Engineering on the Go:
I Spy Technologies

2+ PLAYERS

FOR AGES 4+

I Spy Technologies

Welcome to **I Spy Technologies**, a version of the classic guessing game I Spy. In this activity, one player spies a technology and other players try to guess what it is. Spying and guessing as a family are great ways to have conversations about technology and the human-made world.

DID YOU KNOW?

A **technology** is anything designed by a person to help solve a problem or meet a need. It does not need to have a battery or use electricity! **Engineers** are people who figure out how to make technologies.

How to Play

1. Find a group of at least two players.

2. Find the card for the location you are in. Read the clues to yourself.

3. Look around you. Find a technology that fits with one of the clues. Read the clue out loud to the other players.

4. Other players should try to guess the technology by asking questions.

5. A correct guess starts the game over. Now it's someone else's turn to Spy Technologies!

Kitchen

I spy a technology that helps people . . .

- cut food.

- cook food.

- store food.

- clean the kitchen.

GO FURTHER

There are lots of technologies in the kitchen. Can you find something that is not a technology? How do you know?

Dining Room

I spy a technology that helps people . . .

- eat or drink.

- decorate the room.

- keep the table clean.

- see when it's dark.

GO FURTHER

What are utensils, plates and bowls made out of? What makes these materials good or bad for this use?

Living Room

I spy a technology that helps people . . .

- sit.

- stay warm.

- entertain themselves.

- keep things organized.

GO FURTHER

Describe a robot that could dust and vacuum the floor. What would its shape and size need to be?
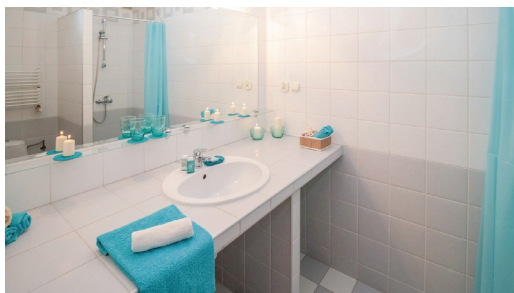
Bedroom

I spy a technology that helps people . . .

- sleep.

- stay warm.

- make the room brighter.

- keep clothes or shoes organized.

GO FURTHER

What are technologies that let people sleep in places besides a bedroom? At school? While traveling?
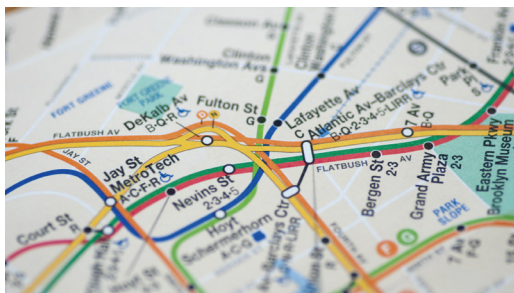
Bathroom

I spy a technology that helps people . . .

- see themselves.

- keep things or people dry.

- smell good.

- have privacy.

Make the Game Harder

If the game is too easy, try the challenges below. You can try them in any location:

1. Choose technologies that are small or hard to see.

2. Choose technologies that are systems. A system is a group of parts that work together to meet a goal. For example, subway cars and tracks make up a subway system.

3. Choose technologies that are processes. A process is a series of actions or steps leading to a result or goal. For example, a cooking recipe is a process.

Airplane

I spy a technology that helps people . . .

- feel comfortable in their seats.
- call for help.
- stay safe.
- entertain themselves.

GO FURTHER

What would be different about traveling on a rocket instead of an airplane?

Airport, Bus Stop, Train Station

I spy a technology that helps people . . .

• find out departure or arrival times.

• move around the airport or station.

• buy tickets.

• wait comfortably.

GO FURTHER

Notice the materials used to build the station or airport. Why do you think engineers chose those materials?

Bus, Car, Train, Other Vehicle

I spy a technology that helps people . . .

- store items.

- see when it's dark out.

- drive the vehicle.

- get in and out of the vehicle.

GO FURTHER

What are the advantages and disadvantages of cars that drive themselves?

Amusement Park

I spy a technology that helps people . . .

- buy tickets.

- find their way around the park.

- know if they can go on a ride.

- go in and out of the park.

GO FURTHER

Imagine a new roller coaster ride.
What would the seats look like?
What would the track look like?

Doctor's Office

I spy a technology that helps people . . .

- move around the building.

- give someone a check-up.

- record information.

- feel entertained.

Drugstore or Pharmacy

I spy a technology that helps people . . .

- find out which aisle their item is in.

- clean their teeth.

- feel better when they are sick.

- put makeup on.

GO FURTHER

Packages are a type of technology. How many different kinds of packages can you find in the drugstore?

Is It Technology?

Sometimes, players might disagree about whether a certain thing is technology. This is okay! Ask the following questions:

- Did someone design it?
- Does it help solve a problem?

If the answer to both questions is YES, it is probably a technology. If the answer to both questions is NO, it is probably not a technology.

If one answer is YES and one is NO, or if you cannot agree about the answers, that is a good chance to have a conversation!

Grocery Store

I spy a technology that helps people . . .

- move items around the store.

- display food.

- find items.

- carry items out of the store.

GO FURTHER

Can you figure out how a conveyor belt works? Think of other places that use conveyor belts.

Hair Salon or Barber Shop

I spy a technology that helps people . . .

- cut or style hair.

- keep the space clean.

- clean hair.

- see around the room.

GO FURTHER

Why do salon chairs need to go up and down? Think of other technologies that go up and down.

Library

I spy a technology that helps people . . .

- read.

- find a book.

- move around the library.

- learn about library events.

GO FURTHER

What holds pages of a book together? Why did engineers design books like this?

Movie Theater

I spy a technology that helps people . . .

- choose a movie.
- hold a snack.
- see where they are going.
- move around the theater.

GO FURTHER

Why do you think the film projector is far away from the movie screen?

Museum

I spy a technology that helps people . . .

- learn new things.
- display objects.
- move around the museum.
- find out about events happening in the museum.

GO FURTHER

Engineers help design museums around the world. Name a few museums you've heard of or visited.

Park

I spy a technology that helps people . . .

• know where they are.

• have fun.

• see when it's dark.

• eat and drink.

GO FURTHER

Do you think it is important to have parks? Why or why not?

You have almost gone through all the cards. That is okay! You can still play the game wherever you are.

1. Look around you and find a technology.

2. Think of something the technology does.

3. Make up a clue about the technology. Start with "I spy a technology that helps people…"

If you play for a few minutes each day, you can make thinking about technology and engineering part of your family routine!

Playground

I spy a technology that helps people . . .

• climb.

• move around the playground.

• stay out of the sun.

• stay safe.

GO FURTHER

Describe a new playground ride you would design and the materials you would use to build it.

Restaurant

I spy a technology that helps people . . .

- eat or drink.

- serve food or drink.

- light up the restaurant.

- decide what to order.

GO FURTHER

Are some utensils better for eating certain foods than others? What foods can you eat without utensils?

School

I spy a technology that helps people . . .

• write.

• read.

• organize things.

• carry items around the school.

GO FURTHER

How are classrooms designed to help students learn and teachers teach?

Sports Arena

I spy a technology that helps people . . .

- buy food.
- see close-ups of the game.
- stay safe.
- move around the arena.

GO FURTHER
What do engineers need to consider when building an outdoor arena? An indoor one?

Street Corner

I spy a technology that helps people . . .

- cross the street.
- know where they are.
- see when it's dark.
- park cars.

GO FURTHER

What are challenges of having cars, bikes, and pedestrians on a street? What are ways to keep them all safe?

Zoo

I spy a technology that helps people . . .

- stay safe.

- keep animals safe.

- know where they are going.

- learn more about animals.

Engineering Skills

Congratulations! By playing this game, you have practiced engineering skills like

- making detailed observations about the world around you.
- considering the uses of objects and tools.
- describing different technologies that solve a problem.
- communicating ideas and discussing questions.

You can use these skills in many other situations too!