INTRODUCTION

# Everyone Is a Gamer!

**Almost every boy and girl between the ages of 12 and 17 living in the United States has played some kind of video game.**

Toddlers play *Doc McStuffins* games on their LeapPad tablets while their older siblings bop around to *Just Dance* on the Wii U in front of their TVs. Teenagers join multi-player games that can last for days or weeks! Even adults can be found playing solitaire on their desktop computers or *Candy Crush Saga* on their smartphones. Wow! That's a lot of gaming!

**WORDS TO KNOW**

**video game:** a game that is played by controlling images on a screen. Also known as an electronic game or digital game.

# VIDEO GAMES

**gamer:** someone who loves to play games.

**arcade:** an amusement area with games you play by inserting money or tokens. Arcade games sometimes award tickets you can exchange for toys and other prizes.

WORDS TO KNOW

Video games, which are also called computer games, electronic games, or digital games, have been around for a while, but they've never been as widespread as they are today. Back in the 1970s and 1980s, companies advertised home computers as learning and game machines for boys to use, although plenty of girls used them, too. Now, thanks to the availability of devices, it's easy for almost everyone to enjoy video games.

You could say that pretty much everyone is a **gamer**!

Think about all the ways people could be spending their free time, from watching movies to reading books to riding bikes to collecting rocks. It's pretty amazing to realize that one particular activity has captured the interest of so many different people.

## BONUS POINTS

Before video games were invented, people went to **arcades** to play coin-operated games of skill. These games include pinball machines, where players use flippers to knock rolling marbles into bumpers to earn points, and Skee-Ball games, where the goal is to throw balls at a target.

### WHAT DO YOU WANT TO BE WHEN YOU GROW UP?

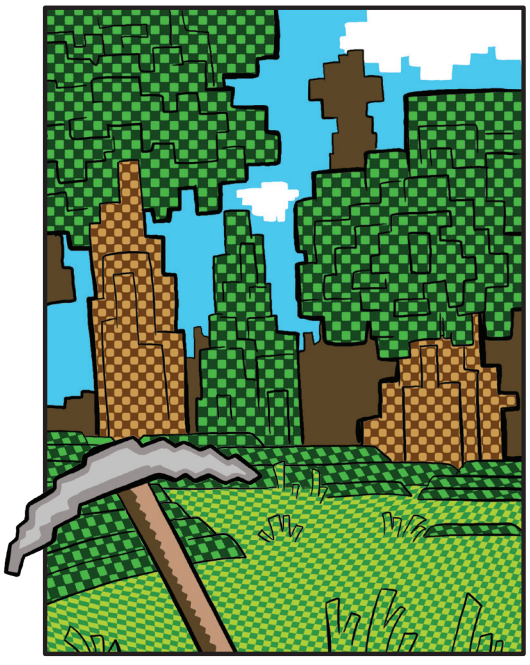
In 2014, the game company Hasbro decided to update the job choices in *The Game of Life*. So the company did a survey that asked 400 children ages 8 to 12 in the United States, the United Kingdom, Germany, France, Mexico, South Korea, and Australia what they want to be when they grow up. The top answer? Video game designer!

## WHAT IS A GAME?

To understand why gaming is so popular, it helps to know what a game really is. Here are some things you'll find in almost every game.

**Interactive features**. Unlike other forms of entertainment, such as comic books or movies, games make you part of the action. One thing every game has to have is a **controller** that a player uses to play the game. Each time you play it's a different experience, and the outcome of the game depends on you.

**Goals.** The **object of the game** might be to win or to get a high score or to advance to the highest level. In **world-building** games, the goal is to keep your characters alive and happy. The goal helps you decide what moves to make next.



**Challenges.** Games make you work by challenging you on your way to the goal. These have to be the right kind of challenges. If a game is too easy, players will quickly become bored. If it's too hard, they'll give up. And if only certain players can win, such as those who are richer or taller or older than the rest, then players will feel that the game is unfair.

### WORDS TO KNOW

**controller:** a part or device that players use to interact with a game.

**object of the game:** what you have to do to win or reach the final goal, also called the objective.

**world-building:** designing an imaginary setting for your game to take place in, including the people or creatures that live there, how they move and communicate, and what the buildings and landscape look like.

**mission:** one of the goals players must complete to advance in the game.

WORDS TO KNOW

The best games offer challenges that the average player can achieve with the right combination of skill, luck, strength, and knowledge. Many games also let you change the level of difficulty so that the challenge is just right for your skill level but gets harder as you get better.

**Rewards and surprises.** Winning a game feels awesome! But the best games also give you smaller, unexpected rewards along the way. You might get extra points for shooting down a passing UFO, temporary protection from attack, or mini games within a game that earn you useful items.

PS

## DO GAMES HAVE TO BE FUN?

Video games are often thought of as pure entertainment, but they are used for other purposes as well. Early computers were sometimes taught to play chess as a way of testing how powerful they were. Games such as *Math Blaster* were used to help kids with the multiplication tables. Games such as *The Oregon Trail* took players on trips through history.

Today, some designers create serious games that they hope will make the world a better place and help people lead better lives. For example, players in *Climate Defense* try to prevent global warming by planting trees. Serious games can also be fun! The city of Melbourne, Australia, wanted to warn people to stay safe around train tracks, so it created a silly commercial that later became a game called *Dumb Ways to Die*. Colorful blobs in this game die in weird ways, such as from eating tubes of glue. And in the game *Zombies, Run!*, players get exercise in the real world while trying to fulfill **missions** and avoid the undead. You can sample some serious games on the website Games for Change.

Games for change

These little surprises make you willing to take risks and keep going when the challenges get tough.

**Competition and cooperation.** Many games pit players against each other or against the game itself. Some multi-player games encourage you to work together with other players in teams called guilds to fight rival gangs and enemies.

**Clear rules.** The rules in a game tell you what you can and cannot do. For example, you might be allowed to use a dictionary in a word game or go online to look up the answer to a trivia question. Adjusting the rules is another way to make the challenge easier or harder for different players. Mostly, however, they simply make the game fair for all players.

## BONUS POINTS

While playing the free online game *Freerice*, you can learn new words and practice math facts. For every right answer, the website donates 10 grains of rice to the United Nations World Food Program. As of 2014, more than 101 billion grains of rice had been given to hungry people around the globe.

**Useful items to collect.** In many games, players start out with things that will help along the way. You earn more (or lose the ones you have) as the game goes along. These can include game pieces, tools, money, health points, weapons, or extra turns.

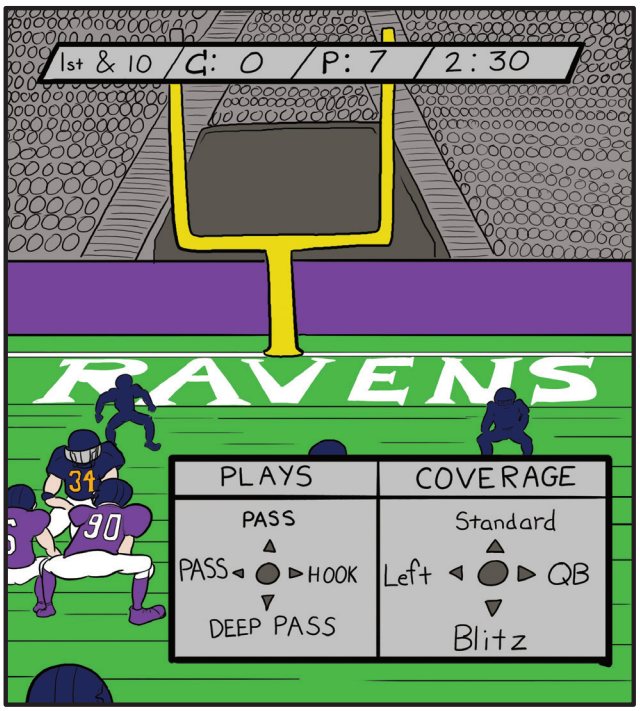
**joystick:** a control lever that can be pushed in different directions.

## WORDS TO KNOW

**Training.** Games teach you skills and strategies that can help you win. In some cases, the *real* object of a game isn't to rack up points, but to learn skills or information that are useful in the real world.

**Fun.** If games weren't fun to play, there wouldn't be so many gamers!

So, what's the best definition of a game? You could say that a game is a fun, challenging activity in which players compete using skill, knowledge, and luck. The point is to complete tasks and earn rewards, without breaking the rules, in order to reach the final goal.




## BONUS POINTS

The first game to use a **joystick** as a controller was a flight simulator called *Learn to Fly*, which came out in 1934. Players had to steer a little model airplane hanging from the ceiling of the game cabinet through a windstorm created by a fan.

*Video Games: Design and Code Your Own Adventure* is written for everyone who likes video games. You'll learn where games come from, how they are made today, and how to create them yourself!

**Game jam** activities will give you hands-on experience making games. As you work on your own games, you'll develop skills in storytelling, technical writing, communications, graphic design, computers, and teamwork. And you'll have fun doing it!

**Ready, player? Then hit start! Good luck!**

## WORDS TO KNOW

**Game jam:** a gathering of game developers to design and create games in a short period of time.

## GOOD SCIENCE PRACTICES

Every good game developer keeps a game journal! Choose a notebook to use as your game journal. As you read through this book and do the activities, keep track of your ideas, your game development process, your results, and ways in which you can make your games and inventions better.

Each chapter of this book begins with an essential question to help guide your exploration of video games.

### ? ESSENTIAL QUESTION

Keep the question in your mind as you read the chapter. At the end of each chapter, use your game journal to record your thoughts and answers.

# MAKE A CARDBOARD ARCADE GAME

## IDEAS FOR SUPPLIES

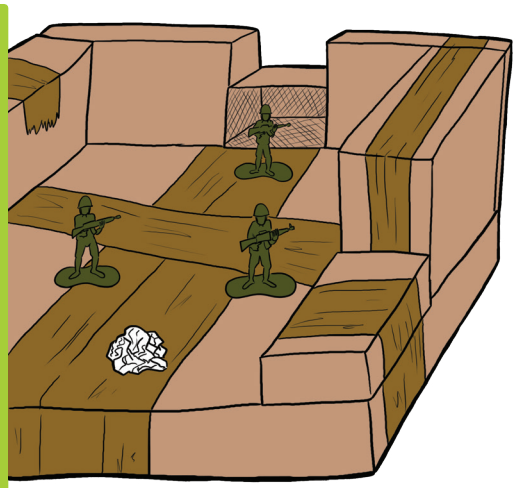
*lots of recycled cardboard ❖ craft materials such as pipe cleaners, straws, popsicle sticks, and bottle caps ❖ things to toss ❖ decorating supplies*

**In 2011, nine-year-old Caine Monroy built working cardboard versions of his favorite arcade games in his dad's auto parts shop, including a basketball toss and a tabletop soccer game with plastic army men. A customer named Nirvan Mullick liked Caine's Arcade so much, he invited lots of people to come and play. Mullick also made a short documentary about Caine's Arcade, and Caine became famous! You can watch the video here.**

Caine's Arcade

Mullick also started the Imagination Foundation. The group holds a Global Cardboard Challenge every year in which kids around the world create cardboard games. In this activity, you'll design an arcade game using cardboard, tape, string, small toys, and other household items. This is fun to do with other people. You can all share your materials. Ask local appliance stores if they have any leftover cardboard boxes.

1 **Brainstorm** ideas for games to build. How might they work? Sketch out your ideas on a piece of paper and choose one to work on. Make notes and drawings to show how the different parts of the game fit together. Be sure to write out the directions so other people will know how to play the game.

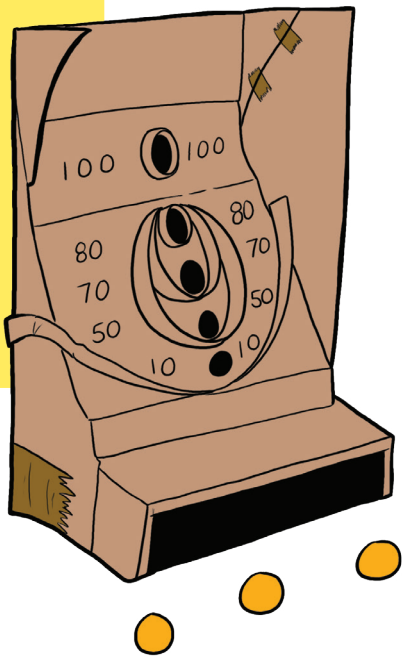


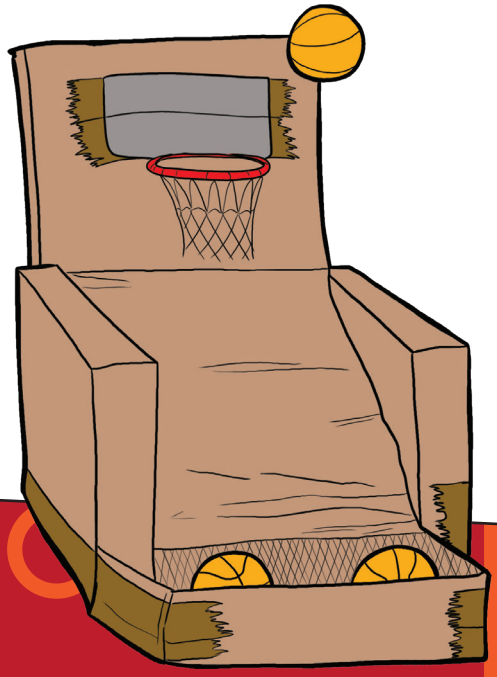
## WORDS TO KNOW

**brainstorm:** to come up with a bunch of ideas quickly and without judgment.

**Easter egg:** a secret message or surprise hidden in a video game for players to find.

**2** Following your plans, cut out the cardboard shapes you need and put them together using tape, staples, or other fasteners. Test it to make sure it works. Are all the parts moving correctly and easily? Does your game have goals, challenges, and rewards? What are the rules? What is a good name for your game?



**3** When your game is ready, invite friends and family to try it out! If you find problems, fix them and test it out again. Ask players to offer feedback so the next game you make is even better.

## EASTER EGGS

In many video games, the designers hide little surprises known as **Easter eggs** for the players to find. The first known Easter egg was found in a 1979 game called *Adventure*. The author of the game hid the words "Created by Warren Robinett" in a secret room. It wasn't discovered until a year after the game's release! In *The Legend of Zelda: A Link to the Past*, lucky players might stumble upon the Chris Houlihan Room. Filled with jewels and other useful items, the room is named for a fan who won a contest. Easter eggs often include guest appearances by characters from other games, celebrity voices, or bonus mini games.