

Extreme Weather

In this unit, I will . . .

- talk about different kinds of extreme weather.
- describe the damage storms can cause.
- describe how to prepare for extreme weather.
- write a personal narrative.

Check **T** for *True* and **F** for *False*.

1. There's a storm cloud in the sky. T F
2. The trees are covered in ice. T F
3. It's raining heavily. T F
4. It's safe to be outside. T F

Supercell thunderstorm,
Colorado, USA

VOCABULARY 1

1 Listen and read. TR: 1.1

2 Listen and repeat. TR: 1.2

We know we can't control the weather. It can be beautiful, wild, and dangerous, often all at the same time. Scientists try to predict weather in different ways. They tell us when extreme weather is coming. Then we can try to protect ourselves.

Thunderstorms bring heavy rain with loud **thunder** and **lightning**. If too much rain falls in a short time, it can cause a **flood**. Too little rain makes the land dry and can cause a **drought**. When it's very cold, a rainstorm can turn into an **ice storm** or a **blizzard**.

lightning

Grand Canyon, USA



a hurricane

Wind is a dangerous force. In a **tropical storm**, the wind **speed** can be more than 100 kilometers (60 miles) per hour. Wind in a **hurricane**, or cyclone, is even faster.

We can only live within a specific **range** of temperatures. At times, temperatures **rise** too high or **drop** too low. It not only feels bad, it can be dangerous! In a **heat wave**, the weather stays very hot for days or even weeks.

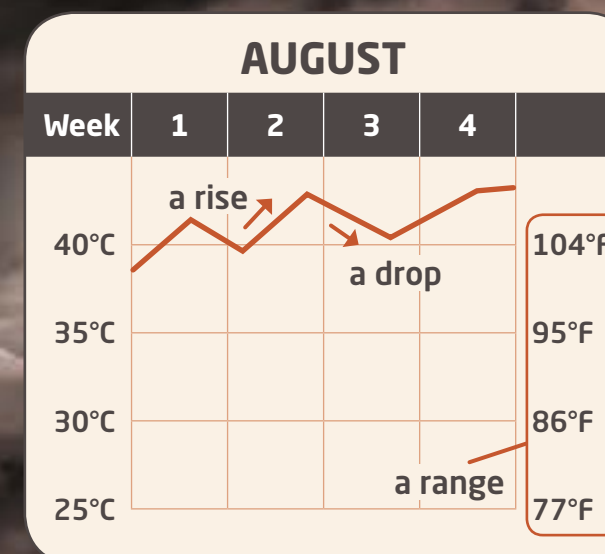
3 Ask and answer.

Work with a partner.
What did you learn?



a sandstorm

High winds in dry places such as deserts can pick up sand and cause a **sandstorm**. A **tornado** is a column of wind that rotates very fast.



When the weather is hot, can it be dangerous?

Yes, it can. It can cause a heatwave.

SONG

1 Listen, read, and sing. TR: 1.3

Bad Weather

There's bad weather on the way!
There's bad weather on the way!

Is it going to storm? Yes, it is!
Is there going to be lightning? Yes, there is!
Is there going to be thunder? Yes, there is!

When there's going to be a storm, I hurry inside!

CHORUS

**Be prepared for emergencies.
It's always good to be safe. You'll see!
Grab supplies and a flashlight, too.
Seek shelter. It's the safe thing to do!**

Is there going to be a blizzard? Yes, there is!
Is there going to be an ice storm? Yes, there is!
Is it going to be cold? Oh, yes it is!
If there's going to be a blizzard, I hurry inside!

CHORUS

Is there going to be a hurricane? Yes, there is!
Is the wind going to howl? Yes, it is!
Are the waves going to rage? Yes, they are!
If there's going to be a hurricane, we evacuate!

CHORUS

Seek shelter. It's the safe thing to do!

2 Ask and answer. Work with a partner.

1. What bad storm in your town do you remember?
2. What did you do to prepare?
3. What did you think and feel during the storm?



The Netherlands

GRAMMAR 1

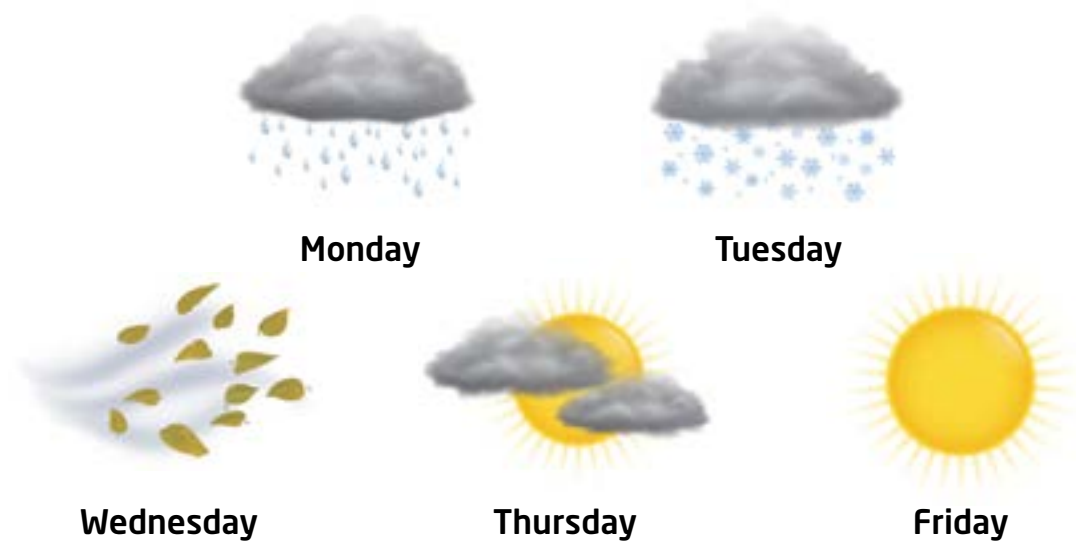
Future predictions and plans with *be going to* TR: 1.4

Is it **going to** rain tomorrow? No, it's **going to** snow tomorrow.

I'm **going to** listen to the weather report at 8:00.

He's **going to** put on his snow boots.

1 Write. What is the weather going to be like?



1. *It's going to rain on Monday.*
2. _____
3. _____
4. _____
5. _____

2 Ask and answer. Read. Take turns.

1. Why can't we go to the park tomorrow? (rain)
2. Won't she get wet walking in the rain? (take an umbrella)
3. Why is she closing the windows? (rain)
4. When is he going to get a new raincoat? (today)

3 Write. What are you going to do?

A thunderstorm is coming. _____

A heat wave is coming. _____

A hurricane is coming. _____

4 Ask and answer. Work with a partner. What about you? Talk about today and tomorrow.

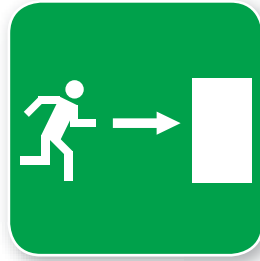


VOCABULARY 2

1 Listen and repeat. Then read and write. TR: 1.5



a plan



evacuate



an emergency



supplies



a shelter



a flashlight

When a weather forecaster predicts bad weather, you can make a _____ to prepare. To protect yourself from wind and rain, you should go to a _____. If the electricity goes off, use a _____ to see in the dark. You can store _____ in a safe place so that you have food to eat. A really bad storm can affect the whole town. In an _____ like that, people have to _____ and go where it's safer.

2 Listen and stick. Find out what to do next. Place your stickers in the correct order. Work with a partner. Summarize the weather report. TR: 1.6

A hurricane is coming. It's an emergency.

Yes, I put emergency in number 1. That's correct.

1

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2

3

4

5

GRAMMAR 2

Zero conditional (present tense) TR: 1.7

I **put on** my winter coat **if** the weather **is** cold.
If I **see** lightning, I **go** inside.
If a sandstorm **comes**, I **close** all the windows.

1 Match and make logical sentences. What do you do in these situations? Write five sentences of your own in your notebook.

If I see lightning when I'm swimming,

I look for a boat.

If it rains,

I wear gloves and boots.

If a storm comes,

I try to stay cool.

If the temperature rises,

I get out of the water.

If a flood comes,

I go inside the house.

If it snows,

I use an umbrella.

2 Play a game. Cut out the cards in the back of the book. Play with a partner. Take turns. Match and make sentences. Keep the cards.



READING

1 Listen and read. TR: 1.8

Tornado Trouble

Tornadoes happen all over the world. There's even a place called Tornado Alley. Josh Wurman studies extreme weather. He joined a team of other scientists to study tornadoes in Tornado Alley. One day, the blue sky turned black. A giant cloud came toward the team. The cloud had winds that moved in a circle. Inside his truck, Wurman watched the storm through his window and on his instruments. Colors on the computer screen showed where the rain fell and where the wind was the strongest.

The winds twisted the storm tighter and tighter into the shape of a funnel. When the funnel touched the ground, it became a tornado! The tornado looked like a giant, gray elephant's trunk. It moved one way, then another way. As the tornado moved across the ground, the team came dangerously close. They dropped special instruments close to the storm. These instruments showed wind speed, temperature, and how much rain was falling.

The tornado twisted and moved for half an hour. The team watched the storm and their instruments the whole time. Then the tornado leaned over slowly like a soft rope. Poof! It was gone. The excitement was over. But Wurman and his team have a lot more work to do. The information from their instruments will help them predict other tornadoes so that they can warn people and save lives.



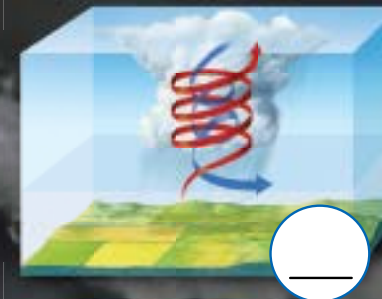
It once rained frogs on a town in Serbia. A small tornado dropped them there.

2 Discuss. Work in groups of three. Answer the questions.

1. What is the shape of a tornado?
2. Where does a funnel touch to become a tornado?
3. Why do scientists study tornadoes?
4. What do scientists use to learn about tornadoes?

3 Match. Work with a partner. How does a tornado form? Match the text to each step. Discuss.

- a. Warm and cold air currents twist winds into a funnel. Then the funnel touches the ground.
- b. Warm air and cold air come together. They make a twisting wind of air that moves in circles.
- c. The twisting air stands up. Warm air moves up. Cold air moves down.



4 Work with a group. Compare tornadoes and hurricanes. Discuss. Complete the chart.

Tornado	Hurricane
	<p><i>Origin: They form over water.</i></p> <p><i>Duration: They last a week.</i></p>



WRITING

Personal Narrative When you write a personal narrative, you tell a story. You want the reader to feel like he or she is there. To do this you can use descriptive language that uses the senses—sight, sound, taste, smell, and touch. To express the sequence of events you can use time expressions such as *after*, *before*, *next*, and *then*.

- 1 Read.** Read the personal narrative. How does the writer describe the hurricane? How does the writer describe what she hears and sees? How does she feel? Circle the words that relate to the senses and emotions. Underline the words and expressions that show the sequence of events.

Safe not Sorry!

If a hurricane comes, we know what to do. We have a family plan.

Last year, the weather forecaster told us that a hurricane was coming. First, I helped my dad put heavy wood over the windows. It was hard work. Next we went inside the house and turned on the radio to listen for news about the hurricane. When the hurricane came, we could hear the strong winds outside. It was scary. The rain came down hard on the roof too. Then, suddenly, there was a loud crash. The whole house shook! Everyone was worried. What was it? Soon it was quiet and we could go outside. We saw a huge tree on the ground. Part of the tree hit the wood on the window.

I am so happy we had a family plan! Hopefully there isn't going to be a hurricane for a while.



- 2 Write.** Write about an extreme weather experience. Give details using the senses. Help the reader feel what you felt.
- 3 Share.** Share your writing. Work in a small group. Listen and take notes.

MISSION

Understand weather.

Think. Pair. Share.

- What can you do in dangerous weather?
- What can you do to find out more about extreme weather?
- Why is it important to understand weather?

Dead camel thorn trees, Namibia



“It all started when I was about six years old and saw that fantastic tornado in *The Wizard of Oz*.”

Tim Samaras (1957-2013), Severe Storm Researcher,
National Geographic Explorer

PROJECT

Make your own tornado.

- 1 Work in small groups to make a tornado in a bottle.
- 2 You need a glass jar or bottle, some water, some dishwashing liquid, and some glitter.



- 3 Pour water into the bottle, about three-quarters full. Then add a small amount of dishwashing liquid.
- 4 Add a little glitter.
- 5 Put on the lid tightly.
- 6 Then, shake the bottle around in a circle and watch your tornado!



If I shake the jar around, the glitter looks like a tornado.

Now I can . . .

- talk about different kinds of extreme weather.
- describe the damage storms can cause.
- describe how to prepare for extreme weather.
- write a personal narrative.

1 Listen and read. TR: 3.9

Animal Predictions?

Have you ever heard that animals can sense weather? Many people tell stories about this, but is this true? Some scientists say that it might be. We're going to look at a few examples.

Many people who have dogs know about their behavior. They can see when dogs are more nervous than usual. One example is Champ, an 11 year old dog who went down to the basement and wouldn't come out. His family knew he was scared. They looked at the sky and saw a tornado coming. So they took shelter in the basement, too. The tornado destroyed their house but they were safe in the basement with Champ. Dogs can hear low sounds, feel changes in air pressure, and smell better than people. So they can often help tell when a storm is coming.

Birds often change their movements before a storm. Golden winged warblers are birds that migrate from Latin America to North America. In 2014, scientists studying migration noticed that the birds weren't in the state of Tennessee at the right time. In fact, they flew 1,500 kilometers (900 miles) more to avoid a huge storm. It is possible they heard the low sounds from the thunder. They returned to Tennessee a few days later.

Have you ever heard that some species can predict earthquakes and tsunamis? Elephants are very good at this. Their big feet can feel vibrations in the ground. In the 2004 tsunami in Thailand, elephants escaped up the hills before the sea water flooded the beaches. They probably felt early vibrations of the earthquake that caused the tsunami.

With time, we will understand more about animals and how they react. The next time the weather forecast says a storm is coming, watch the animals around you. Are they predicting it too?

Nebraska, USA

2 Read. Check T for *True* and F for *False*.

1. We know a lot about elephants because many people live with them. T F
2. Scientists were studying bird migration when they discovered that the birds predicted the weather. T F
3. Champ, the dog, wasn't disturbed by the storm. T F
4. Storms can make low sounds that humans can't hear. T F

3 Read. What helps these animals predict storms? Work with a partner and complete the table.

Dog	Bird	Elephant

4 Express yourself. Choose an activity.

1. Pretend you are a scientist observing one of the animals in the text. Write down your observations.
2. What other stories have you heard of animals sensing storms or other weather events? Write a short paragraph about it.
3. How do *you* know the weather is changing? Can you think of signs? Complete the table and then discuss with a partner.

Tornado	Hurricane	Earthquake	Tsunami