



COODE WORDS

**READY TO
LEARN ABOUT
CODING?
TURN THE
PAGE!** 

Super-simple
language tips



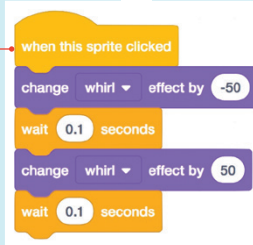
How to code
your life



SAY IT IN CODE

Want to learn to code? There are lots of different coding languages out there, and some of them were developed especially for kids. In fact, basic coding is so easy to pick up, you can teach it to yourself.

Code is behind everything you do on your computer and phone, like playing games and texting. The main languages that power websites and apps are called JavaScript and Python. But another language called **Scratch** is made for kids like you. Scratch uses simple building blocks to make commands and lets you create animated stories where you get to decide what your characters say and do. If you have access to a computer or a tablet with internet, you can code!



Chances are, you already know something about coding from real life. Each morning, you do certain things. You might eat breakfast, take a shower, get dressed, and then leave for school. In computer science lingo, those steps you take to reach a goal or solve a problem are called an **algorithm**. You use algorithms all the time, in fact. Doing your math homework,

figuring out the fastest route to your friend's house, setting the table—they're all algorithms!

You probably go about the steps in your morning routine in the same order every day, right? Doing things in a specific order is what coders call a **sequence**. And you go through that same sequence every day. Code has a name for repeating a sequence; that's called a **loop**. You might say that out of habit you are programmed to do your morning routine the way someone might **program** a computer, using code to make it perform certain actions.

But something has to set that whole morning routine (or program) in motion—you! In coding, the moment you roll out of bed to begin the process is called an **event**. An event is an action, like tapping a keyboard or touch screen, that causes the program to respond. Scrolling through photos on a tablet or hitting the pause button on your favorite show—both of these actions are events that stimulate your device to do what you want it to do. And that's what ultimately makes coding so cool: You're the one who's in control!

GET WITH THE PROGRAM

You probably don't think twice about it, but examples of coding are all around you.



TRAFFIC LIGHTS

They're timed by computers to react to the flow of vehicles and keep traffic running smoothly.



A HOT SHOWER

Preprogrammed microprocessors (tiny computers) in water heaters can change the water's temperature.



ELEVATOR

The elevator at your doctor's office is coded to stop on the floor it's told. Pushing a button gives it that command.



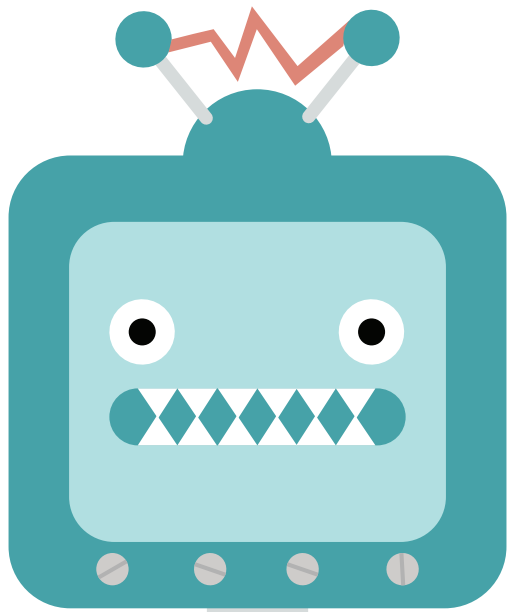
MICROWAVE

When you press a cooking time and the start button, you're triggering the code that tells the microwave to cook.



WASHING MACHINE

Maybe you've seen one with a computer panel that "senses" how heavy the load is so that it fills the drum with the right amount of water.



Bot seriously,
just tell me
what to do!

THINK LIKE A PROGRAMMER

Pretend that you have a personal robot to perform your most basic tasks, like packing your backpack. The thing is, your robot needs to be trained *how* to do it (or she might shove a heavy lunch box on top of your homework folder—not good!). Here’s how you’d use code to tell your robot what to do.

1 You want your robot to put your lunch box in first, your books next, and your homework folder last. You’d code those tasks in a **sequence**, meaning the exact order that you want them to happen.

2 Great! You now have a robot who knows how to pack your backpack. Instead of having to write the same code every day to remind her what to do, you’d create a loop. **Looping** puts the sequence on repeat, so that your robot packs your bag the exact same way from Monday to Friday.

3 Your bookbag-packing robot is awesome. But wait a minute—now it’s Saturday, and you’re not going to school. So you’ll create an **event** to put your robot’s program on pause until Monday. Pretty clever, huh?

GREAT MOMENTS IN CODING HISTORY

1843

British mathematician **Ada Lovelace** writes the first computer program.

1854

George Boole creates Boolean algebra, laying an important foundation for coding.

1945

The first electronic computer, called **ENIAC**, is used by the U.S. military.

1959

COBOL, a programming language based on words rather than numbers, is developed by **Grace Hopper**, a rear admiral in the U.S. Navy.

1991

Dutch programmer **Guido van Rossum** creates the **Python** programming language, which simplifies coding.

1995

James Gosling introduces **Java**, a programming language that can run on most platforms.

2013

The nonprofit group **Code.org** is founded to promote computer science in schools.

2017

Google’s **DeepMind AI**, an artificial intelligence machine, beats the world’s best human player of Go, a traditional board game.

SHOW WHAT YOU KNOW!

Now that you're caught up on what coding is, see if you can ace this quiz.

1. Which of these is *not* a coding term?

- A Program
- B Sequence
- C Score
- D Event

2. Which is the correct term for things happening in a certain order?

- A Looping
- B Sequencing
- C Blocking
- D Algorithm

3. Which of these things can you do with code?

- A Tell a story
- B Build an app
- C Create a website
- D All of the above

4. True or false: You can learn to code with just a computer and the internet.

- A True
- B False

5. Which of these would be an "event"?

- A Hitting the space bar on your keyboard
- B Zooming in on a map on a screen
- C Using your thumb to scroll through photos
- D All of the above

6. One of these is an example of an algorithm. Can you tell which?

- A Talking to a friend
- B Building a birdhouse
- C Playing in the pool
- D Hanging out on the couch