FREE TEACHER'S GUIDE · GRADES 3–6 · AGES 8–12

How Technology Works

Six ready-to-teach lessons about the Internet, computers, and AI, built around free short readings and printable activity sheets.

How each lesson runs

5 MINUTES	10 MINUTES	15 MINUTES	5 MINUTES
Warm-up question	Read the short guide together	Activity sheet	Talk about it and exit ticket

Each lesson takes about 35 minutes. The lessons work in any order, on their own or as a six-part unit. No devices are needed for students: project the reading or print it.

The six lessons

	LESSON	BIG IDEA
1	**How the Internet Works**	The Internet is a worldwide network of connected networks.
2	**Wi-Fi and Routers**	Wi-Fi uses radio waves to link devices to a router.
3	**Passwords and Staying Safe**	A password proves it is really you.
4	**Inside a Computer**	Every computer does four jobs: input, processing, output, and storage.
5	**Algorithms and Bugs**	An algorithm is a list of clear steps, in order, that gets a job done.
6	**AI and Chatbots**	Machine learning finds patterns in many examples.

What you need

The readings

Short illustrated guides at **lfthq.com/learn**. Each lesson lists the page to open.

The activity sheets

Two-page printables with answers. Some download directly from **lfthq.com/free**. The rest are on the download page linked in your welcome email.

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Lesson 1 How the Internet Works

Big idea. The Internet is a worldwide network of connected networks. Information crosses it in small pieces called packets.

WORDS TO KNOW
network, packet, router, server, DNS

WARM-UP QUESTION
When you tap a link, where do you think the page comes from?

READ TOGETHER
lfthq.com/learn/how-does-the-internet-work-for-kids

ACTIVITY
How the Internet Works activity sheet (in your email pack)

TALK ABOUT IT
- Why is information split into packets instead of sent in one piece?
- What job does DNS do when you type a website name?

EXIT TICKET
Name two stops a message makes between your device and a website.

Watch for. Children often picture the Internet as one giant computer. It is many networks joined together.

Lesson 2 Wi-Fi and Routers

Big idea. Wi-Fi uses radio waves to link devices to a router. The router links the home or school network to the Internet.

WORDS TO KNOW
Wi-Fi, radio waves, router, signal, ISP

WARM-UP QUESTION
Where in your home or school is the Wi-Fi weakest? Why might that be?

READ TOGETHER
lfthq.com/learn/what-is-wifi-for-kids
lfthq.com/learn/what-is-a-router-for-kids

ACTIVITY
What Is Wi-Fi? and What Is a Router? activity sheets (lfthq.com/free)

TALK ABOUT IT
- How can a device show full Wi-Fi bars and still have no Internet?
- What does a router do with each packet?

EXIT TICKET
Finish the sentence: Wi-Fi is not the same as the Internet because…

Watch for. "Wi-Fi" and "the Internet" are used as if they mean the same thing. Wi-Fi is only the link to the router.

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Lesson 3 Passwords and Staying Safe

Big idea. A password proves it is really you. Long, secret, different passwords and careful habits keep accounts and personal details safe.

WORDS TO KNOW
password, passphrase, private information, trusted adult

READ TOGETHER
lfthq.com/learn/what-is-a-password-for-kids
lfthq.com/learn/internet-safety-for-kids

TALK ABOUT IT
- Why is a long passphrase stronger than a short password?
- What should you do if something online makes you uncomfortable?

WARM-UP QUESTION
What makes a secret easy or hard for someone else to guess?

ACTIVITY
What Is a Password? sheet (lfthq.com/free) and Internet Safety sheet (in your email pack)

EXIT TICKET
Write one rule you will follow online this week.

Watch for. Do not ask children to share or write down their real passwords. Use made-up examples only.

Lesson 4 Inside a Computer

Big idea. Every computer does four jobs: input, processing, output, and storage. RAM holds what is in use now. Storage keeps things for later.

WORDS TO KNOW
CPU, RAM, storage, input, output, operating system

READ TOGETHER
lfthq.com/learn/how-do-computers-work-for-kids

TALK ABOUT IT
- How is RAM like a desk, and storage like a bookshelf?
- Why can unsaved work be lost when the power goes off?

WARM-UP QUESTION
What happens inside a computer between pressing a key and seeing the letter?

ACTIVITY
How Computers Work activity sheet (in your email pack)

EXIT TICKET
Give one example each of an input device and an output device.

Watch for. The CPU is often called the "brain." It follows instructions very fast, but it does not think the way a person does.

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Lesson 5 Algorithms and Bugs

Big idea. An algorithm is a list of clear steps, in order, that gets a job done. A bug is a mistake in those steps.

WORDS TO KNOW
algorithm, program, bug, debugging

WARM-UP QUESTION
Give me exact steps for drawing a square. (Follow them literally on the board.)

READ TOGETHER
lfthq.com/learn/what-is-an-algorithm-for-kids
lfthq.com/learn/what-is-a-computer-bug-for-kids

ACTIVITY
What Is an Algorithm? and What Is a Computer Bug? activity sheets (lfthq.com/free)

TALK ABOUT IT
- Why does the order of the steps matter?
- How can two algorithms do the same job in a different number of steps?

EXIT TICKET
Write a three-step algorithm for something you do every morning.

Watch for. Bugs are a normal part of programming. Treat finding one as progress, not failure.

Lesson 6 AI and Chatbots

Big idea. Machine learning finds patterns in many examples. A chatbot writes text that sounds likely, so it can be wrong and still sound sure.

WORDS TO KNOW
artificial intelligence, machine learning, pattern, chatbot, token

WARM-UP QUESTION
How do you think a phone learns to recognize a face or a voice?

READ TOGETHER
lfthq.com/learn/what-is-artificial-intelligence-for-kids
lfthq.com/learn/what-is-a-chatbot-for-kids

ACTIVITY
What Is a Chatbot? sheet (lfthq.com/free) and How Artificial Intelligence Works sheet (in your email pack)

TALK ABOUT IT
- Why should important answers from a chatbot be checked?
- What details should never be typed into a chatbot?

EXIT TICKET
Name one thing AI does well and one way it can go wrong.

Watch for. A friendly tone can make a chatbot seem like a person. It does not have feelings or wishes.

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Wrapping up the unit

Check understanding with the quiz

The free quiz at **lfthq.com/quiz** has three short rounds: the Internet, computers, and AI. Run it on a projector as a class, and let students vote on each answer before you reveal it.

One-page poster

Ask each student to choose one lesson and make a poster that explains it to a younger child, using their own words and one drawing.

Technology word wall

Add the "words to know" from each lesson to a wall display. Students write the meaning in their own words underneath.

Send it home

The activity sheets are free to copy. Sending one home gives families an easy way to talk about how technology works.

Tips for teaching these topics

- **Start from what students already use.** Games, video apps, and messaging give you examples for every lesson.
- **Act it out.** Students can be packets, routers, or steps in an algorithm. Moving around the room makes the idea stick.
- **Keep safety practical.** Use made-up names, passwords, and addresses in every example.
- **Welcome mistakes.** Wrong guesses in the warm-up are useful. Come back to them at the end and ask what changed.

Unit reflection

Three questions students can answer in writing or in pairs.

1. Which idea surprised you most, and why?

2. What is one thing you will do differently when you use a device?

3. What is one question about technology that you still have?

GO DEEPER WITH THE BOOKS

These lessons introduce topics from the series **How Technology Works for Kids** by Laith Sad.

How the Internet Works for Kids Ages 8–12: **amazon.com/dp/B0HLH86YQ3**

How Computers Work for Kids Ages 8–12: **amazon.com/dp/B0HLYSJ1QX**

How Artificial Intelligence Works for Kids Ages 8–12: **amazon.com/dp/B0HM3R4D29**

More free sheets and guides: **lfthq.com/free**

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