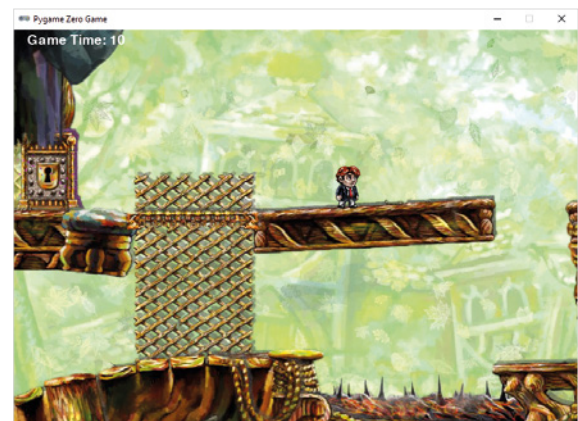
Our homage to the classic *Braid* game. Press 'backspace' to activate the time rewind mechanic.

game, there were many things that needed to be remembered, so it would've started to take up quite a bit of memory. All we need to save in our version is the position, direction, and frame number associated with Tim, and the position of the background and platforms. We put all this data into a list and keep adding to it. We can also put a count of how many seconds have passed (at 60 frames a second) at the top of the screen.

Pressing **BACKSPACE** switches on rewind. We now look at the last entry in our list and set Tim's attributes and the environment position to reflect that data. We then delete the last entry of the list and move the time counter back. We can actually move two spaces back in the data list and have the rewind happen twice as fast as the normal game speed. And that's about it. The original game had many more complex elements for Tim to contend with, but we'll leave you to have a go at adding them to this quirky, fascinating platform puzzler. ⓦ

Ride on time

Here's Mark's code for a time-bending rewind mechanic. To get it working on your system, you'll
first need to install Pygame Zero – full instructions can be found at **wfmag.cc/pgzero**.

```python
# Braid
import pgzrun
from pygame import image

tim = Actor('timr1',(220,400))
tim.dir = "r"
tim.frame = 1
tim.ystore = tim.xstore = tim.jumping = 0
collisionMap = image.load('images/backgroundcol.png')
levelx = backx = count = 0
gameData = []

def draw():
    screen.blit("backgroundl1", (backx, 0))
    screen.blit("backgroundl2", (levelx, -50))
    tim.draw()
    screen.draw.text("Game Time: "+str(int(count/60)), topleft = (20,
5),color=(255,255,255) , fontsize=28)

def update():
    global levelx,backx,count
    if keyboard.backspace:
        playGameData()
        tim.image = "tim"+tim.dir+str(tim.frame)
    else:
        rgbtop = collisionMap.get_at((int(tim.x - levelx),int(tim.y+30)))
        rgbbottom = collisionMap.get_at((int(tim.x - levelx),int(tim.y+50)))
        tim.ystore = tim.y
        tim.xstore = tim.x
        if keyboard.left:
            if levelx < 0 and checkMove(-2):
                levelx += 2
                backx += 1
                tim.x -= 2
                tim.y -= 1
                tim.dir = "l"
                if count%7 == 0:
                    tim.frame += 1
                    if tim.frame > 5: tim.frame = 2
        if keyboard.right:
            if levelx > -480 and checkMove(2):
                levelx -= 2
                backx -= 1
                tim.x += 2
                tim.y -= 1
                tim.dir = "r"
                if count%7 == 0:
                    tim.frame += 1
                    if tim.frame > 5: tim.frame = 2
        if keyboard.up:
            if rgbtop == (0,0,255) or rgbbottom == (0,0,255):
                tim.y -= 5
                if tim.frame < 9 : tim.frame = 9
                if count%7 == 0:
                    tim.frame += 1
                    if tim.frame > 10: tim.frame = 9
        if keyboard.down:
            if rgbtop == (0,0,255) or rgbbottom == (0,0,255):
                if tim.frame < 9 : tim.frame = 9
                if count%7 == 0:
                    tim.frame += 1
                    if tim.frame > 10: tim.frame = 9
                if rgbbottom != (0,0,0): tim.y += 1
        if tim.jumping == 0: doGravity()
        else:
            if rgbtop == (255,255,255): tim.y -= tim.jumping/3
            tim.frame = 7
            tim.jumping -= 1
        if tim.y > tim.ystore+2: tim.frame = 8
        if tim.x == tim.xstore and tim.y == tim.ystore: tim.frame = 1
        tim.image = "tim"+tim.dir+str(tim.frame)
        count += 1
        storeGameData()

def storeGameData():
    newData = [tim.x,tim.y,tim.dir,tim.frame,levelx,backx]
    gameData.append(newData)

def playGameData():
    global count,levelx,backx,gameData
    if count > 2:
        tim.x = gameData[-1][0]
        tim.y = gameData[-1][1]
        tim.dir = gameData[-1][2]
        tim.frame = gameData[-1][3]
        levelx = gameData[-1][4]
        backx = gameData[-1][5]
        for i in range(2): del gameData[-1]
        count = len(gameData)

def on_key_down(key):
    if key.name == "SPACE":
        rgb = collisionMap.get_at((int(tim.x - levelx),int(tim.y+100)))
        if rgb == (0,0,0):
            tim.frame = 6
            tim.jumping = 12

def doGravity():
    rgb = collisionMap.get_at((int(tim.x - levelx),int(tim.y+25+50)))
    if rgb[0] > 100 or rgb == (0,0,255): tim.y += 3

def checkMove(xinc):
    rgb = collisionMap.get_at((int(tim.x - levelx + xinc),int(tim.y + 50)))
    if rgb == (255,255,255) or rgb == (0,0,255): return True
    return False

pgzrun.go()
```

Online Diary

GITTIN' GUD

Trying to become a champion of the realm
in online free-to-play shooter Paladins

WRITTEN BY **AARON "HOW DID I EVEN GET HERE?" POTTER**

Look, we all needed something to play during the dark days of early lockdown. Me and friends wanted to duke it out competitively with one another without breaking the bank, you see, with another layer of complexity added on by the fact that none of us owned the same console. The question was then: what cross-play games – which are still few and far between – catered for our oddly specific need? We'd tried *Rocket League* and kept hitting the post, floated around the idea of bundling into the *Fortnite* bandwagon briefly but... oh, what's this? A free-to-play FPS that looks and plays a lot like *Overwatch* but is definitely not *Overwatch*? *Paladins* it is.

In fairness, *Paladins* ended up being a lot better than any of us initially gave it credit for. And I know this more than ever now because our group of four keep on coming back to it, well over a year on. Two of us play on PC, one of us Xbox One, while little me over here wilfully drew the short straw by opting for the Nintendo Switch version. I'm sorry, but storage space isn't quite as expendable on any of those other platforms for me. Have you seen how large a *Call of Duty: Warzone* install is these days? In any case, this rather unique cross-play setup works perfectly for us, and is a true testament to the open ecosystem *Paladins* developer Evil Mojo Games has cultivated since 2018 when it first launched.

The main game mode is Siege, an objective-based enterprise that sees two teams of five battle it out for control of a payload. Sound familiar? For all the elements it 'borrows' from Blizzard, however, it manages to pull it off well. Penned up against the edge of the map with the timer slowly counting down, trying to be the first team to rush to the centre and hold down the objective is always a thrill. It's especially the case for me, as I like to think I've found a sweet spot by playing Jenos. He's a kind of mystical wizard who's technically classed as a healer, but packs enough punch with his Star Splitter rifle that he's also handy in a skirmish.

It's reached the point where me and my team can cap and push the payload to the opposing team's side roughly 50% of the time. There's

> ⌄ **It's taken every ounce of willpower from me to not buy up all of Jenos' cool-looking custom skins.**

▲ Pushing the payload is when things get the most chaotic. Team co-ordination is a must.

never an outright decimation, which is important for an online game like this: you should be encouraged to keep coming back for more. Fortunately, *Paladins* hasn't got me so much in its Void Grip (a Jenos ability) yet that I've coughed up any cash, but having played for 30+ hours over the span of a year, I'd feel pretty comfortable to. Characters even rotate in and out of the roster on a weekly basis to try and tempt my wallet open, but few other characters have enticed me as much as Jenos. Your mistake, *Paladins*.

I'm under no illusion that *Paladins'* shooting mechanics are as tight and polished as *Overwatch*, but still, it works well enough that you want to discover how, say, Raum handles compared to Androxus. Or at least I sometimes do, anyway. And all this curiosity the game has piqued out of me precisely because me and a bunch of friends needed a game that is free and supported cross-play.

This reduced barrier to entry is responsible for my constant sways between victory and heartbreak, as every round of *Paladins* throws up several unpredictable events. In one instance, there's a snake-like figure barrelling towards me in an effort to buff me off the payload; in others, I'm huddled behind Fernando and his admittedly overpowered defence shield, trying to pop off headshots and prevent the opposing team's characters from gaining too high a killstreak. Some clashes occur so fast that I regularly forget to heal my own team as its only present

support class. I'm far too busy raising fools into the air to temporarily stun them using Void Grip, you see.

Making use of each character's skills and abilities isn't nearly as fun in modes outside of Siege, where there's far more emphasis on getting as many kills as possible. It's here where *Paladins* falls into the trap of becoming just another one of those online first-person shooters, as glossy and imaginative as its art style and character design is. No, take it from someone with at least a 50/50 success rate, Siege is where it's at. The beautiful part about this specific mode, too, is that winning the match always requires effort. You can't just win the final point when defending against an enemy push. Rather, you have to either cap the payload at the centre or push it into your rival's territory.

> **"Looks and plays a lot like *Overwatch* but is definitely not *Overwatch*"**

My continued time playing *Paladins* is proof that online competitive play is always better among friends. Were it not for them (and lockdown, admittedly), I would have never tried out this wacky hero shooter that combines elements of magic as well as munitions. It's an odd combination, for sure, but it absolutely works – and it being free-to-play means you having nothing to lose by jumping in.

Trying to become a champion of the realm is a relatively cheap endeavour, as it happens. Even if most of us are far too busy avoiding fire to ever truly claim that title. Ⓦ
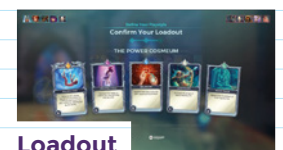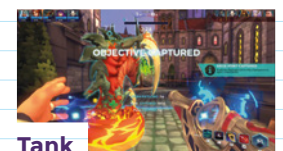
Top tips
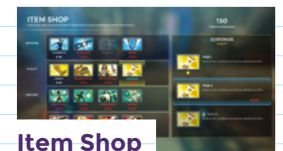
Item Shop
Don't forget to buy up temporary buffs both before and during each *Paladins* match. Kills and captures earn you credits, which can be spent to improve your chances.

Loadout
You can customise your own loadout at the beginning of each match, or choose from one of three presets distinct to each hero. Find one that suits your playstyle.

Tank
Being successful in Siege requires you to have at least one tank class on your team. In this instance, it's a giant snake called Yagorath, handy for rolling to the point quickly.

TRICKS

OF THE

TRADE-IN

THE RISE AND FALL OF THE

PRE-OWNED GAMES MARKET

For years, the video game industry railed against pre-owned sales from big-name outlets. Has it finally won the battle?

WRITTEN BY
DAVID CROOKES

here was a time, not that long ago, when Frontier Developments boss David Braben was extremely vocal about the pre-owned video game market. He didn't like it. Not at all. He'd scorn the lack of action taken by the industry to nip the high street sales of used games in the bud. He'd also point out that pre-owned games were eroding sales of new copies, and went as far as to say the flogging of used titles was keeping the prices of video games high.

As if to underline the issue, he took to Twitter in 2017 to point out that British retailer GAME had "just tried very hard to sell me pre-owned instead of new". This aspect of the pre-owned market has long been a bugbear of publishers – but during Braben's shopping, something else provoked his ire: "They even told me developers get paid on pre-owned!" he wrote. Except, of course, this isn't true: when a pre-owned game is sold, the original developer doesn't get a penny.

And that, in essence, has been the nub of this particular industry problem. "The games devs

> **"Game devs get nothing for those sales but retailers get much more"**

get nothing for those sales, but the retailers get much more, which seems unfair," Rebellion boss Jason Kingsley tells us. It's why, at one stage, Braben wanted to see the sale of second-hand games replaced by a rental market that sent money the way of the creators. That way, they would at least get a cut.

Given how strongly Braben felt about the pre-owned market, it was something of a surprise that Wireframe's more recent approach to talk about this issue, via Frontier Developments, was kindly and politely rebuffed. "Thank you so much for thinking of us," came the reply, "but we're going to pass on this occasion." Fair enough, but why?

Maybe everything that needs to be said has been said over the many years that the pre-owned market has been in existence. Or perhaps what was once a hot topic has simply gone cold. Has the video game industry moved on and adopted new strategies, to the point where pre-owned is just a sideline niggle? Did the publishers and developers finally win after trying to gain the upper hand for so many years? ➜

∧ **Gamestation was once heaven for retro gamers, thanks to its large number of pre-owned titles.**

LOCKING THE MARKET

When gamers snapped up a copy of *Tiger Woods PGA Tour 2011* in 2010, many were a little, shall we say, teed off. EA Sports required them to have an Online Pass to unlock the multiplayer modes, and while that was bundled with all new copies of the game, those who purchased a pre-owned copy had to pay £10 (albeit after a seven-day trial) for a new pass. These online passes were a controversial weapon in the battle against pre-owned games, used for titles such as *Mass Effect 2* and *Dragon Age: Origins*. They were also adopted by other publishers including Ubisoft, which introduced the Uplay Passport. The schemes ended up being ditched in 2013 following ongoing criticism.

∨ **CEX's entire business is built on the purchase and sale of used media and technology, whether on the high street or online.**

One thing's for sure – the pre-owned market isn't the same as it once was, certainly in terms of its high street presence. Around 2010, it appeared that every entertainment retailer wanted a slice of this particular pie, with many large chains – including some that raised a few eyebrows – offering customers a chance to trade-in and buy used games. That's not the case anymore.

DECLINING IMPACT
Back then, in the UK, Argos, HMV, and even supermarkets such as Asda and Tesco were exchanging games for gift vouchers or cash while offering cheaper second-hand alternatives to the brand new games they sat alongside. Many who entered the market at the time, however, have long since left, with some schemes barely lasting two years. Not that the practice has ended. Visit GAME, CEX, or GameStop, or simply browse online at the likes of musicMagpie and Chillout Games, and you'll see that trade-in schemes and the opportunity to buy and sell used games is still very much a thing.

The practice has become part and parcel of gaming to a large degree, despite past warnings from the industry that buying pre-owned games means less money for developers to spend on innovative, risk-taking ideas.

Online retailer musicMagpie is doing well, seeing a rise in profit after floating on the London

Stock Exchange last year. "For musicMagpie, there hasn't been a reduction in the amount of games we buy or sell, and sales continue to be buoyant in the second-hand market, due to the appealing price point and the ability for people to sell the games back on," says musicMagpie's chief marketing officer, Liam Howley.
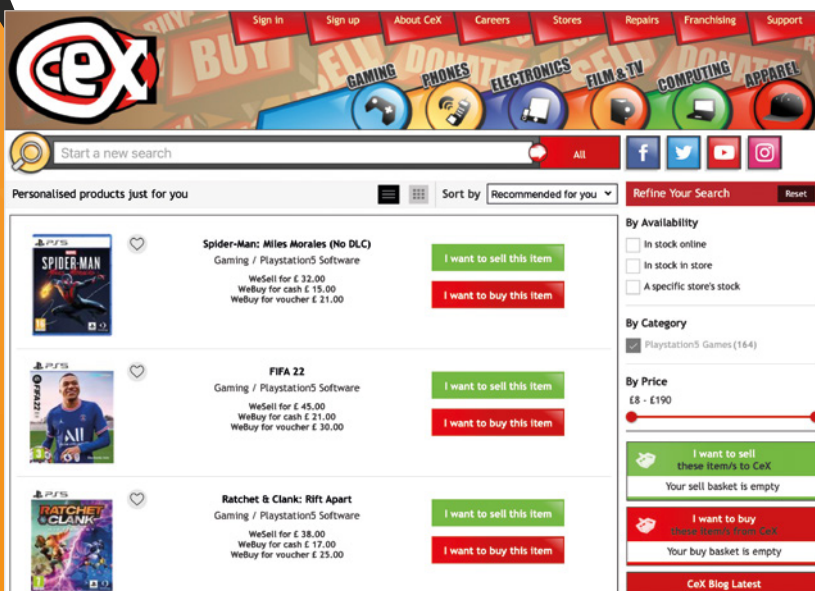
Yet the value of the overall pre-owned market appears to have dipped. In 2013, sales of pre-owned games were high, having reportedly grown faster than new titles over the Christmas period, rising by 4.9%, according to data specialist Kantar Worldpanel at the time. The value of the pre-owned market in the UK was put at more than £79 million. It then began to rise even further – for a while, anyway.

"Kantar reported that pre-owned software was worth £123 million in 2015, but by 2018 this had dropped by more than 30%," says Dr Richard Wilson, CEO of the video game trade association, TIGA. "Kantar estimates the sale of pre-owned games was worth £67.9 million in 2019 and, in 2020, consumers spent £43 million on pre-owned gaming software – this was a 22.8% year-over-year decline according to Statista."
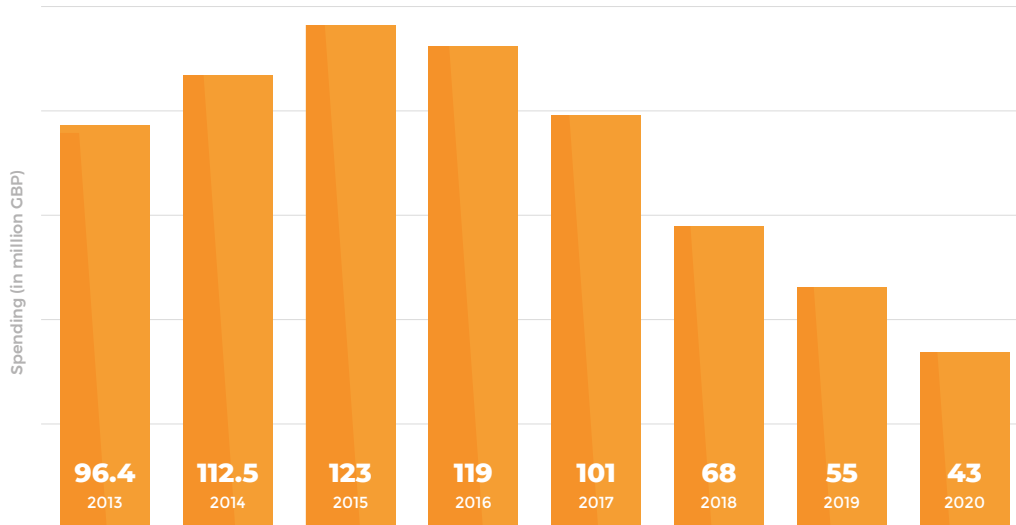
Reports from some individual retailers appear to back such figures. In 2019, for example, GameStop reported its fourth quarter and fiscal results for the previous year, with Rob Lloyd, its then chief operating officer and chief financial officer, saying pre-owned sales had declined 21.3% (far more than the 8% decline in new software sales).

He said the drop was "reflecting declines in hardware and software", adding, "as we think about 2019 and beyond, we recognise the challenges facing our pre-owned video game business and are prepared to address them as we continue to evolve our business moving forward."

As for why there's been such a dip – well, you can probably guess.

Spending (in million GBP)

96.4	112.5	123	119	101	68	55	43
2013	2014	2015	2016	2017	2018	2019	2020

⌃ Consumer spending on pre-owned video games in the UK is following a stark pattern, as these figures collated by Statista clearly show.

DIGITAL GROWTH

"It's largely due to gamers increasingly switching to digital gaming downloads as opposed to buying physical copies," says Wilson. "The closure of gaming stores due to lockdowns has probably also contributed to the decline in the purchase of pre-owned video games."

The move towards digital has been in motion for a long time, and it was no surprise to see Sony and Microsoft offering digital-only versions of their PlayStation 5 and Xbox Series consoles in 2020. Although sales of disc-based machines make up the bulk of purchases (some 75%, according to the Interactive Software Federation of Europe's retail tracking Games Sales Data), the digital-only alternatives are still hard to find, suggesting they're very much in demand, too.

Publishers are certainly seeing growth in the digital market. In July 2020, Capcom said the digital sales ratio on games had grown from 53.3% to 80%. Meanwhile, just under 70% of sales of *FIFA 21* in the first week of sale were digital. But that's not all. Gamers have more alternatives to physical products, too, notably with Xbox Game Pass, which offers a wealth of games to download for a monthly subscription fee. Sony is understood to be in the wings with a

"Kantar estimates the sale of pre-owned games was worth £67.9 million in 2019"

rival offering that will combine its existing digital services PS Plus and PS Now. It's a further sign that digital is driving forward. "The introduction of subscription services such as Xbox Game Pass has resulted in a decrease in the purchase of pre-owned games," Wilson affirms.

In that sense, the publishers and developers bitten by the purchase of pre-owned games in the past have been able to hit back, more so because most of the titles on subscription services are legacy games – older software that retailers used to buy from distributors until lots of them realised they could make more money by buying the stock from consumers.

It allows publishers and developers to once again generate revenue from their back catalogues. "Digital sales mean that consumers are increasingly likely to buy legacy titles as downloads, as opposed to buying them second-hand in stores," Wilson says. "Many companies such as Nintendo have also acknowledged the high demand for vintage video games, which has allowed classic games to be played on the Switch, for example."

Even so, pre-owned retailers aren't giving up – and while there are still tens of millions to be made, who could blame them? For its part, musicMagpie insists the pre-owned physical ➡

market offers distinct advantages over digital. "Many gamers buy physical games due to the price point when compared to digital," Howley says. "Many gamers also like to sell their games back after they're finished with them, and they can often get a good price."

In particular, he points towards the video game collectors' market as a reason why the pre-owned sector has plenty of life left in it. "People like to buy physical games for their personal collections and create a 'curated shelf'," Howley argues. "There's a strong collector's market in gaming, particularly when it comes to special editions and so on. It's also a lot easier for people to lend out or borrow physical games."

Interestingly, musicMagpie's main trade is still concentrated around older titles (it sells games for systems going back to the PlayStation 2 and Xbox). Howley says the company isn't yet seeing a huge turnover on current-gen games, but expects "this will change as more gamers have access to those consoles and more people complete or finish with the games". If the greater number of

sales of disc-based consoles tell us anything, it's that gamers at least want the option to buy and play physical media.

EVOLVING DEVELOPMENT

Even so, the changing pre-owned market could affect how games are made in the future. For years, Braben said the pre-owned market was killing single-player experiences because gamers could whizz through campaigns, complete them, and sell their copy on. Multiplayer games give players more of a reason to keep hold of a copy and also play for longer periods, reducing the number of discs being sold on the second-hand market.

But does that mean the pre-owned market may have changed the ways games have been developed over the past 15 or so years? Yes and no, is the less-than-straight answer. On the one hand, Graeme Devine (best known for developing *The 7th Guest* and spending time at Microsoft's Ensemble Studios creating *Age of Empires III*) says the pre-owned market has never actually affected

> **"Consumers are now playing games for longer, with less need to trade in"**
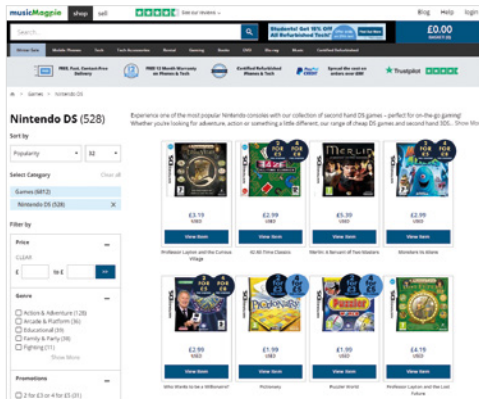
Founded in a Stockport garage in 2007, musicMagpie is now a major reseller of used games, as well as books, consoles, and movies.

the length of games. "The strategy seemed to be a move towards downloads, which I supported," he says. "But, while we did talk about the pre-owned market a lot and got pretty upset that we weren't seeing a cut from one of the largest parts of our industry, no one ever came in and asked to change the length of a game."

On the other hand, publishers and developers have looked at other ways of making money, but they may well have done this anyway, pre-owned market or not. "Of course, we had downloadable content," Devine continues. "I think people saw it as 'stuff we held back', but we were too tired at the end of a game to lop something off neatly like that."

First emerging in the late 1990s and early 2000s, DLC became a way for publishers to generate more revenue from players who have already shelled out for a game. It also persuaded a good number of second-hand purchasers to pay for the extra content, too, so they could extend their experience. "The games industry saw the value of targeted smaller add-ons," Devine suggests.

Publishers, developers, and the wider industry also battled against lost revenues caused by the pre-owned market in other ways. "The most obvious was the use of subscriptions and other in-app purchases, which means the second owners had to pay to play and not all income is lost," says Jon Hare, a veteran game designer currently working on *Sociable Soccer*. "In-game adverts can also make a developer or publisher money from a pre-owned game."

With the drive towards digital, however, will the approach to revenue generation alter yet again? "Consumers are now playing games for longer, with less need to trade-in games," Wilson says, pointing towards a whole new issue,

both for the pre-owned market and the game makers themselves. "Broadly speaking, there are fewer games available to sell and there's also less demand."

Maybe shorter, standalone single-player experiences could become more commonplace to ensure people keep investing in new games. Or maybe the industry will simply continue to look at ways of keeping those engaged with the games they've already bought.

One thing the industry will have to consider if the pre-owned market does eventually disappear is how many gamers will continue to be able to afford buying multiple games. As it stands, consumers receive credit or money when they sell a game – cash they can put towards another.

Of course, developers could simply try and make the best games they can for the audiences they serve. "We didn't really mind the pre-owned market," says Kwalee boss David Darling, thinking back to his time as CEO of Codemasters. "We mostly made realistic games based on pre-existing popular themes, concentrated on the player experience, and felt confident that enough people would want to buy them without worrying about the pre-owned market."

Exactly where things will go next is up for debate: the ongoing digital march, the rise of games as a service (GaaS), and cheap subscription models are likely to eventually quash the pre-owned market – but it may not be without consequence. Hare points out at least one silver lining in the current climate, though: "I'll say this," he offers. "It's all better than the 20-to-1 piracy rates from the old home computer days..." Ⓦ

A STRONG OUTLOOK

Kantar Worldpanel's data shows the pre-owned video game market was worth £42.6 million in 2020, down from £55.3 million the year before. By contrast, Omdia reported digital video game sales rose across console, mobile, and PC from £3.2 billion to £3.9 billion, while GfK Entertainment says boxed software rose from £603 million to £646 million. Overall, the trade body UKIE says the market for video games reached a record £7 billion. Figures for 2021 haven't yet been released at the time of writing.

The strong sales of current-gen consoles with disc drives suggests that a fair number of gamers still favour physical media.

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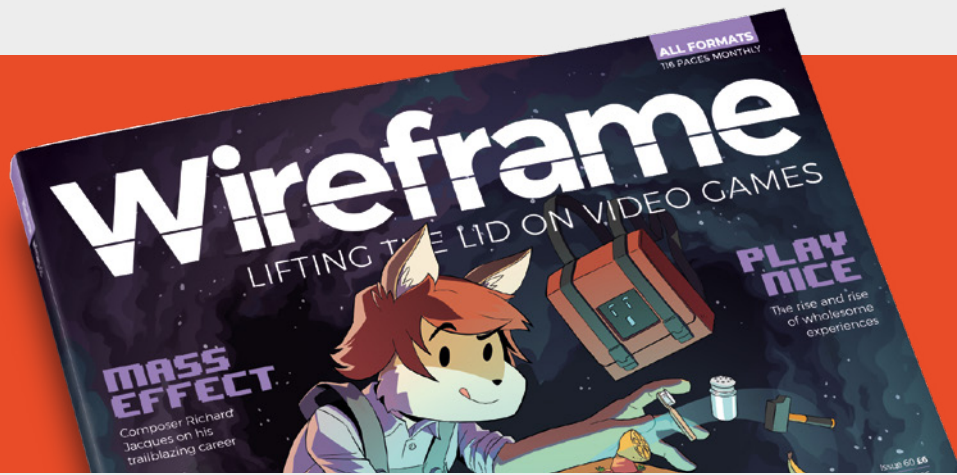**Wireframe** | **The MagPi** | **HackSpace** TECHNOLOGY IN YOUR HANDS | **CUSTOM PC**

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Interactive / Naut

How a filmmaker's using Media Molecule's Dreams to make a sci–fi adventure worthy of 2001: A Space Odyssey

From the plains of *Shadow of the Colossus* to the post-apocalyptic USA of *Death Stranding*, video games are uniquely placed to make us feel alone in vast, hostile environments. To that list we can add *Naut* – an upcoming adventure positively dripping with a lonely, foreboding atmosphere. About an astronaut fighting for survival on a windswept planet seemingly bereft of life, its most striking image is that of a tiny figure almost lost in a hazy landscape. There's a distinctly cinematic quality to *Naut* – which makes sense when you consider that Wolverhampton-based developer Vorn is first and foremost a filmmaker.

It was when Vorn first saw Media Molecule's user-friendly development platform, Dreams, that *Naut* first came about. Initially, Vorn thought he'd use its toolset to make an animated feature film, before he started thinking about making his first interactive experience instead. "I saw Dreams as a pathway to game design and to experiment with ideas," he tells us.

Naut's eerie minimalism didn't come all at once – rather, it emerged gradually as a result of paring earlier ideas away. "*Naut* came out of another idea I was working on, where you play as a survivor of a deep-cave expedition incident," Vorn explains. "You'd interact with a janky radio to communicate with your colleague who's above ground in the hopes of gaining information and navigating to the surface... long story short, I decided to go where the gameplay was taking me. I wanted to build on the greater-scale adventure experience, so I pulled a few things out, shelved the script, remodelled my character, and *Naut* was born. There's no radio. No explanation. No HUD."

GETTING STARTED
With Vorn having to learn just about every aspect of game development from scratch, making *Naut* has presented all kinds of challenges – though
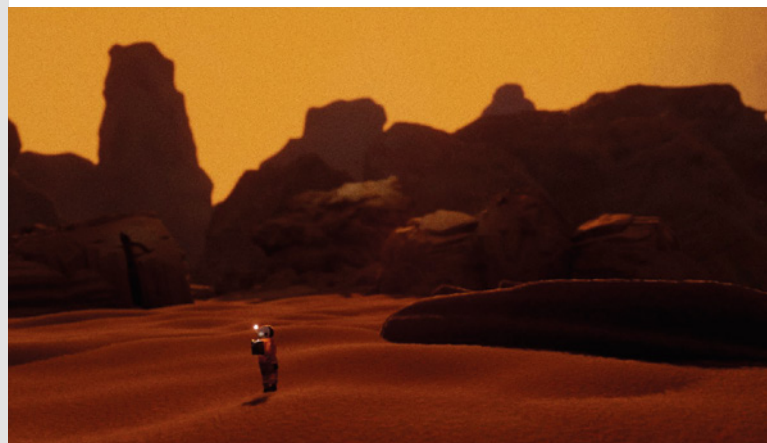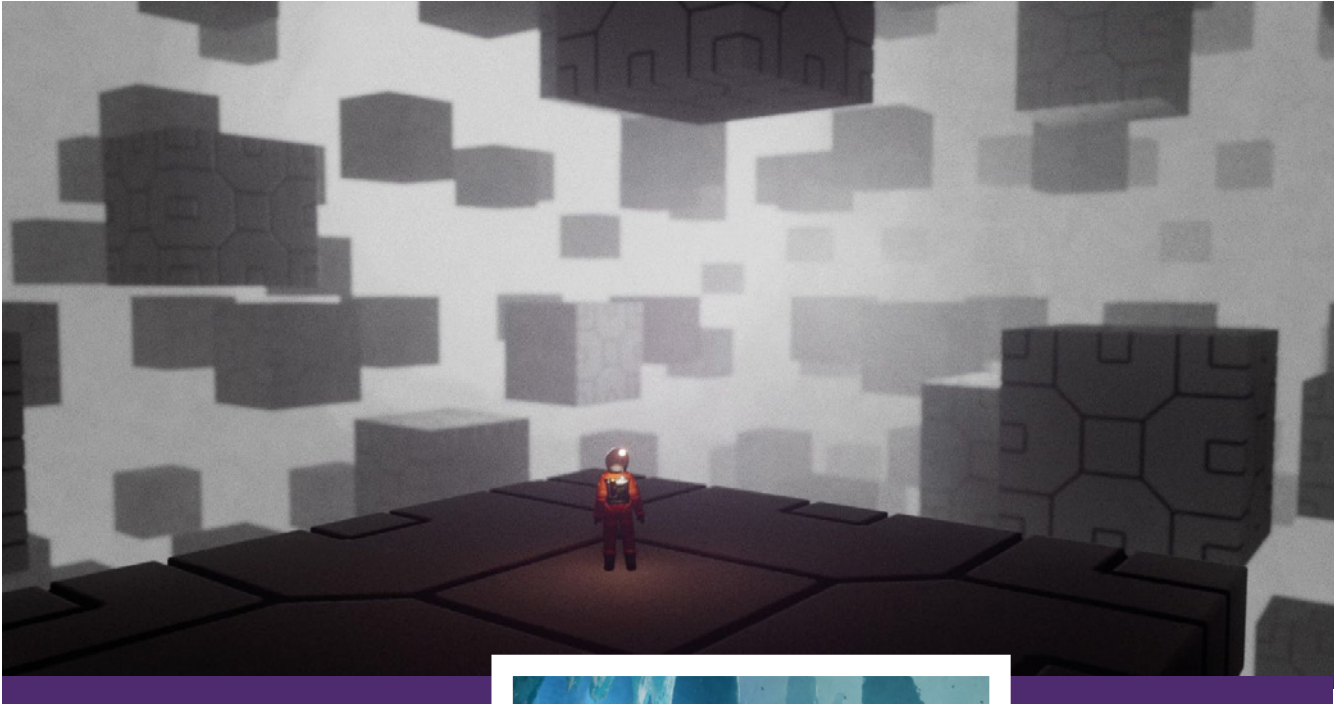
he adds that Dreams' approachable design, which has allowed him to do everything from 3D modelling to sound to game logic in one place, has helped him find his feet. "I love the editing UI and the fun, playful style it brings to the development process," he says. "It has its own DAW [digital audio workstation] that people have made albums on. It's great for animated work. Being able to do all of this on a console still blows my mind."

The downside, Vorn notes, is that Dreams is somewhat closed off: it's only currently available for PlayStation consoles, and works made with the platform can't be exported as standalone pieces of software (though work is reportedly being done behind the scenes to enable this in the future). But, Vorn adds, "that doesn't really bother me too much, because I'm just using it as a tool to make what I want while having fun and learning a lot of things which are transferable."

Given that *Naut* is driven by its air of mystery, story details are in short supply – Vorn says there'll be "some" puzzles to solve on your travels, but the game's "mainly about the exploration and journey". He still has a fair bit of work to do before the game's finished, too, ranging from tweaks to models and animation to sound

"There's feelings of isolation and a chill of despair"

design. "A few people have asked about VR, so I'm thinking about testing that at a later stage," Vorn reveals. "I really want to harness the [PlayStation 5's] DualSense technology, too, when that becomes a possibility."

What's already firmly in place, though, is *Naut*'s evocative design. It's something that's already gotten plenty of attention on Twitter and Reddit – including an unexpected "Looks cool!" tweet from The Game Awards presenter Geoff Keighley – and even a smattering of interest from game publishers. "I hope it evokes a sense of vulnerability and introspection," Vorn says of his handmade sci-fi opus. "There's feelings of isolation and a chill of despair, but also prosperity. It's ethereal with a touch of mystery. I see it as an intimate epic. I hope someone enjoys it as much as [I'm enjoying] making it." ⓦ

THE HORROR

When it comes to inspiration, Vorn cites a broad variety of filmmakers (Ridley Scott and Denis Villeneuve) and some familiar games, including *Oxenfree* ("Everything about it is just beautiful") and *Death Stranding* ("The traversal was really meditative for me, and I wanted *Naut* to have that feeling"). A more obscure title Vorn mentions, though, is *Darkwood.* "It's made by three guys from Poland, and is in my opinion one of the best horror games ever made," he says. "It's a top-down survival horror game and is just viscerally captivating. It's great at building its bleak, surreal world and the atmosphere is just incredible." Released on Early Access in 2014, *Darkwood* is now on Xbox One, PS4, and Switch, and is well worth seeking out.

Interactive

Shashingo: Learn Japanese with Photography

British game designer Ryan Pocock introduces a more relaxing, camera-ready way to learn Japanese

For most, learning a new language isn't easy, but there are a growing number of games that make the process surprisingly fun – when it comes to Japanese, for example, there's *Hiragana Pixel Party*, a bouncy infinite runner that helps you to memorise hiragana and katakana characters as you hop over obstacles.

In a similar vein, the upcoming *Shashingo* is a photography game that helps build your Japanese vocabulary (hence its subtitle, *Learn Japanese with Photography*). With your trusty camera in hand, you wander the streets of a Japanese city, taking photos of the local sights; with each click of the button, you'll get a picture of what you've

captured, complete with a caption beneath in Japanese and English. If you're really after a challenge, there's also a mode where a Japanese word will flash up on the screen and you have to take a photograph of the object it describes.

Shashingo is the work of British developer and 3D artist Ryan Pocock, who came up with an initial version of the project for a game jam – although, at that point, the educational aspect didn't yet exist. "It was a short photography game called *FOMO* [Fear Of Missing Out]," Pocock says of that initial prototype, "where the player must take photographs of everything in their in-game apartment to sell on an auction site, in order to afford tickets to go to a game development conference."

Pocock had the idea of turning the project into an educational game when he was in his last year at university, and coming up with a topic for a thesis and creative project to go with it. "The paper I wrote focused on how video games can be used for second language acquisition, and for my creative project, I decided to create a language learning game that used the [photography] mechanic. From that, *Shashingo* was born."

Built in Unreal Engine 4, *Shashingo* presents an idealised rendition of a typical Japanese metropolis. Anyone who's visited the country will recognise the cosy ramen bars with their paper

> "It truly clicked for me when I realised that the photographs could be repurposed into flash cards," says Pocock of coming up with *Shashingo*'s concept.

◁ Your pictures are saved to an album, allowing you to refer back to them as your vocabulary builds.

▽ *Sashingo*'s take on urban Japan is idealised but immediately recognisable – right down to the ornate drain covers.

lanterns hanging outside, the trees dusted with pink cherry blossom, and the strikingly ornate drain covers. "You would not believe the amount of time that is spent on Google Street View every day while working on the game," Pocock tells us. "Besides the countless references that are used to create a realistic but stylised version of Japan, I also want the game to feel authentic past face value. A great friend of mine, and the incredibly talented composer for *Shashingo*, Kenya Abe, is a native Japanese speaker and checks almost everything in the game, including the smaller details like names of shops and restaurants, to make sure that it feels truly believable."

Pocock's largely making *Shashingo* on his own, so he's had to think carefully about what to put in the game. Its environments are all urban, for example, though that setting means *Shashingo* features plenty of things that people visiting Japan are likely to see on the streets of, say, Tokyo. Says Pocock: "At the beginning of development, I asked just under 200 people who were interested in learning Japanese what kind of virtual environment they'd like to learn in, and the majority said city streets. If I wasn't creating the game primarily by myself, I'd love for the game to be larger and feature more environments, but for now, I don't see it as being feasible."

Nevertheless, the number of words that can be learned by playing *Shashingo* is pretty impressive: just about everything you see in the environment has an entry in the game's system – so in other

"You would not believe the amount of time spent on Google Street View"

words, if you take a photo of anything from a bollard to a cardboard box, *Shashingo* will show you the correct word for that object in English and Japanese. "I aim to make a large percentage of the environment as photographable words," Pocock says. "There will, of course, be minute details that won't be recognised, but generally, large structures like shops, restaurants, and the individual related objects will be taught. Currently in the plans are additional words that can be used to describe these objects, like adjectives and relevant verbs, so you can study more than just nouns."

You won't come away from *Shashingo* being able to converse in fluent Japanese, but the game should, Pocock says, enable people "to learn usable Japanese that could help them on their holiday or when talking with friends". Best of all, you'll soak up all that useful knowledge not by poring through textbooks or sitting in a classroom, but by playing an airy, distinctly soothing-looking video game. Sugoi! ⓦ

ENGINE MANAGEMENT

"*Shashingo*'s created using Unreal Engine 4 and made primarily with the Blueprints system, which have been such a pleasure to work with," Pocock explains. "They've allowed me to quickly iterate on different gameplay systems and create something shippable with minimal effort. However, there are parts of the game that had to be created in C++. This was mostly to ensure that the photographs could be compressed and saved properly within the save data."

As for the game's object recognition system, it's simple yet effective: "It identifies the object that's in the centre of the image by using a single ray cast, and then from there it gets the correct data."

Make a RichCast Competition: the results

You'll find a murder mystery, sci-fi cafés, and the Loch Ness monster among the winners of our interactive experience competition

WRITTEN BY
PHILIP OLIVER

Back in issue 56, we set budding storytellers everywhere a challenge: build the best interactive narrative experience using the RichCast platform's simple, intuitive 'no code' drag-and-drop editing tools. The results are in and, quite frankly, we've been amazed by the imagination shown by the entrants, many of whom have used the platform in unexpected and brilliant ways.

Showcased here are each of the four competition category winners and runners-up, who are each taking home a share of the £10,000 prize fund. You can check them out yourself by downloading RichCast now from **richcast.com**.

Don't worry if you didn't get your entry in this time: we'll be running another competition in the summer for you to show off your creative skills. Until then, here are the winners…

What's RichCast again?

RichCast enables users to create experiences that blur the line between literature and interactive entertainment, complete with voice and touchscreen controls, video, audio-visual effects, and AI voices that bring new worlds – and words – to life. Creating a RichCast experience requires no knowledge of programming, making it the simplest 'no code' way to create interactive experiences. To learn more and get started, head over to **richcast.com**. The app's currently available for Mac and PC, with mobile versions to follow.

2nd Best Fiction £500

I Am Alive

AUTHOR: **Zac Soliman** | GENRE: Post-Apocalyptic Adventure

SYNOPSIS: You wake up after a post-apocalyptic event with nothing except the need to survive.

JUDGES' THOUGHTS: An impressive and large project that also includes great audio and atmosphere.

1st Best Fiction £2000

The King's Word

AUTHOR: **Giuseppe Ferrante** | GENRE: Medieval RPG

SYNOPSIS: You're crowned as the lord of a realm and gain the power of the Old Words – speaking specific words to achieve certain magical effects. Use these words to deal with corrupt ministers, moral choices, monsters, and mimics.

JUDGES' THOUGHTS: *The King's Word* was a really interesting story that involved making choices on how to be a king. The project used the RichCast interface really well and we loved the decision-making and seeing how that impacts your score.

2nd Best Non-Fiction
£500
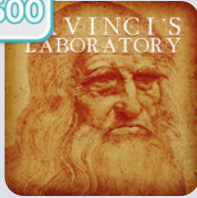
Da Vinci's Laboratory

AUTHOR: **Giuseppe Ferrante**　|　**GENRE:** Educational

SYNOPSIS: An interactive exploration of the Renaissance genius, Leonardo da Vinci.

JUDGES' THOUGHTS: We enjoyed learning more about this fascinating man and his work, and the ability to choose what to look at next and how deep we could delve into each piece is a neat touch.

1st Best Non-Fiction
£2000

Learning Gaelic With Nessie

AUTHOR: **Thomas Milligan**　|　**GENRE:** Educational

SYNOPSIS: Join Nessie in his first Gaelic language lesson. Travel around Scotland learning fun and useful phrases, as well as interesting facts about the places you visit.

JUDGES' THOUGHTS: An educational project that teaches Gaelic in a fun, engaging way.

2nd Best Use of Audio
£500

SOMA 18 – Prologue

AUTHOR: **Yonatan Tepperberg**　|　**GENRE:** Cyberpunk

SYNOPSIS: *SOMA 18* is set in a world of technological breakthroughs and magical powers. But with great power comes great responsibility.

JUDGES' THOUGHTS: An interesting story that uses audio very well to set the scene.

1st Best Use of Audio
£2000

Aunt Doyle's Treehouse

AUTHOR: **Doyle Holz**　|　**GENRE:** Mental Health

SYNOPSIS: A journey to the Land of Elves turns into a discussion about emotions.

JUDGES' THOUGHTS: A fascinating way for children to share their anxieties and emotions, and learn about the consequences of their choices. The project makes fantastic use of sound design and audio.

2nd Best Use of Visuals
£500

Stars & Lies

AUTHOR: **Zac Soliman, Summer Phelps, Jack Long, George Perry, Lou Adams, Elliot Gorny**

GENRE: Murder Mystery

SYNOPSIS: An absorbing thriller set in the Victorian era.

JUDGES' THOUGHTS: A cleverly crafted interactive story with great characters and beautifully hand-drawn artwork.

1st Best Use of Visuals
£2000

Robo Call Cafe

AUTHOR: **Torie Jones**

GENRE: Sci-fi

SYNOPSIS: Attempt to serve food in a futuristic café where the clients are robots and their demands are endless.

JUDGES' THOUGHTS: While other entrants have created stories, Torie has chosen to make a fun, quirky game in which you serve metal-based foods to robots. We loved playing this and thought it made a standout use of RichCast.

Sci-fi Symphonies:
The Work of Richard Jacques

The British composer has sound-tracked some of gaming's biggest franchises, including Guardians of the Galaxy. We look back at his trailblazing career

t's not unheard of for a composer to spend several years on one project, but the last few years have been anything but normal, least of all for Richard Jacques. Perhaps best known for his work on the likes of *James Bond 007: Blood Stone* and *Mass Effect*, the past four years have seen Jacques focusing pretty much entirely on the *Marvel's Guardians*

⌄ The score for *Marvel's Guardians of the Galaxy* totalled 9481 pages of music.

of the Galaxy universe. As projects go, it's been an all-consuming affair, but for an industry stalwart, that's nothing new.

"There have been a lot of long hours and hard work, but that's part of being a composer," he laughs. "You expect those hours. It's a personal choice, and if I've got the time, I'm going to make sure it's as good as it possibly can be."

LEAVE THE CAPSULE IF YOU DARE

Having cut his teeth in-house at Sega Europe in London in the early 1990s, composing is pretty much all Jacques has ever known. The opportunity arose entirely by chance as he was preparing to graduate from the University of Essex, and as a lifelong gamer, it was too irresistible to pass up. "Back in those days, I sort of assumed that everything was made in Japan, because a lot of things were cartridge-based," he recalls. "It was during my final year of university, when there was a job advertised at Sega for an in-house composer in London. I was in a house-share with three other students and we had a Sega Mega Drive, so there were a lot of games being played when we probably should have

"I just get really excited to work with the musicians in a great room with great staff, great engineers, great back up and great equipment."

been writing essays and stuff. I thought that sounded like something I'd be good at, or something I'd like to do, so I applied for the job."

Jacques duly set about compiling and submitting a series of demos, eventually beating over 300 applicants to the role. In just a matter of days, he went from studying music to a full-time career in video game composition. "I literally finished my music degree on the Friday, moved to London on the Saturday, and started at Sega on the Monday," he says. "I was just ready to get out into the world. I didn't want to take time off."

Jacques would go on to spend seven and a half years with Sega, working on the likes of *Shinobi X*, *Jet Set Radio*, and *Headhunter*, to name a few. It was a formative time for music in games, but even Jacques couldn't have anticipated the ways in which his work would go on to change attitudes to video game scores, or the way in which they were recorded.

SHOOTING FOR THE STARS

"For *Headhunter*, we wanted a big kind of cinematic Hollywood soundtrack experience," he recalls. "And I said, 'Well,

we need to record a live orchestra. We need to go to Abbey Road because that's where a lot of the movies are done'. It was simply a question of me pitching the idea [and] putting a budget proposal together, showing that I was experienced and I knew what I was doing."

Recorded over the course of five days in January 2001, *Headhunter* marked the first time a video game soundtrack had

> ## "I literally finished my music degree on the Friday and started at Sega on the Monday"

been recorded with A-list musicians at Abbey Road Studios, and it would go on to set the benchmark for what has now become a standard industry practice. "All the staff at Abbey Road were very curious to see what we were doing, because there had never been a game with an orchestral score recorded there," says Jacques. "I was just doing it because that's how you record an orchestra. It wasn't anything particularly out of the ordinary for me. There had been a few

orchestral scores in games, especially from Japan, but it was still in its infancy."

ACROSS THE UNIVERSE

Jacques parted ways with Sega soon after *Headhunter*'s release, turning his attention to equally ambitious new ventures. In the mid-2000s, he would form an integral part of the composing team for *Mass Effect*, working alongside fellow composers Jack Wall, Sam Hulick, and David Kates. "I remember when *Mass Effect* was first announced," says Jacques. "As a gamer myself, I thought it looked absolutely amazing. Then I got a call from Jack Wall and he said that he was working on it with Sam Hulick and that they needed more pairs of hands, just because of the sheer amount of music. So myself and David were brought on board about halfway through development."

Jacques' primary focus was to bring the cinematics towards the middle of the game, but he recalls the process as being one filled with a great sense of collaboration across the board. "Everyone really brought their A-game to that project," he states. "There was ➡

▲ Recording consisted of a mixture of group sessions and solo recordings, many of which were carried out remotely due to the pandemic.

a lot of music to write in quite a short time, as these things often are. We were all kind of swapping synth patches with each other, and different sounds, themes, and fragments."

Commitments to *James Bond 007: Blood Stone* meant that Jacques was unable to return for the series' subsequent outings, but he nevertheless remains a passionate advocate for the

franchise and the different perspectives that his successors have brought to its scores. "It's always refreshing as a gamer to hear what they're bringing to the party, whilst still making it sound like it comes from the *Mass Effect* world. They've all written some terrific music throughout the trilogy, and it's nice to be on the soundtrack with those people. We all have a good sort of camaraderie and mutual respect for one another."

THE STARS LOOK VERY DIFFERENT TODAY

Mass Effect would put Jacques in good stead when the developers of another sci-fi franchise came calling many years later. "I got a call from my agent saying that Eidos-Montréal had heard some of my stuff on *James Bond 007: Blood Stone* and *Mass Effect*. Someone had recommended me and I thought I'd be a good fit for a project, so I signed my NDA and when I was told what the project was, I was rather excited."

Having been hand-selected for his action credentials, Jacques' involvement with *Marvel's Guardians of the Galaxy* began in August 2017 when he was

▲ **A place like no other. Since scoring** *Headhunter* **at Abbey Road in 2001, Jacques has returned to work there multiple times.**

invited to submit a demo. A proof of concept followed in November 2018 and Jacques would go on to start full-time on the project from February 2019. "It's been full-on ever since," he says. "Seven days a week, 20-hour days, you name it. It's been very, very busy, but very enjoyable."

With over six hours of music written and well over five and half hours ultimately included in the game itself, it's little surprise that Jacques came aboard early in the game's development. From the very beginning, he was

the materials were still pretty early, but it was good to be on board that early because we knew this was a big game with a huge amount of music."

For a franchise with a sound already established in the Marvel Cinematic Universe, Eidos-Montréal and Marvel were emphatic in giving Jacques free rein to develop his own sound for his take on the series, and not be constricted by what had come before. "I really got a sense from the beginning that they were making this game its own experience in

GOOD VIBRATIONS

Composers for video games don't often get the same level of praise or exposure as their counterparts in other mediums, but that doesn't mean the quality of their music is inferior – far from it, Jacques argues. "Even back in 2001 when we were working on *Headhunter*, people still thought games music was bad, or poor quality, and that's not true. It wasn't true then, and it's certainly not true now. It was a tremendous experience. I've recorded many projects at Abbey Road since – it's a great place to work, and you just know you're going to get a great result. That's the whole point of it to me."

"I got a call saying Eidos Montréal had heard some of my stuff on *James Bond 007: Blood Stone*"

granted access to various works-in-progress that would serve as a creative jumping-off point. "I always ask for as much material as I can to really absorb myself in the story, the characters, and the world that the player visits," he explains. "Whether it's concept artwork, scripts, pencil sketches, animatics for the cutscenes, knowing that they were all going to change, but at least we had something to get started with. Some of

its own universe," he says. "I know the sound of the MCU and I know some of the composers who've worked on it, but it was just a great opportunity to create brand new original themes for the game. There are no themes from any other parts of the MCU or any other *Guardians* experiences."

While fan expectations may loom large on video game adaptations, Jacques never found them to be intimidating. ➡

▲ Since opening in 1932, Abbey Road's Studio Two has been home to landmark recordings by the likes of The Beatles and Pink Floyd.

MUSICAL EFFECT

Over Jacques' lengthy career so far, there's one piece of music that's often singled out for praise by *Mass Effect* fans. "There's one particular cinematic sequence where you're travelling to The Citadel for the first time on the Normandy," he tells us. "You can just see the clouds and something uncloaking in the distance. Then the clouds clear and you see The Citadel in this huge reveal… A lot of the fans have written to me about that: 'I remember seeing The Citadel for the first time in this epic reveal'. That's very humbling. It's really nice to get those kinds of messages."

"If there is any pressure, it comes from me," he laughs. "I certainly didn't have any pressure on this project. Obviously, you're not going to stray out of the mould too much. You're not going to set a country and western score to a James Bond game, or a jazz score to a Marvel

"You're not going to set a country and western score to a Bond game"

project. This is something that I wanted to be faithful and respectful to, as a composer and as a fan."

With the writing process already well underway, things took a turn for the project in March 2020 when a pandemic-induced lockdown forced the team to completely rethink a tried and tested recording process. "I kind of naively thought when the pandemic hit, 'Oh, we're going to get loads more time and everything. How are we going to do this?' And I think we got an extra six weeks."

Recording proved to be a logistical challenge, with an eleven-day session at Abbey Road requiring rescheduling. It was February 2021 before recording began in earnest, with a series of remote sessions taking place to capture some of the string sections, often with players working and recording individually, rather than part of a full orchestra.

"I had to basically find out which musicians were available and, luckily, that was everyone because there were no concerts, and no live performances or shows going on," Jacques recalls. "We knew we were going to layer it and edit it together so that it would sound like it was just a string section at Abbey Road, but because of the pandemic, we'd been forced to do it in a slightly unconventional way. I was keen to get the sound as epic

as possible because that's the whole point of what we were scoring."

When orchestral sessions commenced at Abbey Road in June 2021, Jacques had established a process that would enable him to blend the results of the remote recordings with a more conventional orchestral session, piecing the recordings together like a jigsaw. "I don't think anyone would know the difference, and that was just a result of the pandemic with social distancing and lockdowns," he states. "I think we've managed to pull it off, and I'm really happy with how it sounds."

Even under the circumstances dictated by the pandemic, for Jacques, being able to record with an orchestra at a studio like Abbey Road remains as gratifying now as it was over 20 years ago. "What's happened since 2001 has been fascinating for me, because it sort of opened up the doors in the games industry," he says. "Many of my friends and colleagues, composers working in games, and the game publishers really sat up, took note, and a lot of people followed suit. [Recording with a live orchestra] is commonplace now, and I feel quite humbled and sort of proud that I, in some way, helped to establish that." Ⓦ

▲ *Marvel's Guardians of the Galaxy* features over five and a half hours of music.

Pocket Monstrosity

STEVE MCNEIL

Steve isn't a graphics snob, apparently.

Like pretty much everyone these days, I've just had a bout of Covid. Thankfully it wasn't too bad, but it did mean me and my kid were trapped in the house for a whole week. What does any responsible parent do in these situations? That's right. They buy a ton of LEGO™, four big cakes, and a new video game.

The game in question was *Pokémon Legends: Arceus* – an adventure guaranteed to absorb every waking, snuffly hour we gave it without threat of completion. Despite being only six, and precisely because her father isn't a proper adult, this is my daughter's fourth *Pokémon* game, following *Let's Go, Pikachu!*, *Pokémon Sword*, and the original *Pokémon Red*.

How is it? Well, not only does *Arceus* fail to improve on the graphics of those earlier Nintendo Switch titles but, despite the fact *Pokémon Red* is over 25 years old and has a monochrome palette, and despite the fact my daughter played it on a 28-inch arcade cabinet screen which made every pixel as big as her head, that much older title is still far more aesthetically satisfying.

Is this a testament to the creativity of the graphic designers of yesteryear, or the ahead-of-its-time power of the original Game Boy? No. No, it isn't. Despite The Pokémon Company – co-owned by Nintendo and Game Freak – generating over *a billion dollars* in sales in 2020, they have, for some reason, chosen to use the 2003 N64 game *Harvest Moon: A Wonderful Life* as the aspirational target for the graphics in the latest instalment of the franchise. What's more, they've approached this challenge with a zeal for copy-and-pasting assets that makes even my A-level English essays look original.

But does this actually matter? At no point during the many, many hours me and my daughter have spent with the game has she commented to me that the water effects seem a bit last-last-last-gen. She's far too busy focusing on our next quest, on the latest evolution, the newest recipe we can use to give ourselves the edge in battle on our quest to catch 'em all.

In answer to my question, though: yes, it does matter actually. I'm no graphics snob; I'll take gameplay over graphics any day of the week, but we really should hold a large developer like this to account. It's one thing for an indie developer to make aesthetic choices based on what is reasonably deliverable with a small team and budget, but it's hard to believe Game Freak made this game look so awful because of a desire to pay homage to the nostalgia surrounding the consoles of yesteryear.

Breath of the Wild and *Super Mario Odyssey* are several years old, and yet have done far more with the Switch's modest hardware. There really are no excuses. And yet, I bought it. We all did. On day one. And loved it. So it obviously doesn't matter. Except it does. But it doesn't, really. But it does. But... (repeat ad infinitum). Ⓦ
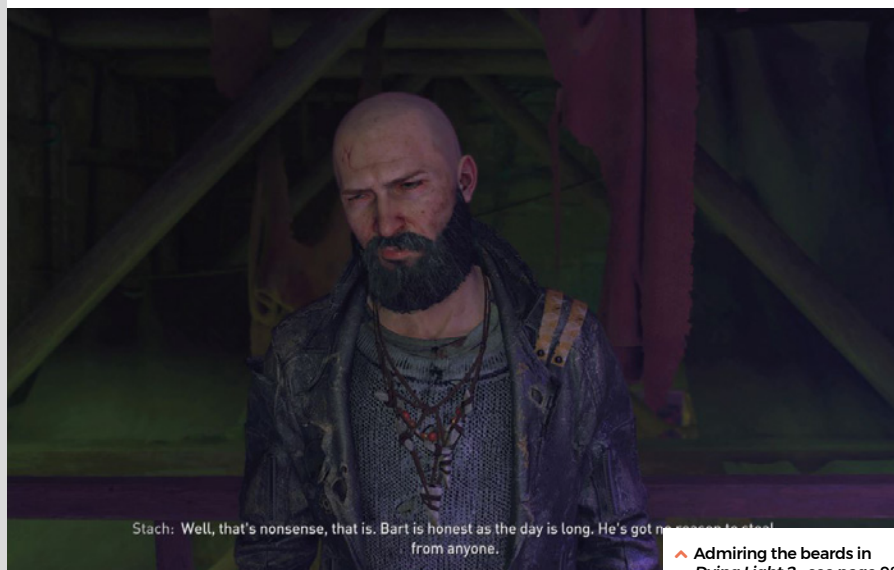

▲ *Pokémon Legends: Arceus*, featuring some of the most spectacular graphics of 2002.

Backend Contents

Reviews, retro games, and lots more besides

OUR SCORES

1–9
Trash. Unplayable; a broken mess.

10–19
A truly bad game, though not necessarily utterly broken.

20–29
Still awful, but at a push could be fun for two minutes.

30–39
Might have a redeeming feature, but otherwise very poor.

40–49
Adds in more redeeming features, but still not worth your time.

50–59
Average. Decent at best. 'Just about OK'.

60–69
Held back by glitches, bugs, or a lack of originality, but can be good fun.

70–79
A very good game, but one lacking spit and polish or uniqueness.

80–89
Brilliant. Fabulous fun. Everyone should at least try it.

90–99
Cutting edge, original, unique, and/or pushes the medium forward.

100
Never say never, eh?

Stach: Well, that's nonsense, that is. Bart is honest as the day is long. He's got no reason to steal from anyone.

⌃ Admiring the beards in *Dying Light 2* – see page 98.

PLUS

⌃ We celebrate all things Sega with YouTuber and Twitch streamer G to the Next Level on page 101.

Manual

Review

OlliOlli World

A skate to victory

The beauty of *OlliOlli World* is that it could really be about anything. It happens to be about skating, of course, but it's the purest distilled abstraction, the essential oils of skateboarding injected into a high dexterity forced-scrolling platformer. You don't have to understand or care for the subject matter to get it, just like you didn't have to care for motocross to get *Trials*, yet the results are similarly moreish. With a grasp of the basic physics of riding a wheeled plank – momentum, smooth surfaces – you begin divining perfect lines and executing controller gymnastics to squeeze in tricks. If you've got the head for it, you might never stop.

Roll7's latest embraces abstraction more than previous *OlliOlli*s, in fact, and elopes with it to a land of make-believe. Your customisable

> **Purple crystals can only be broken through if you're performing a grab as you make contact.**

Nose Grab

skater wants to reach 'Gnarvana' by impressing the skate gods across five themed areas, each containing around 15–20 tracks and side distractions. The world's a pastel haze of lazy rhythms, cartoon friends, and smiling wildlife – exactly where you'd imagine rad skaters grind out eternity once they've face-planted off the big half-pipe. It's a lush playground, only marred by the crew of skate fans who bookend each stage with dialogue you'll likely skip.

Back on the tarmac, things largely feel as they did on the Vita eight years ago, albeit extra smooth. Pop your board over gaps with a left analogue flick, add rotations to flip it in mid-air. Staying upright is easier now, as you don't have to time a press of X (cross) to land successfully, although you still should in search of 'perfect' touchdowns that boost your score. And, as ever, level-specific challenges such as collecting inflatable cats or landing tricks in particular places provide impetus to try again, along with the ever-present drive to break your personal best score. It's all good, but a known quantity.

Roll7 isn't playing it safe, however. Rather, it's easing you in gently. The stick-focused control scheme is merely a base on which to slowly stack a teetering tower of techniques, giving you time to work on one before the next arrives. So, for example, you may already be familiar with 'manuals' – landing and balancing on only

Completing challenges rewards you with cosmetic options, including some splendid costumes.
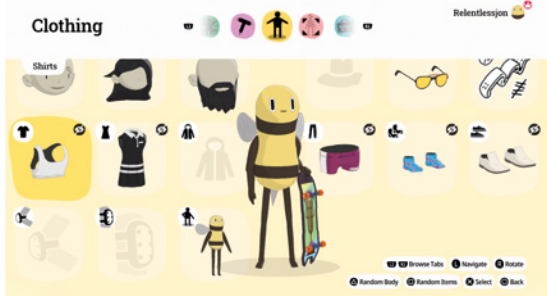
HIGHLIGHT

There's always something satisfying about a single combo completion, where once your board's wheels leave the ground, they don't touch down together until the finish line. Copious grinding and wall riding is essential, with manuals sandwiched between. Although, often, the hardest part is maintaining the speed to keep it all rolling.

the front or back wheels – from *OlliOlli 2*, and you can still do them at any time, but they aren't officially introduced via a tutorial until deep into the game. This comes to feel like a good decision, because once the full buffet of tricks is laid out, well, there's a lot to take on board.

The great plot twist in *OlliOlli World*, you see, is that all those redundant control pad buttons are silently waiting to make unreasonable demands on your fingers. They want you to string together power pushes, spins, grabs, advanced tricks, late tricks, wall rides, firecrackers (riding down stairs), and so on. And while many of these moves were present before too, they become increasingly dense in conjunction with *World*'s three-dimensionality, as optional lane changes fork you towards 'gnarly' routes, platforms tilt or elevate, and quarter pipes transition you into background or foreground then send you in the opposite direction. Late area tracks become warrens of splits and loops, and even some early stages evolve with newly unlocked paths, giving you a reason to return with a full bag of tricks to smash your previous scores.

By the third area, then, a pleasant walk in the skatepark has mutated into something scarily wide and deep, not to mention taxing. How quickly you might re-evaluate your ambitions, from acing every challenge to simply reaching the end of a course in one piece. Now you extract maximum speed from downward gradients, time the pop of the board to cross yawning chasms, or scrape along billboards hoping to spring off at the apex of your curve. Always – not compulsorily, but oh-so-temptingly – while trying to construct a score-busting combo with spins and grabs in between.

Is it too complex? Maybe. Respect to you if your brain doesn't short-circuit at times, forgetting which finger does what. As if unlearning decades of X to jump and replacing it with X to land wasn't a mammoth task alone, and muddling your grind and manual inputs an ever-present concern. Visually, too, some courses can be hard to parse at speed, at least until you've committed them to memory, as rails and platforms on parallax plains fail to differentiate themselves.

But what we're really looking at here is a high-score chaser with a skill-ceiling stretching to the heavens, which also prides itself on being definitive. On the track and also off it, *OlliOlli World* is satisfyingly whole, with endless clothing items to style your skater, online team events, a track generator that coughs up seed codes you can share with friends, and extra challenges on every stage after completion.
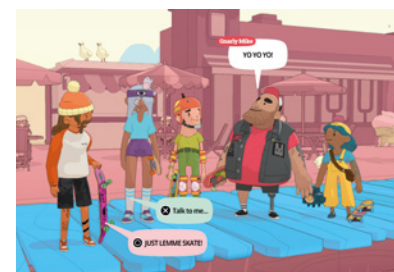
This is a game that's exactly what it claims to be – a world of *OlliOlli*. Even if you've never jumped on a board in your life, it's a fine place to dwell. ⓦ

VERDICT

A comprehensive paradise for skaters and high-score chasers alike.

84%

Review

Alfred Hitchcock – Vertigo

Press A to introspect

Info

GENRE
Interactive movie

FORMAT
PC (tested) /
XB S/X / PS4 / PS5 /
XBO / Switch

DEVELOPER
Pendulo Studios

PRICE
£24.99

RELEASE
Out now (PC), other formats TBC 2022

REVIEWED BY
Alexander Chatziioannou

VERDICT

An ambitious, original idea marred by a lack of meaningful choices and two-dimensional characters.

44%

A spin-off from what's widely regarded as the greatest movie ever made was always going to be a tall order. With *Vertigo*, Pendulo Studios attempts to dissect a timeless classic for themes and preoccupations it can repurpose into something completely new.

Chief among them is the 1958 thriller's interest in psychoanalysis, the plumbing of subconscious depths to uncover repressed memories, and how the vulnerable individuals tormented by such can be manipulated by unscrupulous acquaintances. Both protagonists suffer from a fear of heights, though Pendulo sets its story in the present day and substitutes James Stewart's cop with Ed Miller, a young novelist whose guilt leaves him bedridden after an accident in which his family plunged off a cliff. Two things of note: first, the circumstances of the tragedy replicate another accident that, decades earlier, claimed the lives of his parents and baby sister; second, nobody's ever seen the wife and daughter whose deaths he purports to have caused.

It's an intriguing setup that we dive into from various angles, primarily through therapist Julia Lomas who persuades Ed to dig into the truth about his childhood, and Sheriff Nick Reyes, whose investigations uncover a murder that may be linked to the baffling affair. The story unfolds in the familiar Telltale template, focusing on dialogue, light QTE sequences, and the search for interactive hotspots to provide illuminations that propel the narrative forward.

But the model is adopted only partially. While the game is neatly presented and some of the dialogue – especially in low-key moments – can be quite engaging, the dilemmas you're presented with feel trivial. For all their other flaws, recent interactive movies like *House of Ashes* or *Detroit: Become Human* charge your performance with stakes, a mistimed keystroke or hasty reply incurring major repercussions. Here, every dialogue choice, every QTE feels tangential to a story that marches inexorably towards its predetermined narrative beats.

Worse, characterisation remains skin-deep – quite the irony for a game so invested in the exploration of the human psyche. Ed berates his stoical therapist with the unprompted malice of a Bond villain. The local deputy's shift from agreeable country lad to loose cannon lacks motivation. And, despite the ostensible interest in the way trauma nurtures one's worst tendencies, the duplicitous blonde at the heart of the conspiracy is portrayed as an irredeemable monster throughout, her own formative experiences relegated to an afterthought.

Pendulo's meticulousness in establishing a connection to the film that goes beyond mere allusion is commendable: like the film, *Alfred Hitchcock – Vertigo* teems with echoes, recurring visual motifs, borrowed identities, and a blurring of the boundaries that separate objective reality from the projections of an unsettled mind. A shame that it fails to capture its inspiration's ambiguity and depth. ⓦ

Find the right angle for the lockpick by moving the mouse or control stick, and test it by rotating the lock using left-click or the A button. The further the lock rotates, the closer you are to the

Review

⌃ Others, like this more familiar take from *Skyrim*, *Fallout 3*, and *Fallout 4*, place the player on the outside of the mechanism.

Museum of Mechanics:
Lockpicking

You, the master of unlocking

Without fanfare, you begin in a large, dimly-lit room. What light there is comes from the panels above the exhibits, shining down on names like *Mass Effect*, *Splinter Cell*, and the all-important three-for-one: *Thief / Deus Ex / No One Lives Forever*. As a sign explains when you enter, this is the *Museum of Mechanics: Lockpicking*, an interactive historical document collecting 24 different approaches to the art of cracking locks for players to peruse.

The museum's split up into three wings, with RPGs in one, immersive sims in another, and everything else in a third. This holistic approach means that familiar takes from modern triple-A games like *Skyrim* sit alongside less well-known attempts from older games like *Hillsfar*, and down the hall from recent indie innovators like *Jenny LeClue: Detectivu*. Some put the player on the outside of the lock, some give a view of the interior, and some, like *Mass Effect* and *Mass Effect 2*, abstract the process so much it doesn't really resemble the process of picking a lock at all.

Production values are fairly low. Don't expect the *Fallout 3* minigame to look as polished here as it does in the original game. That's a small price to pay, though, for the chance to have all this information collected in one place.

"Completing it isn't really the point. Do you 'beat' a museum?"

My only real gripe with *Museum of Mechanics: Lockpicking* is the lack of contextual information about the games included. Unless I purchase and play a specific game (which an in-game sign encourages you to do if you're curious), I'll have little understanding of why a developer might have chosen a certain approach. What are the pros and cons of that abstracted approach *Mass Effect* takes, for example? If we compare this museum to a real-world historical museum, we're only getting the objects themselves without explanatory placards or tour guides. You could always play a GDC talk in the background for a rough approximation of a self-guided tour, but it would obviously be preferable to have a bit of context in the game itself.

Still, *Museum of Mechanics: Lockpicking* is an open-hearted piece of work. It will only take you about 30 minutes to complete (if that), but completing it isn't really the point. Do you 'beat' a museum? Instead, this is a resource for developers who want to see how their predecessors have tackled a common problem, and for players who are curious about the way one specific mechanic has evolved over years of communal iteration. For an industry that is notoriously bad at preserving anything from two console cycles ago, *Museum of Mechanics: Lockpicking* is a necessary historical document. ⓦ

Info

GENRE
Lockpicking sim

FORMAT
PC, Mac, Linux

DEVELOPER
Dim Bulb Games

PUBLISHER
Dim Bulb Games

PRICE
£7.19

RELEASE
Out now

REVIEWED BY
Andrew King

VERDICT

Not a game as such, but rather an invaluable and well-researched look at one particular aspect of the medium's history.

79%

Review

REVIEWED BY
Nic Reuben

Total War:
Warhammer 3

Kill a bear. Ride a bear. Worship a bear. Eat a bear?

Absolutely massive game. New feature overload. Small word count. Third series entry. Three-word sentences? Let's try it. Eight asymmetrical factions. One dying god. Sprawling strategy sandbox. Real-time battles. (*Total War*, yeah?) High fantasy prose. British gallows humour. Demons, humans, ogres. Prevent the apocalypse. Bring the apocalypse. Eat the apocalypse? Typical *Warhammer* silliness. Easy to love.

Detailed, varied playstyles. Slavic, hardy Kislev. Polar bear cavalry. Serious ranged firepower. Staunch, regal Cathay. Fantasy ancient China. Immovable defensive bulwark. Alluring, barbed Slaaneshi. Nimble glass cannon. Metal album Khorne. Armoured berserker rush. Pustulent, ponderous Nurgle. Slow but tanky. Tricksy

sorcerer Tzeentch. Serious firepower, fragile. Ravenous Ogre Kingdoms. Siege weapons? Fists. Welcome comic relief.

Unleash devastating plagues. Seed pleasure cults. Invoke winter winds. Spin celestial compasses. Kill a bear. Ride a bear. Worship a bear. Eat a bear? Summon skyscraping demons. Transform into dragons. *Spinal Tap* subtlety. Stupidly, gloriously gratifying. Balancing all this? No mean feat. Pulls it off? Close enough, anyway. Everything is overpowered. Nothing is overpowered. *Warhammer* as usual.

Co-op campaign improvements. Tailored multiplayer narratives. Borrow mate's units. New competitive mode. Welcome tabletop influence. Shockingly well optimised. Beefy PC recommended. Unit mass issues. Chariots get stuck. Some spells overtuned. Completely busted autoresolve. Patch this, please.

Tactical game-changer? Not really, no. Flank, hammer, anvil. Buff, debuff, kite. Infantry, cavalry,

▾ **Beauty, eye, beholder, etc.**

▲ The lush lands of Grand Cathay are a welcome reprieve from the chaos blasted wastelands.

ranged. Rock, paper, scissors. (Total war, yeah?) Where's the spice? Faction-specific weaknesses. Daemons lack range. Ogres? Huge targets. Human gun lines? Disrupt with monsters. Asymmetry, asymmetry, asymmetry. Improved battle AI. Artillery shell dodging!

Siege rework, finally! Major settlement sieges. Greatly improved cities. Paths, walkways, platforms. Minor settlement battles? No more walls! Unique, gorgeous maps. Barricades and towers. Enjoyable, but repetitive. Did I mention the busted autoresolve? I'm breaking my rule because, crikey, I hope it gets patched soon.

So, old formula. But clever twists. Community feedback addressed. Tiny, significant adjustments. Smoother, cleaner, faster. Not a revolution. 100 tiny tune-ups. It wasn't broken? Fixed it anyway. Absolutely gorgeous presentation. Snow-capped peaks. Tundra blasted wastelands. Chaos-corrupted features. Pristine Arctic waterfall. Khorne corruption high? Waterfall's blood now.

New diplomacy! Three Kingdoms complexity? Nope, but improved. Best military buddies? Hire their units. Borrow their armies. Sound stupidly overpowered? Quite well balanced. Requires limited resources.

"Tiny, significant adjustments. Smoother, cleaner, faster"

New campaign structure! Chaos portals everywhere. Spew hostile armies. Relentless, but manageable. Travel to hell. Resist Slaaneshi temptation. Earn Khorne's favour. Puzzle Tzeentch's maze. Inhale Nurgle's sharts. Great first time. Less so, repeated. *Total War*'s Albatross. Sandbox vs Structure. A fine effort.

Campaign craves investment. Rewards it generously. Mammoth production values. Evident passion project. A wonderful juxtaposition. Slaaneshi-level intoxicating. One major issue? Incessant campaign structure. Battles are phenomenal. So is cheesecake. Nausea still occurs. Please fix autoresolve. Otherwise? Spectacular RTS. Evokes classic Blizzard. Some problematic nails. Solution: more *Warhammer*. ⓦ
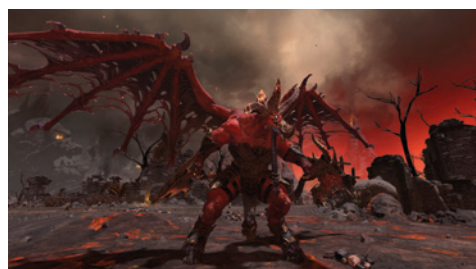
HIGHLIGHT

Despite broad adherence to *Total War* archetypes, unit and faction diversity is impressively diverse, offering an inventive balance between established lore and an ever-evolving power curve between dozens of factions.

VERDICT

A glorious clarion call to announce the beginning of the end for this stupidly ambitious strategy game trilogy.

87%

Review

Dying Light 2 Stay Human

A parkour game that's par for the course

REVIEWED BY
Andrew King

Towards the end of my time with *Dying Light 2 Stay Human*, my biceps disappeared. I tried exiting to the menu and reloading my save. Nothing. Closing and reopening the game. Nothing. Restarting my PS5. Nothing. These tricks worked when I encountered other bugs in Techland's zombie parkour game, like when an error caused dialogue to blip by unreadably fast, sans audio. But, not for my biceps. My biceps remained stubbornly invisible.

Right or wrong, this is basically what you expect from a game like *Dying Light 2*, an open-world RPG that prioritises choice to the extent that when I tried to discuss its story with another reviewer, we couldn't find any recent events in common. There are story-gated moments that all players will see. You'll always be Aiden, the orphaned nomad whose search for his sister takes him out of the wilderness and inside the walls of Villedor, an eastern European city where human factions fight for turf, and zombies huddle in the space that's left. Similarly, I doubt it's possible to complete the game without acquiring the glider, which allows you to navigate the city of Villedor's skyscrapers, or the grappling-hook, which enables you to swing from them like Spider-Man. There are characters you'll meet, too, like Lawan, a frenemy played by Rosario Dawson, and Hakon, the easy-going but mysterious survivor who helps you out early on. But your relationship with those characters will almost definitely differ from mine, as will your relationship to the factions of Villedor. Add in simulated zombie rag dolls and it's a lot for the game to track. Hence, disappearing biceps.

The biggest problem with *Dying Light 2*, though, isn't the technical glitches, which improved somewhat during the course of the review period, but the content of the narrative itself. The concept of an open-world RPG where each player will see a different story is catnip to me and many other RPG fans, but *Dying Light 2*'s story is so uninteresting, its stakes so poorly communicated, its factions so weakly drawn, their dialogue so awkwardly written and clumsily delivered, that I have a hard time imagining why I would want to play through it again to see the variations.

Dialogue takes up plenty of time in *Dying Light 2*, but most of it, along with the characters who speak it, isn't particularly memorable.

That isn't to say that *Dying Light 2* is a bad time from moment to moment. My experience with it generally ranged from mildly enjoyable to mildly unenjoyable. Basically, any time a character spoke, it dipped into the red. Clunkily written exchanges – "This is a specialised organisation. You can't just waltz in off the street and get a job here." "I'm not waltzing. I don't even dance. Nikolas, he gave me this letter." – are, unfortunately, par for the course. The times when the game asked me to explore creepy abandoned buildings – particularly a quest that involved hunting down the dog tags of the fallen members of the game's paramilitary faction in various zombie-infested areas around the map – enjoyment spiked up into the black. In *Dying Light 2*, the night is dangerous, as are the shadows of unlit buildings. A zombie bite that Aiden suffers early on in the game is not a death sentence, but it does mean that he frequently needs to get to the safe purple glow of UV lights. As a result, the moments that you spend spelunking into abandoned structures are wonderfully tense, and the puzzles that await are terrific fun to solve.

Those forays into the storytelling red are a problem, though, for a game that's so concerned with big decisions. Often during a quest, you'll be confronted with a timer as tense music begins to play and opposing choices appear on the screen. But the lack of a compelling reason to care about how any of the story plays out is seriously detrimental to the game's ambitions.

> **"Techland seems hell-bent on delaying player gratification"**

Fortunately, in between the choices, *Dying Light 2* is an open-world parkour game where you jump from rooftop to rooftop, drop down on zombies' heads, and complete time trials. The level design neatly facilitates this with monkey bars to swing from, steel beams to run along, and mattresses to plop down on from dangerous heights. This all feels decent, though the game locks most of the stuff you need to make traversal really sing behind its skill trees and story progress. Wall-running skills take a long time to unlock, and I was 17 hours in before I got the glider; 40 hours in before I nabbed the grappling-hook. *Dying Light 2* is strangely structured that way. Techland seems hell-bent on delaying player gratification as long as humanly possible. The melee-focused combat follows the opposite trajectory, beginning promisingly enough, and devolving over the course of the game. Early on, you're taught to block enemy attacks at just the right moment so that you can stagger them, then jump over them to drop-kick other opponents. This works well. As the game progresses, however, enemies gain other moves like a power attack and a shove, both of which cannot be blocked. As a result, it becomes easier just to dodge everything and abandon the rhythmic dance of the early hours.

Dying Light 2, then, is a game of mild pleasures and mild annoyances. I doubt I'll remember much of this game a year from now, good or bad. Its highs and lows are roughly as far apart as the blips on a zombie's heart monitor. ⓦ

HIGHLIGHT

Dying Light 2 has some standout quests. One, which sends the player and a squad of soldiers on a mission to climb up a skyscraper abandoned to particularly dangerous ghouls and turn on a radio signal, is a strong example of bespoke design in a sprawling world. When you finally reach the top and see the sky stretching above and the city far below, it's genuinely striking.
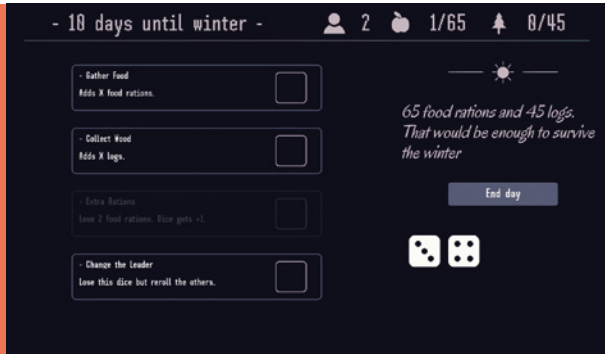
VERDICT

Dying Light 2 Stay Human **is an ambitious game that can't achieve much more than average. A jack of all trades but a true master of none.**

58%

Why not try...

Itch.io roundup

Picking out some of the platform's eye-catching titles | **REVIEWED BY** Nic Reuben

The night spoke our names

Ludipe   /   Free in browser   /   **wfmag.cc/spoke-names**

A compact but clever dice drafting/resource management game, *TNSON* is simple enough to run in your browser, but incredibly rich in decisions and atmosphere. Winter looms, and your tiny group has ten short days to gather enough wood and supplies to last out its bitter chill, and perhaps something more sinister lurks in the darkness. Roll dice each day, then spend the results on immediate gains or investments for the future. A haunting soundtrack completes this excellently fraught distillation of traditionally sprawling genres.

Bloodborne PSX

LWMedia   /   Free   /   **wfmag.cc/blood-psx**

I'm a great fan of the idea that graphical fidelity is temporary, while art direction lasts forever. As so many excellent demakes become more common, and we move further from the release of Sony's classic console, it's apparent that the same wavering, chunky, muddy fidelity can itself contribute to a timeless art style. How much of this appreciation is skewed by retro nostalgia is hard to judge. But it's hard to worry when it looks this good. An incredibly skilful and playable tribute to FromSoftware's claret-flecked RPG masterpiece. Fear the old blood; enjoy the old graphics.

Anemoiapolis

Andrew Quist / $6 / **wfmag.cc/anemo**

A portmanteau of anemoia – nostalgia for a time you've never known – and polis (city), *Anemoiapolis* is a short horror game about exploring abandoned spaces. If, like me, you've ever been down serious internet rabbit holes checking out footage of abandoned malls, this is for you. Solve puzzles in vast, impersonal constructs, accompanied by the sound of your own voice echoing through cavernous, uncannily pristine spaces. A haunting, strangely tranquil exploration of liminality. Absolutely gorgeous use of lighting, too.

Locally Sourced #1

Various / $10 / **wfmag.cc/local-source**

If you checked out and enjoyed *Indiepocalypse* from a few issues back, you'll want to check out the very first edition of Locally Sourced, a curated collection of games and a zine from Michigan-based game makers. The zine is a lovely snapshot of a burgeoning, passionate scene, complete with interviews and essays on everything from hidden mobile gems to fascinating breakdowns of decades-old Bethesda bugs. Puzzle platformers, TTRPGs, and narrative games round out the roster. Highlight: blessing anthropomorphic foodstuffs in 'The Church of Cheesus Crisp'. Ⓦ

The bonus game this month is Itch.io savagely and accurately roasting NFTs on Twitter (**wfmag.cc/itch-roast**).

▶ STREAM OF CONSCIOUSNESS

We chat to YouTuber, Twitch streamer, and Sega superfan George "G" Gracin III, better known as G to the Next Level

Was there a formative title that got you into gaming? What are your memories of it?
Though my gaming life began in the arcade and at home on an Atari 5200, one genre that really moulded my love for video gaming is the platformer. *Super Mario Bros.*, *DuckTales*, and several other NES side-scrolling platformers of that era piqued my interest, but the game that truly sparked my love for gaming was Sega's *Sonic the Hedgehog*.

If you could only play one game for the rest of time, what would it be?
I want to say *Dance Dance Revolution* because it's my favourite game of all time and it basically changed my life, but to play that for the rest of time seems like it wouldn't end well for my body, so... my one game to play till the end of time would be Sega's *Streets of Rage 2*.

I love everything about it: its incredible graphics, the feel of beating up enemies, how addictive the gameplay is, and, of course, the outstanding Yuzo Koshiro soundtrack. I've probably played *Streets of Rage 2* all the way through the most times of any game I've played.

What appeals most to you about playing games for an audience?
I have a creed about being a content creator and that's to Inspire, Educate, and Entertain. I love sharing not only knowledge about games but also filling nostalgic hearts like mine with the memories of gaming's past. One facet I love the most is reviewing or livestreaming a game that many people haven't heard of or played before. Perfect example: nearly everyone knows about Tecmo's *Ninja Gaiden* on the NES, but many don't know about the Sega's Master System version, which is completely different, so I livestreamed it and the chat was so happy and supportive. The comments I get from people thanking me for showcasing an obscure game means so much to me.

Is there a particular streaming moment or video of yours that you think is really special? If so, what is it?
On YouTube, I've made a candid, unscripted series called *3 Gaming Items I'm Proud to Own*. I pick three items in my collection that are special to me and tell the stories of how I got them. It all comes from the heart, and I love seeing the comments flow with people sharing what childhood gaming memories mean the most to them.

As for Twitch streaming, my favourite moment has to be when I was a part of Team Sega during a charity stream for Pride Month in 2021. When I hit my donation goal to help MindOut, I had a challenge where I took a pie to the face. It was all for a wonderful cause, the audience seemed to have a blast watching it happen, and to top it off, the pie was tasty! It's been clipped and will now live on forever. ⓦ

You can catch G to the Next Level on Twitch at wfmag.cc/gtwitch or on YouTube at wfmag.cc/gyoutube

> **"I have a creed about being a content creator: Inspire, Educate, Entertain"**

The Wireframe HOTLIST

The best PC games, according to Wireframe, catering for whatever your mood might be

The games for... BIG ADVENTURES

Assassin's Creed Odyssey / Ubisoft / **93%** (Issue 1)

Yakuza: Like a Dragon / Ryu Ga Gotoku Studio / **90%** (Issue 45)

Amnesia: Rebirth / Frictional Games / **87%** (Issue 46)

Death's Door / Acid Nerve / **87%** (Issue 55)

The Last Campfire / Hello Games / **86%** (Issue 47)

Resident Evil 2 / Capcom / **86%** (Issue 7)

Journey to the Savage Planet / Typhoon Studios / **84%** (Issue 33)

The Outer Worlds / Obsidian Entertainment / **84%** (Issue 28)

Eastward / Pixpil / **84%** (Issue 57)

Monster Boy and the Cursed Kingdom
/ Game Atelier / **84%** (Issue 6)

The games for... REPEATED PLAY

📷 **Hades** / Supergiant Games / **94%** (Issue 44)

They Are Billions / Numantian Games / **88%** (Issue 20)

Sekiro: Shadows Die Twice / FromSoftware / **87%** (Issue 11)

Streets of Rage 4 / DotEmu/Lizardcube/Guard Crush / **86%** (Issue 40)

Trials of Fire / Whatboy Games / **84%** (Issue 50)

Katamari Damacy REROLL / Monkeycraft / **84%** (Issue 4)

Spelunky 2 / Mossmouth / **83%** (Issue 44)

Hitman 2 / IO Interactive / **82%** (Issue 3)

Alba: A Wildlife Adventure / ustwo Games / **82%** (Issue 46)

Slay the Spire / Mega Crit Games / **81%** (Issue 45)

The games for... SOLID STORY TIMES

Disco Elysium / ZA/UM / **94%** (Issue 28)

Life is Strange: True Colors / Deck Nine / **89%** (Issue 57)

Mutazione / Die Gute Fabrik / **86%** (Issue 26)

Whispers of a Machine
/ Clifftop Games/Faravid Interactive / **85%** (Issue 14)

The Forgotten City / Modern Storyteller / **85%** (Issue 55)

📷 **Mythic Ocean** / Paralune / **84%** (Issue 36)

Sunless Skies / Failbetter Games / **83%** (Issue 7)

Arise: A Simple Story / Piccolo Studio / **82%** (Issue 31)

Assemble with Care / ustwo Games / **81%** (Issue 27)

The Walking Dead: The Final Season
/ Telltale Games/Skybound Games / **81%** (Issue 11)

The games for... FIRING UP BRAIN CELLS

Telling Lies / Sam Barlow / **92%** (Issue 24)

Kentucky Route Zero / Cardboard Computer / **90%** (Issue 33)

Slipways / Beetlewing / **90%** (Issue 53)

Total War: Warhammer 3
/ Creative Assembly/Feral Interactive / **87%** (Issue 60)

Heaven's Vault / inkle / **89%** (Issue 12)

The Pedestrian / Skookum Arts / **84%** (Issue 35)

The Legend of Bum-Bo / Edmund McMillen / **83%** (Issue 31)

A Monster's Expedition / Draknek & Friends / **82%** (Issue 47)

Total War: Three Kingdoms
/ Creative Assembly/Feral Interactive / **82%** (Issue 16)

It Takes Two / Hazelight Studios / **81%** (Issue 51)

The games for... HIGH-INTENSITY PLAY

Tetris Effect / *Monstars Inc./Resonair* / **90%** (Issue 4)

📷 **Sayonara Wild Hearts** / *Simogo* / **89%** (Issue 25)

Chivalry 2 / *Torn Banner Studios* / **88%** (Issue 54)

Hot Wheels Unleashed / *Milestone* / **86%** (Issue 56)

Star Wars: Squadrons / *EA* / **86%** (Issue 45)

OlliOlli World / *Roll7* / **84%** (Issue 60)

Devil May Cry 5 / *Capcom* / **84%** (Issue 10)

Black Bird / *Onion Games* / **84%** (Issue 3)

BPM: Bullets Per Minute / *Awe Interactive* / **83%** (Issue 45)

Resident Evil Village / *Capcom* / **82%** (Issue 52)

The games for... CURING THE INDIE ITCH

If Found... / *DREAMFEEL* / **92%** (Issue 44)

Can Androids Pray / *Natalie Clayton/Priscilla Snow/Xalavier Nelson Jr.* / **90%** (Issue 21)

Tales From Off-Peak City Vol. 1 / *Cosmo D* / **89%** (Issue 39)

📷 **Baba Is You** / *Hempuli Oy* / **88%** (Issue 10)

TOEM / *Something We Made* / **87%** (Issue 57)

Afterparty / *Night School Studio* / **86%** (Issue 33)

Witcheye / *Moon Kid* / **86%** (Issue 30)

Hypnospace Outlaw / *Tendershoot/Michael Lasch/ThatWhichIs Media* / **86%** (Issue 11)

Haunted PS1 Demo Disc / *The Haunted* / **85%** (Issue 39)

Chicory: A Colorful Tale / *Greg Lobanov* / **83%** (Issue 54)

PC Top 10
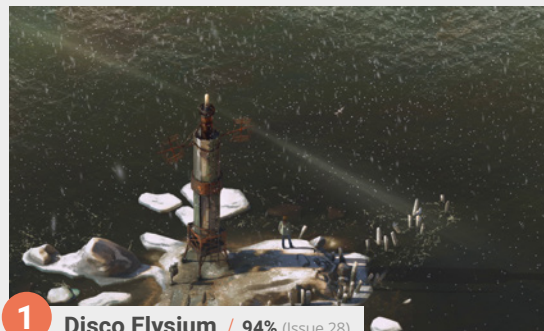
1 **Disco Elysium** / **94%** (Issue 28)

Smarter and deeper than anything else; truly an RPG in a class completely of its own.

2 **Hades** / **94%** (Issue 44)

Proving 'roguelike' isn't a dirty word, learning-and-dying is a joy from start to finish.

3 **Assassin's Creed Odyssey** / **93%** (Issue 1)

The point where Ubisoft realised over-the-top adventures were the right direction.

4 **Telling Lies** / **92%** (Issue 24)

This FMV mystery asks more of the player than most, with rewards to match.

5 **If Found** / **92%** (Issue 44)

A compelling and beautifully illustrated narrative, as moving as it is memorable.

6 **Yakuza: Like a Dragon** / **90%** (Issue 45)

A bold, brash, and joyous rebirth for the long-running gangster series.

7 **Tetris Effect** / **90%** (Issue 4)

The question is 'how do you better *Tetris*?' The answer is: like this. This is how.

8 **Kentucky Route Zero** / **90%** (Issue 33)

Abstract style meets concrete commitments in this fantastic magical realist adventure.

9 **Can Androids Pray** / **90%** (Issue 21)

A healthy dose of existential anxiety in a minimalist, bite-sized package.

10 **Slipways** / **90%** (Issue 53)

A focused puzzle game masquerading as space empire-based grand strategy.

Backwards compatible

WRITTEN BY **RYAN LAMBIE**

Cosy origins

This month's cosy games theme got me thinking about the earliest days of the form. *Stardew Valley*, *Unpacking*, and *Spiritfarer* are all modern examples of interactive cosiness, but where did it all begin? Video games have, after all, had war and conflict baked into their system almost from the start – the clue's right there in the titles of *Spacewar!* and *Space Invaders*. Even *Pong* has a less-than-cosy competitive angle.

Perhaps the cosiness at least began to set in around the year 1980, when graphics had advanced to the point where cartoon-like titles such as *Pac-Man* and *Donkey Kong* began to emerge – the former arguably being the first game expressly aimed at female gamers. Even then, those games were aggressively

difficult, with *Donkey Kong* in particular offering a less-than-relaxing level of arcade challenge. But those titles at least laid the groundwork for more gentle, wholesome experiences yet to come: Namco's *Mappy* (1983), although still an arcade game designed to empty your pockets of coins, was fluffy and conspicuously non-violent. You played a rodent security guard intent on preventing a gang of cats from stealing assorted valuables from a mansion inexplicably studded with trampolines where the staircases should have been. The tone was jolly, the ragtime theme tune was upbeat, and the closest you'd get to a grisly act of aggression was the comical sight of a cat falling flat on its back if you slammed a door in its face at precisely the right moment.

Next came designer Fukio Mitsuji's seminal *Bubble Bobble*, which is perhaps as cosy an arcade game as you could possibly hope to find. A fixed-screen platformer where players trap enemies in bubbles, burst them, and collect the assorted fruits and other items that spawn in their wake, Taito's hit actively encouraged cooperation between two players. Mitsuji even designed the game to appeal to young couples, which immediately puts it in the running for the most wholesome coin-op of the 1980s – even if it still wants to rinse you of your spare change at just about every turn.

In the realm of home computers, game designers were making cosy innovations of their own throughout the eighties. *Little Computer People*, first published by Activision in 1985, was a pioneering title that anticipated everything from Tamagotchi to *Animal Crossing*: it was a simple yet effective life sim about a tiny person's disarmingly mundane domestic existence. You simply watched as your little character plodded around their house, watching television, playing the piano, or taking a shower. You could interact with the character in a limited sense – writing letters, playing a simple game of poker – but *Little Computer People*'s main attraction lay in the playful illusion of having a real person living inside your humble micro. In an age of "Game Over" screens and high-score tables, *Little Computer People*'s lack of failure states or even an ultimate goal made it truly innovative – and in cosy terms, a true pioneer.

One for sorrow

To the increasingly impressive list of modern titles made for the Sega Mega Drive – see also *Tanglewood*, *Xeno Crisis*, and *Demons of Asteborg*, to name but three – we can now add *Affinity Sorrow*. A turn-based RPG in the vein of 16-bit era entries in the *Dragon's Quest* and *Final Fantasy* franchises, it's still being funded on Kickstarter at the time of writing, but has already careened through its £38,683 minimum goal. It sees a disparate party of warriors – including sword-wielding protagonist Nex and a 30-something werewolf named Patches – head off on a world-saving adventure that echoes those top-down quests of the early nineties. Developer Second Dimension first started working on the concept a decade ago, and in the interim, released nineties-set platformer *The Curse Of Illmoore Bay* on Steam, and managed to get another Kickstarter project – *Eyra the Crow Maiden* for the NES – funded in January 2022. And, just to underline the retro appeal of it all, Hiroki Kikuta, who composed the music for *Secret of Mana* (among other things), is also providing the tunes for *Affinity Sorrow*. There's a demo currently available, which you can try out via an emulator or a flashcart if you want to try it on an original Mega Drive, at **wfmag.cc/affinity**.

V for Vendetta

On the subject of *Xeno Crisis*, Bitmap Bureau – the developer behind that masterful top-down Mega Drive blaster – is back this spring with another slab of sprite-based action. *Final Vendetta* is a belt-scrolling brawler firmly in the vein of Capcom's *Final Fight*, right down to the protracted brawls in moving subway carriages and energy-buffing roast chickens sitting conveniently on city pavements. Unlike *Xeno Crisis*, *Final Vendetta* doesn't appear to be getting a cartridge release for the Mega Drive or other retro consoles; the silver lining, though, is that Bitmap Bureau won't necessarily be tethered to the limitations of 30-year-old hardware, so it'll be free to throw as many gigantic sprites around as it likes.

We don't know too much more about *Final Vendetta* at the time of writing, but it's definitely a game we'll be exploring in more depth in these pages before its release in May 2022.

Game Boydle

If, like seemingly everyone else on the planet, you're hopelessly addicted to the online puzzle game, *Wordle*, you may be interested to know that it's now available for the good old Game Boy. Thanks to the efforts of IT security engineer and Twitter user **@ghidraninja**, you can now play Josh Wardle's viral hit in glorious monochrome. Its creator admits that this is a rather limited version of *Wordle* – due to the limited ROM size, its system for checking whether you're entering legitimate English words has a high error rate – but still, it's functional, and is almost as absorbing as its bigger counterpart. You can download the ROM for Game Boy and Analogue Pocket at **wfmag.cc/boydle**, or you can play it online at **wfmag.cc/boydle-browser**.

Backwards compatible

WRITTEN BY **KIM JUSTICE**

Borne again

Demakes have, over the past year, gathered momentum and turned from being one of the more niche subsets of the fan project world into something that really gets the internet going, and the much-anticipated release of *Bloodborne PSX* on 31 January has brought that to something of a head, with the game being downloaded from its itch.io page well over 100,000 times in the first few hours of release. This particular demake has generated plenty of hype over the 13 months that creator Lilith Walther has been working on it thanks to videos that showed off both the quality of the work, and the faithfulness to a 32-bit aesthetic that often made people wonder if this tribute to FromSoftware's legendary modern title was actually going to be running on a PlayStation.

As it is, you download and play *Bloodborne PSX* on your PC, with no need for emulators. The attention to detail in the game's aesthetic, meanwhile, is

quite remarkable. Accurate scanlines and a slight glint on the screen make you think you're playing on a CRT. There resolution's also appropriately low, there are lots of warped textures, an option to set the game's speed to 24 or 20 frames per second, and vintage PlayStation cheats such as a Big Head Mode that will no doubt give players of a certain age a few pangs of nostalgia. It's a fan project, though, so it doesn't recreate the entirety of *Bloodborne* in 32 bits, but it does feature a good chunk of the land of Yharnam for hunters to make their way through, comprising the opening portion of the game with a few new parts added, and a secret ending to find – not to mention some epic scraps with the likes of the Cleric Beast and Father Gascoigne.

A lot of people have noted with amusement that this demake is, for

now, the only way that *Bloodborne* can be played at all on a PC, and this fact has most assuredly increased people's appetite for such an authentically 1998 experience. But with the final release being such a hit with people, interest in the world of demakes is surely going to increase dramatically, whether it's people looking at other new games that could potentially receive the same treatment, or revisiting some other popular efforts from years past. Examples? The Nintendo-irking *Super Smash Land* on Game Boy, fellow 32-bit grimeathon *The Last of Us* on PSone, and all the way back to old favourites such as the ambitious take on *Halo* for the Atari 2600. If the idea of slaughtering hefty polygonal prey takes your fancy, you can download *Bloodborne PSX* at **wfmag.cc/bbpsx**.
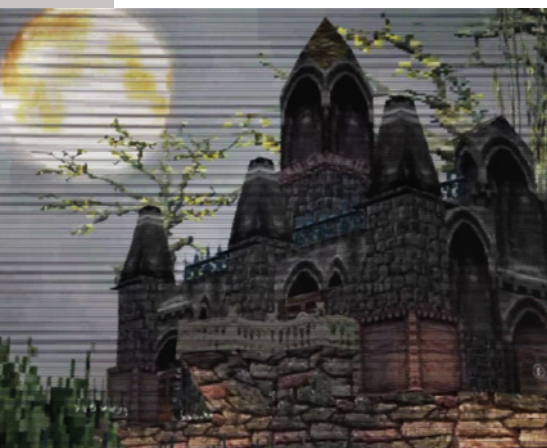
You're living all over me

The 9 February Nintendo Direct was mostly filled with good news for fans of re-releases and remakes – while it was thin on anticipated new titles, there were welcome returns for the likes of *Klonoa* and *Earthbound*, a questionably upscaled remaster of *Chrono Cross*, and a whole load of old courses for *Mario Kart 8*. The most curious title of the lot, however, was surely the announcement of *Live A Live*, a remake of a cult classic SNES RPG by Square Enix that, until now, has never seen an official release outside of Japan. The original 1994 game is an ambitious one for the time, covering seven interwoven scenarios that differ in more ways than simply characters, or time period – the scenarios often incorporate entirely new styles of gameplay. Various fan translations have been around for quite some time, but more than an official translation, this new remake looks to give the game a new graphical sheen done in the 'HD-2D' style that's

previously been seen in modern JRPGs such as *Octopath Traveler*. While some people may be less excited about this raft of news featuring old games that are already widely available for the most part, it's encouraging to see this unique story potentially reach a wider audience. *Live A Live* is currently scheduled to hit the Switch on 22 June.

Vampire night

Amiga fans have seen some pretty good homebrews lately, and now, thanks to a coder named Dante, there's a possibility that an age-old wrong is about to be righted. Dante's just released a demo of *Castlevania* for AGA Amigas as part of the annual AmiGameJam competition that covers the first level, and plays very well indeed. This work-in-progress takes its cues and graphics from the Sharp X68000 remake of the original game, meaning that it both looks and sounds quite incredible for the system – certainly an awful lot better than the *Castlevania* port the Amiga received years ago, which was a miserable experience.

Dante expects to work further on this title following completion of his current project, which just so happens to be an A500 version of *Green Beret*. Funnily enough, the homebrew port of Konami's military stab to start-fest will be the game's first appearance on the venerable Amiga, and it's also been submitted for the Game Jam alongside several other intriguing homebrew projects, such as a version of the MSX game *Knightmare* and a port of the original *Command & Conquer* for those with Vampire accelerators. Full details on the Game Jam and links to all submissions can be found at **wfmag.cc/AmiGameJam**.

Comet me, bro!

Aaron dusts off his cel-shaded arsenal
in Borderlands: The Pre-Sequel

I know most players can probably take or leave the crass sense of humour *Borderlands* so often touts, but it's hard to deny just how satisfying the core acts of shooting and looting both feel in Gearbox's trademark series. By the time of *The Pre-Sequel*'s release in 2014, this formula had been well established. That's why, when returning to this zany, space-based spin-off now on Nintendo Switch (in advance of *Tiny Tina's Wonderlands*' release later this month), gunning down endless legions of crazed psychos and scavs is still second nature. 'Pop. Pop. Pop' each of their heads go after falling victim to my fire-equipped pistol. Oh yes, it's good to be back hunting vaults.

Of course, helping to separate it from any entry that came before, *Pre-Sequel* places much more emphasis on story this time around. And while that sounds like it could be counterproductive within the confines of an already excellent shooter, hearing your character whoop and taunt in the midst of a firefight brings an added sense of personality to each mission. No longer is my vault hunter character simply a voiceless conduit comprised of two arms only useful for gun switching. Instead, my Level 11 Enforcer feels like a true part of this world, bouncing off my online companions in our effort to help the man who would become Handsome Jack fight back against a hostile interplanetary takeover.

Taking events off-world for this self-proclaimed sequel of sorts – it's sandwiched between the events of *Borderlands* and *Borderlands 2* – might mean you have some knowledge of where events lead, yet it hardly matters when there's this much variety to gun-play. There's a near-limitless number of randomised guns to take hold of in *Pre-Sequel*, each one more tactile than the last – and now with new elemental effects like ice. Delicate additions like this don't outright change what it means to mow down badass psychos, true, but when did having more ways to dispatch your enemies ever hurt anyone? Except for the aforementioned enemies, obviously.

Being set on a moon's surface rather than any planet with a reliable gravitational pull also sees *Pre-Sequel* make significant changes to the way you move around. Hopping from destination to

That's it! Get in close and smack that tork in the chops if you want to shatter it!
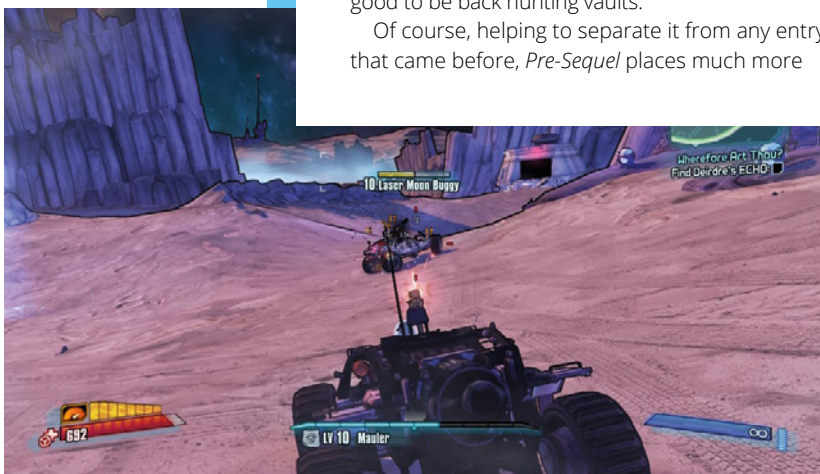
destination now feels a lot floatier by design. Now, I know plenty of people who found this change more of an annoyance rather than a cool way to indicate a distinct change of setting between games, but the truth is, I like it. Not only because it inadvertently makes every shoot-out feel like it's taking place in a John Woo movie (firing guns in slow motion? Yes please!) but also because it feeds into the *Borderlands* franchise's intrinsic sense of humour. This is my not-so-subtle way of saying that zero-G butt slamming needs to make a comeback in first-person shooters; not that it ever took off in the first place.

Pre-Sequel might successfully build upon *Borderlands 2*'s foundation through the inclusion of character voices, elemental upgrades, laser-based weaponry, and floatier battles, but if there's one area it pales in comparison, slightly, it's in the central hub area. The whole game is tinted in harsh blues, purples, and deep blacks that chime well with the thick lines of its cel-shaded comic book art style. And while it works to establish a noticeably old-school sci-fi atmosphere that wasn't there before, it does make the space-port town of Concordia a little, well, dull. Everything just looks very samey, which isn't ideal for a location you regularly return to.

True, Concordia's closely-knit mesh of tight spaces, office levels, and Mad Moxxi's bar (of course) doesn't make or break the game, but it's got nothing on *Borderlands 2*'s floating city of Sanctuary. Whereas that setting offered up visual respite against the chaotic shooting asked of

you elsewhere, I constantly found myself quickly wanting to escape *Pre-Sequel*'s hub town soon after picking up or handing in missions. In *Star Wars* terms, it's a bit like completing a bounty on Jakku, only to visit Tatooine right after – two distinct locations riffing on the same sandy vibe.

It makes sense once you realise *Pre-Sequel* doesn't actually promise you the world. In fact, you only get a single moon. In a way, it's pretty impressive that interim developer 2K Australia managed to make blasting your way through a fixed environment as fun as it is, but it all coalesces beautifully whenever you do so with up to three friends, each playing as a distinct vault hunter class. Four-player online co-op has always been the beating heart of *Borderlands*, so it's no surprise that getting set up on Nintendo Switch is just as seamless. Although I wouldn't recommend breaking off the Joy-Con and attempting local play for fear of dropping frames all over the shop.

Borderlands: The Pre-Sequel may not have originated the co-op loot-shooting formula the series is now known for, but it did help solidify its sheer brilliance. Playing it again now, nearly a decade on, that's made immediately obvious the moment you break out a rifle that spews acid. Plus, unlike many other similar games of its ilk today – *Aliens: Colonial Marines* or *Back 4 Blood*, say – everything just works. Hit-or-miss humour and a forgettable hub aside, *Pre-Sequel* represents the comfort food of first-person shooting, and I'm quite happy to keep on going back for seconds. ⓦ
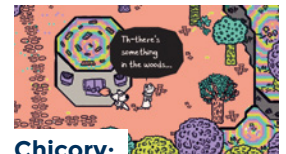
> **"Zero-G butt slamming needs to make a comeback in first-person shooters"**

Wireframe Recommends

The Gardens Between
PC, SWITCH, XBO, PS4, IOS
A wholesome 2.5D puzzle-platformer with a huge heart, centred on the bonds of friendship. Chock-full of abstract islands you must carefully walk back and forth through, it's simultaneously challenging yet chill.

Chicory: A Colorful Tale
PC, SWITCH, PS5, PS4
The whole "venture out and bring colour back to a black-and-white world" conceit was explored a fair bit in indie games last year. *Chicory*, however, lets your artistic side flourish.
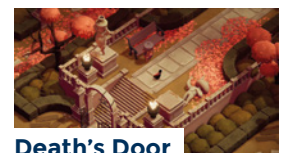
Death's Door
PS4, PS5, PC, XBO, SWITCH
This top-down *Zelda*(ish) clone excels due to punchy combat, cool powers, and an enthralling world. Reaping souls as a nimble crow is never not fun, providing you're OK constantly rolling.

Birds of a feather

Jon Bailes shores up his critic's credentials
with What Remains of Edith Finch

As a critic, there are certain games you're supposed to have played. Many of the big names, of course, but also the celebrated small ones, the quirky boundary-pushers, and the arty award-winners. It's almost embarrassing to admit you haven't, but there's always a few that slip through the net like, say, a salmon that should have wound up in an American fish cannery. These are games you often hear about, but somehow never reach the top of your in-tray, as a march of new releases sweeps you along. Yes, even some that are only two hours long. And on Game Pass. Fine, I have no excuse. But that was me and *What Remains of Edith Finch*.

What's worse is that *Edith Finch* is one of those games that everyone seems to love, and they're absolutely right to. I really should have got to it earlier, because *Edith Finch* is a work of immense beauty, an evolved form of the 'walking simulator' that foregrounds the unique qualities of the genre as it winds through an anthology of unfortunate deaths. Above all, it needs to be experienced first hand. Surely that's the secret to a good walking sim – the interactivity may be slight, but it's absolutely essential.

It's telling that I don't want to talk first about *Edith Finch*'s writing or storytelling, but its control. I know some find it gimmicky when games have us mime actions like turning handles or pulling doors with shifts of a mouse or analogue stick, but I've always appreciated it. Yes, you could just press a button, but it's not the same. It's good to feel resistance in the hands, to put a little effort in. The properties of objects really register, which sucks you deeper in, and that's crucial here.

Tactility, weight, and spatial perception are the invisible machinery of *Edith Finch*. The early stages ease you into its mechanisms without ever telling you as much, giving you a few generic fittings to wind, press, or squeeze through until it's second nature, always requiring just enough input to make you feel like you're participating, but not so much that you can do it wrong. After that, your movements in a vast array of situations feel instinctive, whether it's everyday stuff like unlatching a gate or shifting your weight on a swing, or less common activities like picking up a crutch and instantly wielding it as a makeshift weapon, or being a tentacled monster.
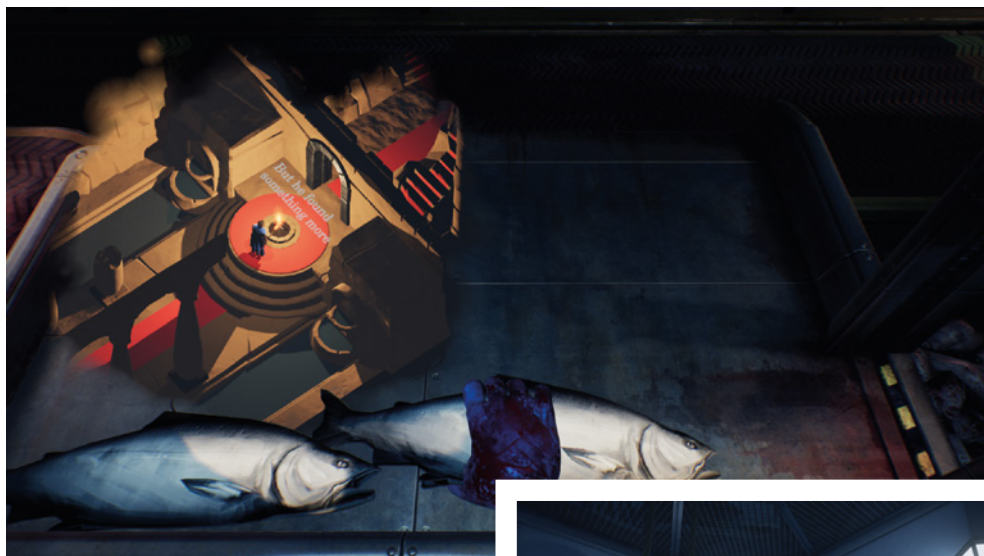
Better still, it manages to be instinctive and odd at the same time, thanks to its use of perspective and scale. *Edith Finch* is like being Alice in Wonderland, where by turns you feel dwarfed by the teetering Finch estate, then gigantic as you stoop into its secret passages, always uncertain how the tone will shift, or who you'll meet, and under what circumstances. This is a disorienting submergence into magic realism, where subtitles plaster themselves on surfaces to underline how the world is being written into existence. You're pulled through fractured fantasies at breakneck speed, then ejected back outside to mull over what happened and get some fresh air before round two. But I expected all that. I knew there would be leaps of imagination, whimsy, and dark humour as I visited the rooms and played out the fates of Edith's relatives. I wasn't prepared, however, to find some of it so powerful.

I had to pause after the story of Gregory, the baby who drowns in the bath. Not because it was such a terrible event, but because it's framed with such surprising artistry. I was dreading it because I could see it coming – looking at the family tree Edith carries with her, I noted the one-year difference between Gregory's birth and death year – it cast a shadow over the earlier episodes. But instead I was met with Gregory's own experience of purest playfulness and joy. Imagining his rubber ducks and wind-up frog dancing to a symphony is total fulfilment for him, an unsullied love for a perfectly theatrical world that even in the moment of demise couldn't be tarnished by fear or loss or emptiness or cynicism. I felt a swell of emotion that was exactly that – not sadness nor happiness, just emotion.

Then there's Lewis in that cannery, decapitating salmon while daydreaming of life in a faraway kingdom, until his eventual suicide. It's scary how easy it is to keep the rhythm of salmon chopping – left, right, up – running subconsciously while entertaining an unrelated fantasy (with the brilliant touch that fish keep popping up in the dream). When labour can be so mechanical and dehumanising, who can blame Lewis for escaping reality? I can't think of anything that captures the sense of being torn from yourself in menial jobs so well, when you tell yourself that your life is what happens somewhere else, while mind-numbing tasks eat away your days.

Of course, the point in *Edith Finch* is that despite all the death, it's a game about life. The Finch family might be cursed, or merely be experts at exiting on their own terms, often pig-headedly doing what they love, regardless of the consequences. Are they reckless, self-absorbed, irresponsible? Perhaps. But none are tragic, except possibly Edith's mother, who spends her life running scared.

Tragedy isn't dying, *Edith Finch* says, it's not living. And with that, I should learn to stop putting off playing powerful, genre-defining games I've missed that I'll almost certainly love. Now, if you'll excuse me, it's time I booted up *Disco Elysium*. Ⓦ
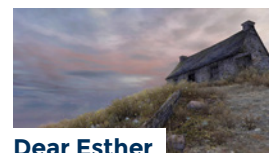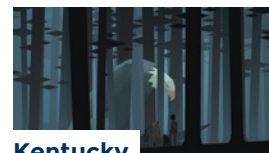
Chase H.Q.

The racer that wasn't sure whether it misheard 'smash hit'
as 'smash it', and so combined the two

TAITO / **1988** / **ARCADE**

I n the early days of racing games, one of two things tended to happen when you rammed your car into another. The first was that your vehicle would instantly slow to a crawl, as if it had driven directly into a colossal cushion, rather than struck another ton-plus of metal barrelling along a road. Occasionally, a game might have your car spin or dramatically flip. The other option had your car explode in a way real-world cars in the real world seldom do: the slightest touch from a rival in *Pole Position*, for example, instantly turned your race car into a raging inferno.

Then Taito rocked up with *Chase H.Q.* and all bets were off. This arcade classic was an antidote to racers obsessed with 'rules' and 'avoiding traffic' and 'not smashing into things with merry abandon' – those prissy killjoys. At last, you could unleash your inner road-rage demon, using your cop car to take out your frustrations on a nasty criminal trying to flee justice. At last: the one thing you really wanted to do in those other games – smash the living daylights out of another car – was finally the objective.

Naturally, there was a bit more to it than that. Missions kicked off with Nancy at *Chase H.Q.* saying "We've got an emergency here", providing a smidgeon of context. She'd outline which criminal you were after (such as Ralph, the Idaho slasher) and the car they were in (a white British sports car, the fool). Sixty seconds on the clock and one 1980s soundbite later ("Let's go, Mr Driver!") and you'd be pelting along in hot

> **"This arcade classic was an antidote to racers obsessed with 'rules' and 'avoiding traffic'"**

pursuit, while Nancy sporadically griped at your ineptitude as the seconds ticked away.

Realism was in short supply. Three supplied turbo boosts appeared to temporarily turn your car into a jet-propelled rocket – useful when partaking in smashy bits, given the added thrust they afforded you. And, as ever, other road users were blissfully unaware of your presence, not even moving aside despite the demolition derby going on in their rear-view mirrors. More fool them: one hit and they went up like those cars in *Pole Position* – but you kept on going.

Five stages later, you were at peace – until you again tried your hand at a racer partial to convention, suffered a cushion or explosion incident, and subsequently wondered why all games didn't have a bit more *Chase H.Q.* in them.

Taito recognised this thirst for smashy racing larks and the series continued – although it initially struggled to recapture the thrill of the original game. Unwisely, 1989 sequel *Special Criminal Investigation* armed you with weapons. So although you could ram escaping criminals into submission, it was more sensible to hang back and shoot them from a safe distance – especially when a helicopter helpfully armed you with a rocket launcher capable of taking out anything in your way.

The problem is that shooting at other road users didn't feel new – it felt old hat and lacked physicality. This wasn't the killer feature we'd fallen in love with. Fortunately, 1992's *Super Chase: Criminal Termination* got the series back on

track, switching the viewpoint to first-person perspective and ramping up the absurdity. It wasn't fussed about the pursuit part: barely 20 seconds in and you were smashing up a perp's vehicle as the pair of you sped along beaches, soared into the air, and careened through shops, vehicle parts flying everywhere as you caused significantly more mayhem than the people you ended up arresting.

More recently (2007), we got *Chase H.Q. 2*, which gave the series a modern lick of paint, while having you zoom around a racing oval the wrong way, trying to take down a massive articulated lorry with your tiny sports car.

Surprisingly, given how gleefully fun *Chase H.Q.*'s original hook was, few developers at the time took up the mantle and released their own ram-'em-ups. Still, the premise did inspire other titles that revelled in take-downs – the *Burnout*s and *Asphalt*s of this world – and more notably games like *Driver: San Francisco*, *Need for Speed: Hot Pursuit*, *Ray Tracers*, and *Carmageddon*, which demand a rather more, shall we say, persistent approach to wanton vehicular destruction.

Arguably, the last of those took things a bit too far, largely removing the notion of racing – or even driving – and instead being obsessed with running down pedestrians and smashing rivals to a pulp. Still, there's a lot to like about any racing game that's about smashing things up rather than sticking rigidly to the law. After all, where's the fun in doing things by the book? Don't we all want to ram the car in front sometimes? Or repeatedly? Just don't tell our old driving instructor – she'd be most disappointed. ⓦ

SMASH AND GRAB

As 1990 loomed into view, the age of the 8-bit microprocessor was drawing to a close. Cynical software houses eked out the last dregs of profitability by shovelling arcade conversions onto creaky machines, with scant regard for quality. Yet Ocean Software bucked the trend with *Chase H.Q.*, managing the unlikely feat of squeezing the entire arcade cab into the humble ZX Spectrum.

The game was fast, responsive, and looked fantastic. It didn't quite match the blistering pace of the arcade original, but the conversion made ports for more powerful machines like the Amiga look like steaming piles of roadside wreckage. So this one wasn't just 'killer feature' but also 'killer app' – to the point you even got speech on 128kB machines. "More, push it more!" Not sure that would have been possible in this case, old bean.

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