

BIG QUESTION 8

What can we learn from nature's power?

UNIT 15

How many types of bad weather do you know?
Write them down.

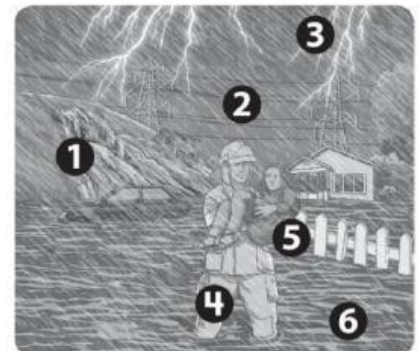
If the weather becomes very bad in your area,
what should you do?

Get Ready

Words

A Look and write.

rescue worker collapse tsunami blizzard power lines
thunderstorm tornado earthquake victim flood hurricane



B Write the words.

1 _____
2 _____
3 _____

4 _____
5 _____
6 _____

C Match.

1 During our soccer game, the ground began to move back and forth.

2 I heard yesterday that a tsunami reached the coast of China.

3 Last night a big thunderstorm went through Harold's town.

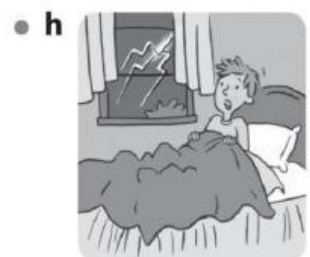
4 This spring the North River rose too high.

a The wave pushed a large amount of water onto the land, but no one was hurt.

b He couldn't sleep because the lightning in the sky was so bright. The storm also made a lot of noise.

c It caused a flood in the American town of Springfield.

d It was an earthquake! It was difficult to stand, so we all sat down on the field.



D Complete the sentences with the word pairs in the box.

power lines–collapsed rescue workers–victims tornado–blizzard

1 After the hurricane, the _____ gave food and clothing to the _____ who lost their homes in the storm.

2 The storm last night was too strong for some _____ in our city. Some of them _____.

3 Although they are both very dangerous, a _____ is more powerful than a _____.

Read

A Read the article. How does time save lives?

B Read the article again. As you read about each warning system, ask yourself, *what are the causes and what are the effects?*

Early Warning Systems

Have you ever heard a loud siren in your city? It is part of an early warning system. These systems give people time to protect themselves against different, dangerous forces of nature.

Earthquake Warning Systems

An **earthquake** can happen at any time. Some countries now have earthquake sensors. Scientists have put them in many places. When a sensor feels the ground move, it sends a signal to warn people that an earthquake will happen soon. Some signals go to moving trains so that they can stop. Other signals go to smartphones. After the signal, people have up to twenty seconds to get to a safe place and protect themselves before they feel the earthquake.

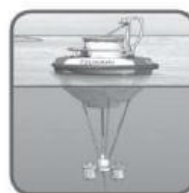


Tsunami Warning Systems

Scientists have put floating buoys on the ocean. They measure waves and water pressure. If a **tsunami** moves under them, the buoys send signals to scientists.

Think What causes a sensor to send a signal? What effects happen after it sends the signal?

The scientists then alert a country's government, and the government broadcasts a warning to people along the coast. People hear the warning through televisions, radios, smartphones, and sirens. They then have time to leave quickly and stay safe. Tsunamis can destroy whole cities on the coast, so this warning system is very important.



Hurricane Warning Systems

Scientists watch **hurricanes** grow from cameras in space. Planes and ships go near hurricanes to get information. When scientists think a hurricane might reach land, they issue a hurricane *watch*. This is broadcast through radio and television. People then prepare for it. When scientists know a hurricane will reach land soon, they issue a *warning* and people leave the area.

There are early warning systems for **tornados, thunderstorms, blizzards, and floods**, too. People receive information and act quickly. As a result, there are fewer **victims** of these forces of nature.

Think What causes the buoys to send signals? What effects happen after they send the signals?

Understand

Comprehension

A Match each cause with two effects.

Cause	First Effect	Second Effect
1 An earthquake happens.	• a It passes under buoys on the ocean. The buoys send signals.	• d People receive this <i>watch</i> or <i>warning</i> on radios and televisions.
2 A tsunami is coming toward the coast.	• b If it is not close, the government issues a <i>watch</i> . If it is close, they issue a <i>warning</i> .	• e Moving trains get the signal. People with smartphones get the signal.
3 A hurricane is moving toward land.	• c The ground moves under a sensor. It sends a signal.	• f A warning reaches people on radios, televisions, sirens, and smartphones.

B Answer the questions.

- 1 What do floating buoys on the ocean measure?

- 2 What do people do when they receive a hurricane warning?

C **Words in Context** Read and write.

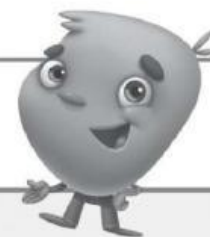
forces funnel horizontally vertically

- 1 A tornado spins _____ from the sky to the ground.
- 2 A tsunami is one of the most dangerous _____ of nature.
- 3 Hurricanes can be _____ wider than a country.
- 4 Most tornadoes are shaped like a giant _____.



D **About You** What “forces of nature” have happened in your country?

Grammar in Use



A Study the grammar.



Learn Grammar

Present Perfect with *Ever* and *Never*

Questions	Answers
Have you <i>ever</i> heard a loud siren? Have they <i>ever</i> heard a loud siren?	Yes, I have. / No, I haven't. Yes, they have. / No, they haven't.
	I've <i>never</i> heard one. They've <i>never</i> heard one.
Has she <i>ever</i> been in a storm? Has he <i>ever</i> been in a storm?	Yes, she has. / No, she hasn't. Yes, he has. / No, he hasn't.
	She's <i>never</i> been in a storm. He's <i>never</i> been in a storm.

B Cross out the underlined mistake. Write the correct word above it. Then answer the question.

Has

- 1 ~~Have~~ Patrick ever prepared for a hurricane?
- 2 Have you ever hear the sound of a tornado?
- 3 Have buildings never collapsed in this city?
- 4 Has Maria ever thank the rescue workers?
- 5 Has they ever slept through a thunderstorm?
- 6 Have hurricane ever gone through this area?
- 7 Has a tsunami never reached the coast of Hawaii?
- 8 Has these rivers ever caused a flood?
- 9 Have these buoys ever sank to the bottom?
- 10 Has you ever been a victim of a hurricane?
- 11 Did they ever walked home in a blizzard?

- Yes, he has. _____
- No, _____.
- _____, _____ haven't.
- Yes, _____.
- No, _____.
- Yes, _____.
- _____, _____ has.
- No, _____.
- _____, _____ haven't.
- Yes, _____.
- No, _____.



C Circle the correct word. Then write *ever* in the correct position in the sentence.

- 1 **Have** / **Has** ^{ever} anyone survived outside in a blizzard?
- 2 Have earthquakes **happened** / **happen** in Greenland?
- 3 **Has** / **Have** those power lines collapsed during a hurricane?
- 4 Have rescue workers in this city **help** / **helped** you?

D Unscramble the questions. Then match.

- 1 flood / been / Have / a / ever / you / in

- 2 tower / this / lightning / Has / ever / struck

- 3 systems / warning / ever / Have / failed / early



☐ No, they haven't.

☐ Yes, I have.

☐ Yes, it has.

E Read. Then answer each question. Use *never* when necessary.

- 1 Has Tom ever been in a flood? (X)
No, Tom has never been in a flood.
- 2 Have hurricanes ever occurred in tropical areas? (✓)

- 3 Has Kelly ever felt an earthquake? (X)

- 4 Have they ever experienced a blizzard? (X)

Communicate

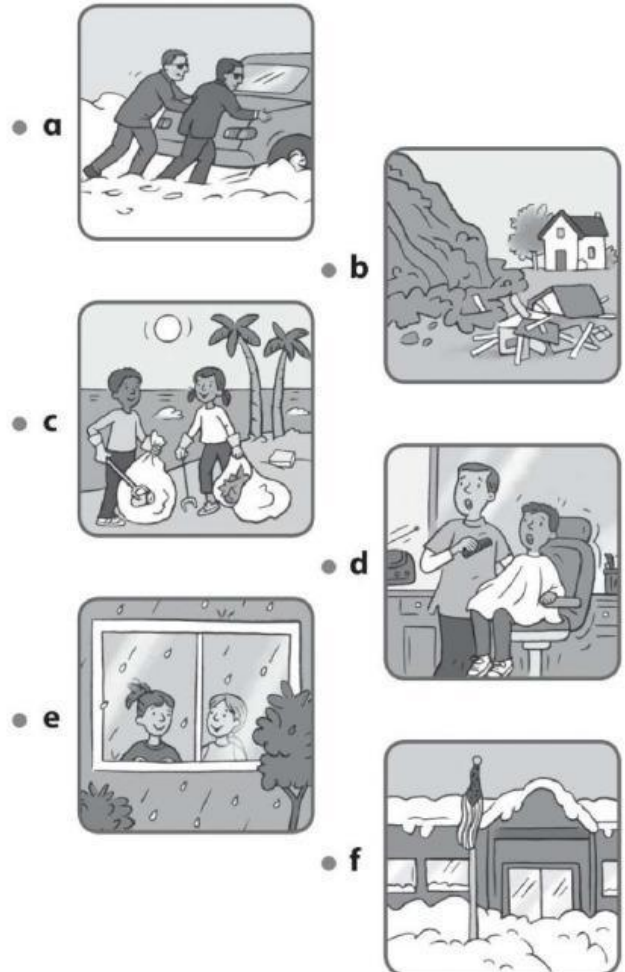
Word Study

snowfall haircut teamwork raindrop landslide bodyguard

A Z

A Circle the noun and underline the verb in each compound noun. Then match.

- 1 During the storm, some of the raindrops that fell were the size of small oval coins. •
- 2 The singer's car got stuck in a blizzard, but her bodyguards pushed it out of the snow. •
- 3 When the ground started to shake yesterday, my barber was giving me a haircut. •
- 4 The landslide happened during the hurricane, but luckily only a small shed was destroyed. •
- 5 We had a large snowfall in our town last night, so the school was closed today. •
- 6 Thanks to some great teamwork, the students were able to quickly clean up the beach after the hurricane. •



B Complete the sentences with the words from the box above.

- 1 The _____ during the blizzard was over one meter deep.
- 2 The hurricane loosened the ground on the mountain and caused a _____.
- 3 The citizens showed _____ by cleaning the streets after the thunderstorm.
- 4 The president's _____ helped him get under a table during the earthquake.
- 5 The blizzard blocked the roads, so Pam couldn't get a _____ at the salon.
- 6 Not one _____ fell from the sky before the tornado appeared.

Writing Study

A Rewrite the sentences using short forms.

- 1 They have experienced many earthquakes in their country.

They've experienced many
earthquakes in their country.

- 2 I have never been in a hurricane because I live far from the ocean.

- 3 She has met many rescue workers in her job.

- 4 The tsunami was powerful. It has damaged many coastal towns.

- 5 We have cleaned up the area where the power lines collapsed.



B Write a paragraph about a force of nature that you have experienced.

Read the example below. Write at least one present perfect question with **ever**. Be sure to use short forms in your present perfect sentences.

Have you ever been in a blizzard? I live in central Canada, and we have lots of them. **I've** shoveled up to one meter of snow to get from our house to our car. My dad has driven in blizzards, too. However, **he's** never been stuck in the snow.
