mystery science

Grades K-5
Mini-Lesson: “How are video games made?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! When I was really little, I used to watch my sisters play a video game, called Pong, on our TV. Pong was one of the first video games you could play at home. It was pretty simple, just a couple of sticks hitting a dot back and forth on a screen. Now, Pong may not seem that exciting, but when video games were new, it seemed amazing to us. Someone named Zenon has a question about video games, let's give Zenon a call now.

[Video Call]

- Hi, Doug!

- Hi, Zenon!

- I have a question for you. How are video games made?

- Ooh, that's a great question.

When it comes to playing video games, it all seems so easy, you buy your favorite game, crash down on the couch, and boom, you're ready to play. In fact, it's so easy to download a game, that it can be tempting to think that video games are easy to make too, but nothing could be further from the truth. Making a video game is a lot of work, and it takes a really long time. Check out this game, it took over 100 people eight years to create Animal Crossing: New Horizons. Now, not all games take as long as Animal Crossing, but making a game definitely

isn't easy. Before I say anything more, I'm curious, why do you think video games are so hard to make?

VIDEO 2

Well, I don't know how you answered, but you might've said that video games are hard to make because of all the different parts, and you would be right. Think about it, there are power-ups to collect, bosses to beat, entire new worlds to explore, and that's only on the first level. It makes you wonder, how do game designers do it? I mean, where do they even start? Well, believe it or not, they start the same way you start when you write a story at home or at school, with an idea. Meet, Shigeru Miyamoto. When she girl was little, he loved exploring the forests surrounding his village in Japan. One day he discovered something, a cave. It was dark and mysterious, and he wondered what was inside. Were there imaginary creatures like elves or fairies? Were they guarding treasure? Did they have Dungeons? When he grew up, Shigeru had an idea. What if he made a video game about that cave and a treasure that was hidden inside? And what if that game had a hero who wanted to find it? Shigeru's idea became one of the most popular video games ever created. A game called "The Legend Of Zelda." Now thinking up ideas for characters and places is only the beginning. There's a lot more to think about before a game is made, like how many levels will there be. And will there be enemies? What will they look like? Game designers, write all of their ideas in a huge book which they give to special designers, called concept artists. Concept artists love to draw. So they take all the game designers' ideas and decide what they're going to look like. Some are in charge of drawing the characters, like this one, while others are in charge of drawing the worlds where the characters will live, like these. Now you may have noticed that these drawn characters and worlds, aren't quite the

same as the characters and worlds you're used to seeing in a video game. That's because they're not done yet. They need to be put into the game. And that's the job of computer artists called 3D modelers. These artists spend weeks turning the pictures into finished worlds and 3D characters that we see in games. But just because the characters are in a game, doesn't mean the game is ready to play. Characters need to be told what to do. And that's where computer experts called programmers come in. Check out what this programmer is up to. It may look like she's typing a bunch of random letters and numbers, but she's actually giving the computer directions with something called code. Her code will tell the characters in the game, what to do, when a player presses a button, or moves the joystick, or pick something up, or tries to beat a boss. there are millions of possibilities. And that means programmers have to write millions of lines of code. And when you write that much, there are bound to be mistakes. And those mistakes can turn into what programmers call bugs or glitches. Like this one, or this one. Though bugs can be funny, they can also ruin a game. So game makers have to fix them before we get to play. This is where testers come in. If you like video games, you're going to love this—testers get to play video games all day and get paid for it. But they're not playing video games to see how many Super Mario levels they can pass or to keep Minecraft monsters from attacking their forts. They're playing games to fix them. You see a tester's job is to find all the bugs and parts of the game that aren't working right. They take notes on what they found and they share those notes with the programmers so they can fix the parts that are broken. After things are fixed, there are just a few pieces of the puzzle left, like designing cool-looking boxes to put the games in and making ads to tell the world that the game is coming out. Once that's done the time has arrived. From an idea in a designer's head to artists' drawings, to code on a

computer, the video game is finally ready for you to play. That's all for this week's question.

Thanks, Zenon, for asking it.