

Big Ideas

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▲ Robot fish from the Massachusetts Institute of Technology, U.S.A.

Warm Up

Talk with a partner.

1. Can you think of some important inventions? Make a list.
2. Imagine you can invent anything. What does your invention do?

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A New Building






Before You Read

A Discussion. Look at the photos of the building above. What is special about it? Discuss with a partner.

B Definitions. Match the words with their meanings.

- | | | | |
|------------|---------------|---------------|-----------|
| 1. speed | 2. shapes | 3. slow | 4. energy |
| 5. machine | 6. sound (v.) | 7. impossible | 8. human |

- _____ a.   
- _____ b. something like a computer or a car
- _____ c. When something is _____, no one can do it.
- _____ d. Every man, woman, and child is a(n) _____.
- _____ e. When things _____ good, they *seem to be* good.
- _____ f. The _____ of something is how fast it moves.
- _____ g. not fast
- _____ h. the power or strength to do things

Reading

Strategy: Scanning.

Who had the idea for this building?

The architect wants to ► build the new building in Dubai. This is the view from the top of Dubai's tallest building.



The Building That MOVES

1 Everyone knows that buildings don't move. They can't change the way they look. However, architect¹ David Fisher wants to change that.

Fisher has an amazing idea. He wants to make **80-story** buildings that change **shape**. Each floor will move around **slowly**. The floors will move at different **speeds**. Because
5 of this, the shape of the building is always changing. "These buildings will never look the same," says Fisher.

His idea is an interesting one. However, Fisher doesn't stop there. He also wants the building to be "green."² The building will make its own **energy**. In most buildings, only the top floor has a roof.³ In Fisher's building, each floor will have its own roof.
10 The roofs each have solar panels.⁴ This means a lot more solar energy. Also, **machines** between each floor of the building will catch the wind. They will turn the wind into energy.

Fisher's ideas **sound impossible**. However, that's what people also said before **humans**
15 traveled into space!

¹ An **architect** designs buildings.

² **green**: good for the environment

^{3, 4} a **roof** with ►
solar panels



Reading Comprehension

A Circle the correct answer.

Gist 1. Another title for this reading is _____.

- a. A Building for the Future
- b. The Life of an Architect
- c. How Green Buildings Work

Vocabulary 2. In line 3, **80-story** means the building has 80 _____.

- a. shapes
- b. floors
- c. different speeds

Detail 3. Fisher's building makes a lot of solar energy because the building _____.

- a. is always moving
- b. is very tall
- c. has many solar panels

Purpose 4. Why does the writer say "that's what people also said before humans traveled into space!"

- a. to show why Fisher's building will never work
- b. to show why Fisher's building is like a spaceship
- c. to show that unusual ideas can sometimes work

B Strategies: Diagram labeling. Look at the picture below. Complete the labels using words from the passage.

1. On each _____ are solar panels.

2. Each floor _____ slowly.

3. Three _____ of the building.

4. Machines turn _____ into energy.

Language Practice

A Vocabulary: Completion. Complete the sentences using a word from the box.

machines **shape** **impossible** **sounds**
energy **slowly** **humans** **speeds**

1. Bikes and cars travel at different _____.
2. Before the 1950s, only a few people knew about the _____ we now call computers.
3. The tea was heavy, so the porters carried it up the mountain very _____.
4. Solar panels can make _____ from the sun.
5. For many people, an architect's job _____ very hard.
6. Some animals can talk a little, but only _____ can use more than one language.
7. For now, living on Mars is still _____.
8. The _____ of most buildings never changes.

Usage

Sound can have two meanings.
(v.) *That **sounds** interesting.*
*Her job **sounds** fun!*
(n.) *a **loud** sound, a **noisy** sound*

B Grammar: Using *however*. Read these sentences.

- a. Fisher's ideas sound impossible, **but** that's what people also said before humans traveled into space.
- b. Fisher's ideas sound impossible. **However**, that's what people also said before humans traveled into space.

Write a second sentence to finish each idea. Use **however**.

1. The scientists told the people near the volcano to leave their homes.

2. The Great Pyramid is more than 4,000 years old.

3. Fisher's building sounds very interesting.

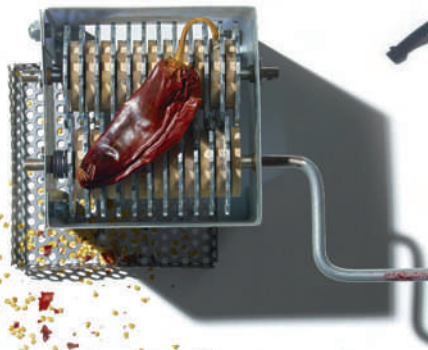
4. Many people love grizzly bears.

Big Ideas, Small Sizes



◀ This **solar-powered light** is useful for places with no electricity.

The **chili grinder** helps ► people grind hot chilies without hurting their hands.



The **baby warmer** ► is an inexpensive way of keeping babies warm.



Before You Read

A Discussion. Some good designs can help people around the world. Look at the pictures. Why are these inventions good? Talk about your ideas with a partner.

B Definitions. Match the words with their meanings.

1. probably 2. both 3. clean 4. roll 5. sick 6. easy 7. last (v.) 8. repeat



_____ b. do again

_____ c. not dirty

_____ d. When something will _____ happen, it is likely to happen.



_____ f. two things

_____ g. not hard to do

_____ h. When things _____, they don't stop or break.

Reading

Strategy: Skimming. Quickly read the passage. Who are these inventions for? Tell a partner.

- a. people without clean water
- b. people in the U.S.
- c. people with a lot of money

Making It Safe

- 1 Do you drink water every day? Is it clean? You **probably** answered yes to **both** questions. But 900 million people around the world don't have safe drinking water. Without **clean** water, they get **sick** more easily.
- 5 That's why these two ideas are so great! They can make a big difference for a lot of people.

The LifeStraw

This straw cleans water when you drink through it. It is small and **easy** to carry. You can get clean water

10 anywhere you go. It **lasts** over six months for most people. You don't have to worry about getting a new **one** often.

The Q Drum

- This new **container** helps people
- 15 carry clean water to their homes. In rural places, people often have to walk to get clean water. Then they have to carry it back to their homes. They **repeat** this every
- 20 time they need water, but water is heavy! You don't have to lift the Q Drum. You can **roll** it home. No more carrying 50 kilograms of water!



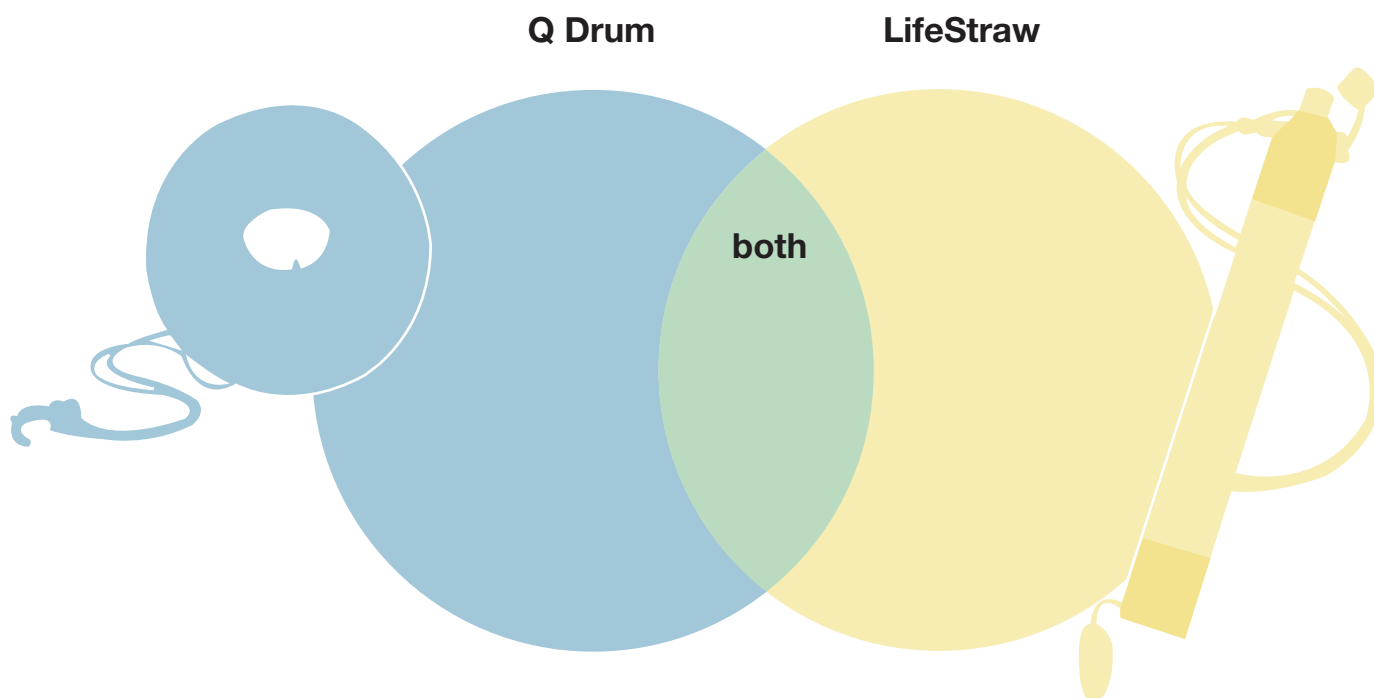
Reading Comprehension

A Circle the correct answer.

- Detail** 1. The passage says that 900 million people _____.
a. need clean water b. use the LifeStraw c. carry water to their homes
- Reference** 2. In line 12, the word **one** refers to _____.
a. a straw b. a container c. water
- Vocabulary** 3. Which of these is a **container** (line 14)?
a. a chair b. a box c. a knife
- Inference** 4. The writer probably thinks _____.
a. carrying water is very easy for most people
b. the straw is more useful than the container
c. most people don't really think about their water

B Strategy: Classification. Which invention(s) do these sentences describe. Write **a** to **f** in the correct place.

- a. It helps people have clean water. d. It is heavy, but you can roll it.
b. You can carry it. e. It helps people take water to their homes.
c. It's easy to use. f. It helps people not get sick.



Language Practice

A Vocabulary: Words in context. Share your answers with your partner.

1. What are some times when you **repeat** what someone says?

2. What are some things you can **roll**?

3. What do you think is popular now but **probably** won't be popular in a year?

4. What do you do when you are **sick**?

5. What do **both** your mother and father like to do?

6. Do you think studying English is **easy**?

7. Give an example of something that **lasts** more than a year.

8. How often do you **clean** your room?

B Grammar: *have to* / *don't have to*. Read these sentences from the passage.

- a. You **don't have to** worry about getting a new one soon.
- b. In rural places, people often **have to** walk to get clean water.
- c. Then they **have to** carry it back to their homes.
- d. You **don't have to** lift the Q Drum.

Complete each sentence using **have to** / **don't have to** so they are true for you. Compare answers with a partner.

1. I _____ walk to school every day.
2. I _____ make my own lunch every day.
3. On Sunday, I _____.
4. In my English class, we _____.

Usage

Use **have to** / **don't have to** with *I, you, we, or they*.

Use **has to** / **doesn't have to** with *he, she, or it*.



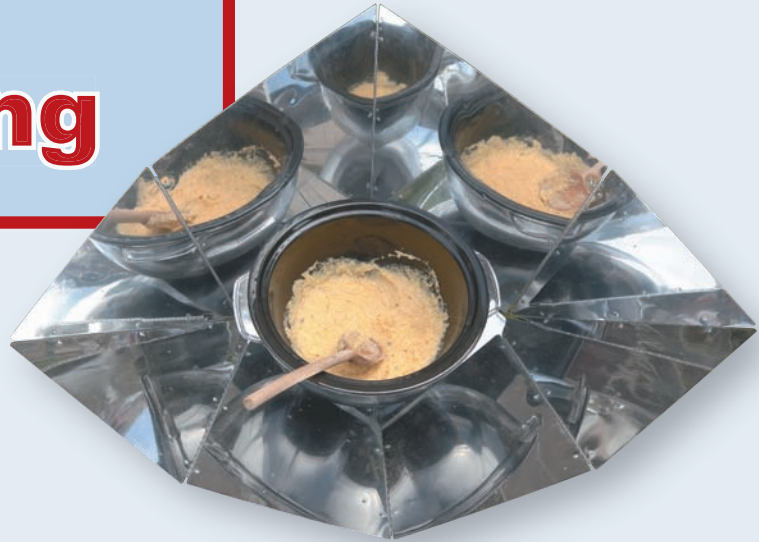
Video

Solar Cooking

A Preview. Look at the pictures and label the different ways of cooking food.

electricity
solar energy

gas
wood fire



1 _____



2 _____



3 _____



4 _____

B As you watch. Choose True (T) or False (F) for each sentence.

- | | | |
|---|---|---|
| 1. Solar cooking is both fast and cheap. | T | F |
| 2. SCI shows people how to use solar energy. | T | F |
| 3. When the WAPI's wax melts, people can drink the water. | T | F |
| 4. Before solar cookers, most of the women in the video cooked using gas. | T | F |

C Think about it. How is solar cooking better for the Earth than other ways of cooking?