

Connect Across Texts Now read this article to find out why some changes in nature happen.

Genre A **science article** is nonfiction. It can tell how something in nature works. It might also have an **experiment** you can try to see how things work.

Day and Night

by Glen Phelan



▲ Earth spins on an imaginary line. It is called an axis. This diagram shows how.

Around and Around

The **planet** we live on seems to **stand still**, yet **Earth** is always moving. It rotates, or spins, around and around. You cannot feel Earth rotate because you are moving along with it.

In Other Words

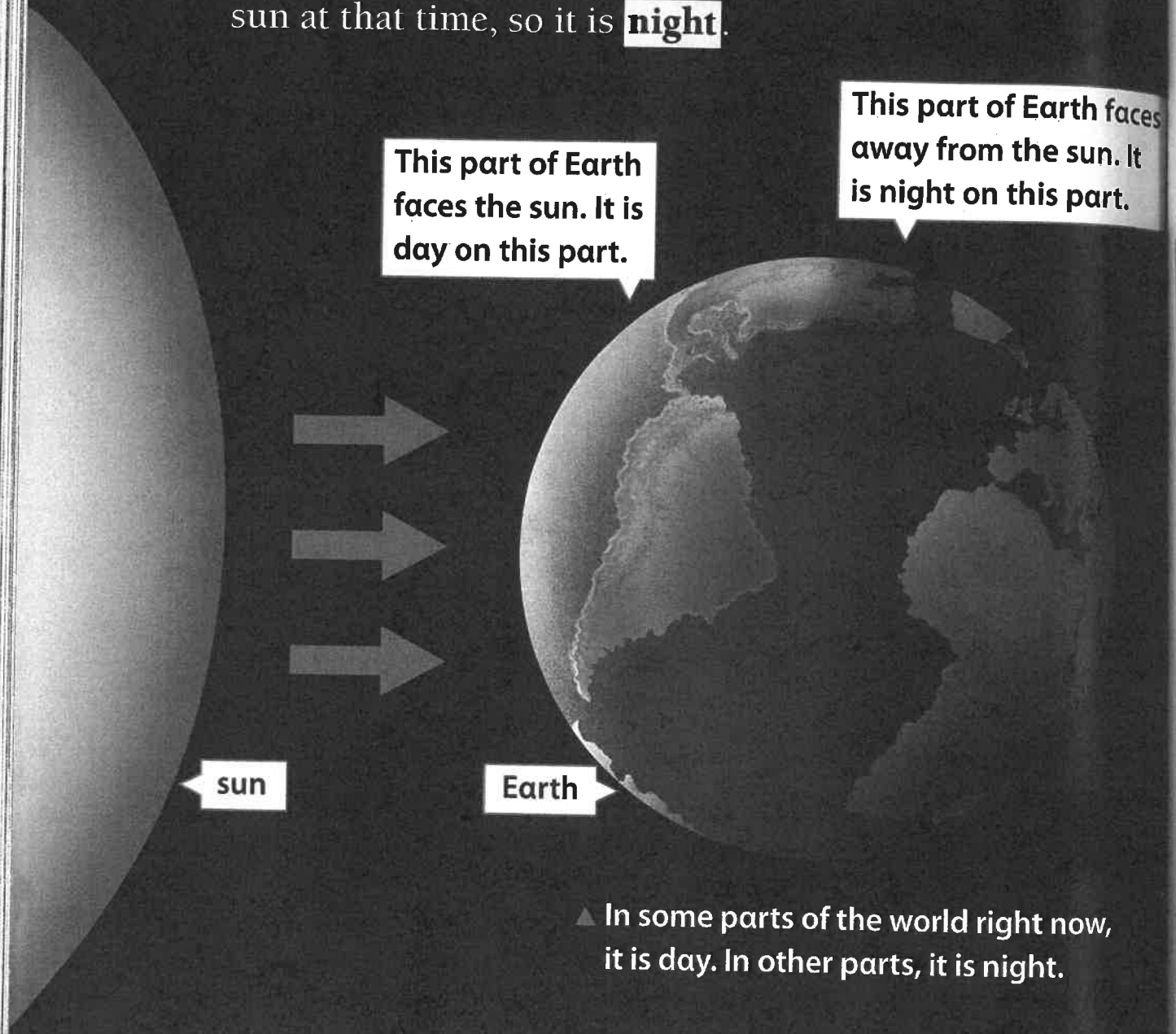
planet world
stand still not move
imaginary pretend

► Before You Move On

1. **Use Text Features** How does the diagram help you understand the way **Earth** spins?
2. **Clarify** Why does it seem like Earth is standing still even though the planet is really moving?

Earth and the Sun

Because Earth spins, only one part can **face** the sun at a time. When the sun reaches the part facing it, it makes **day**. The other part of Earth **doesn't** get any sun at that time, so it is **night**.

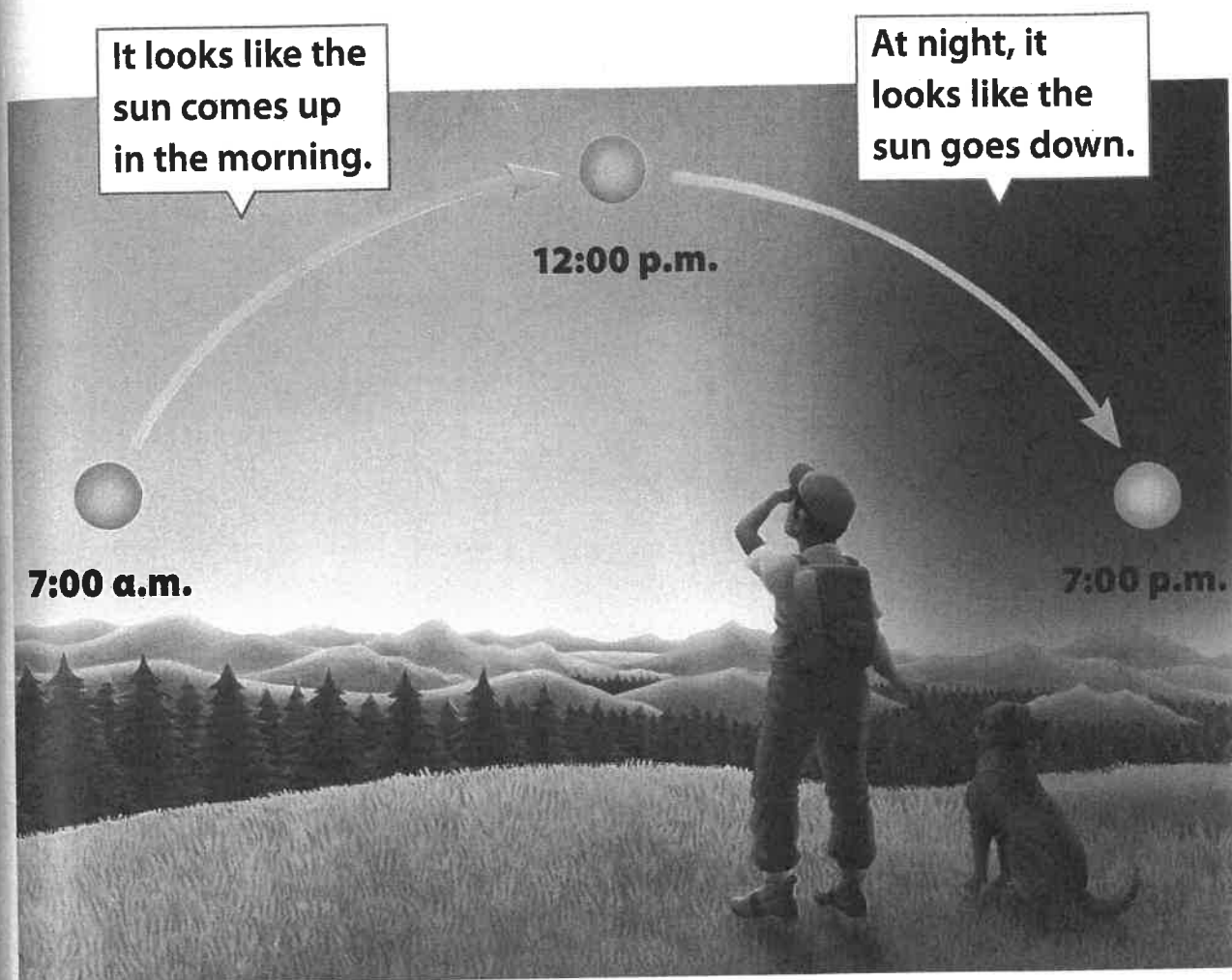


▲ In some parts of the world right now, it is day. In other parts, it is night.

In Other Words
face turn toward
doesn't does not

Sunrise and Sunset

From Earth, it looks like the sun moves across the sky. But the sun does not move. Earth moves. When Earth starts to face the sun, the sun looks like it **rises** into the sky. When Earth starts to turn away from the sun, the sun looks like it goes down.



▲ As Earth spins, it looks like the sun moves across the sky.

In Other Words

Sunrise When the Sun Comes Up

Sunset When the Sun Goes Down

rises goes up

► Before You Move On

1. **Visualize** Point to a spot on land in the diagram. Move your finger up. Describe how the sky looks at that time.
2. **Explain** Why does it look like the sun is moving down in the sky at sunset?

From Day to Night: An Experiment

Try this experiment to see how day turns to night.
You will need:

- a partner
- a flashlight
- a ball

1. PARTNER 1 holds the ball.
2. PARTNER 2 shines the flashlight on the ball.
3. PARTNER 2 asks someone to turn off the classroom lights.
4. PARTNER 1 slowly rotates the ball as PARTNER 2 shines the light on it.

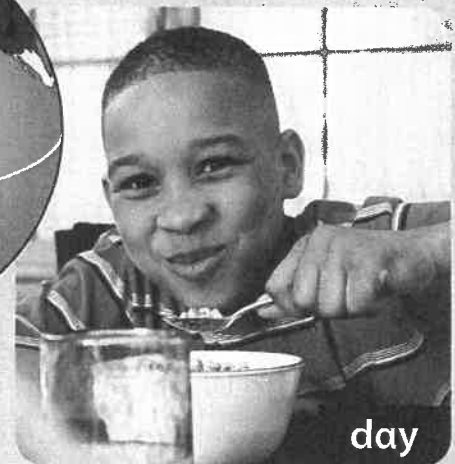
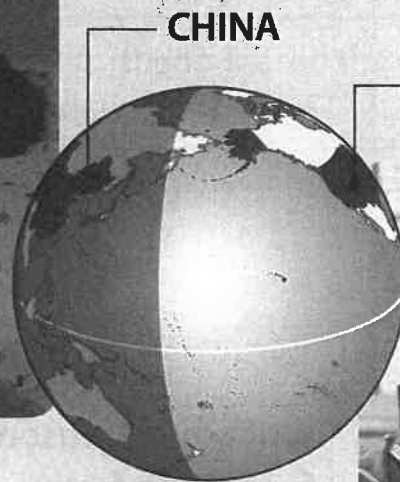


PARTNER 1

PARTNER 2

What Happens?

Light shines on different parts of the ball as it turns. Now pretend the ball is Earth and the flashlight is the sun. When one part of Earth faces the sun, it is daytime. When it turns away from the sun, it is night. So when day begins on your side of the world, night begins for someone on the other side!



In China, it is night. But in the United States, it is day.

► Before You Move On

1. **Clarify** How does the experiment help you understand **day** and **night**?
2. **Use Text Features** What helps you know what to do in the experiment?

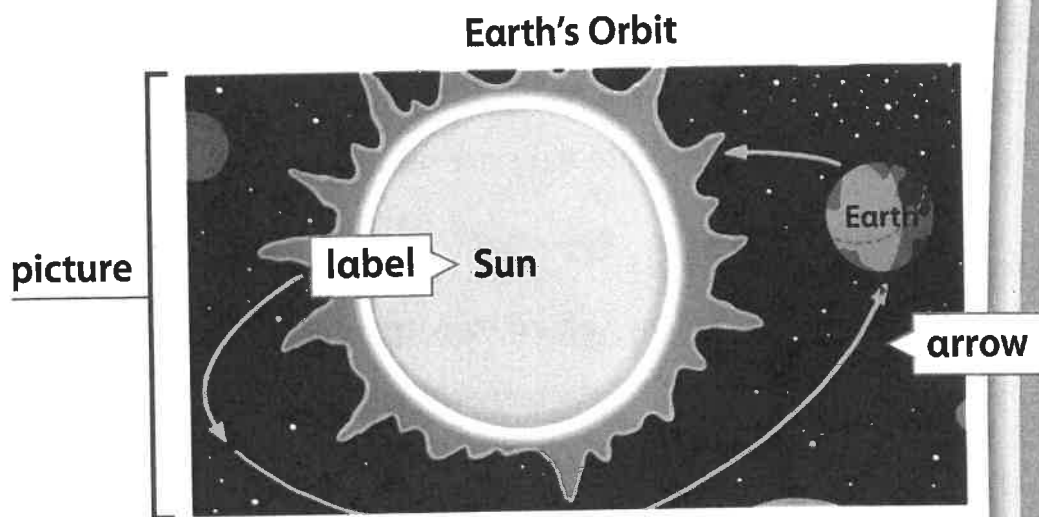
Read a Poem

Genre

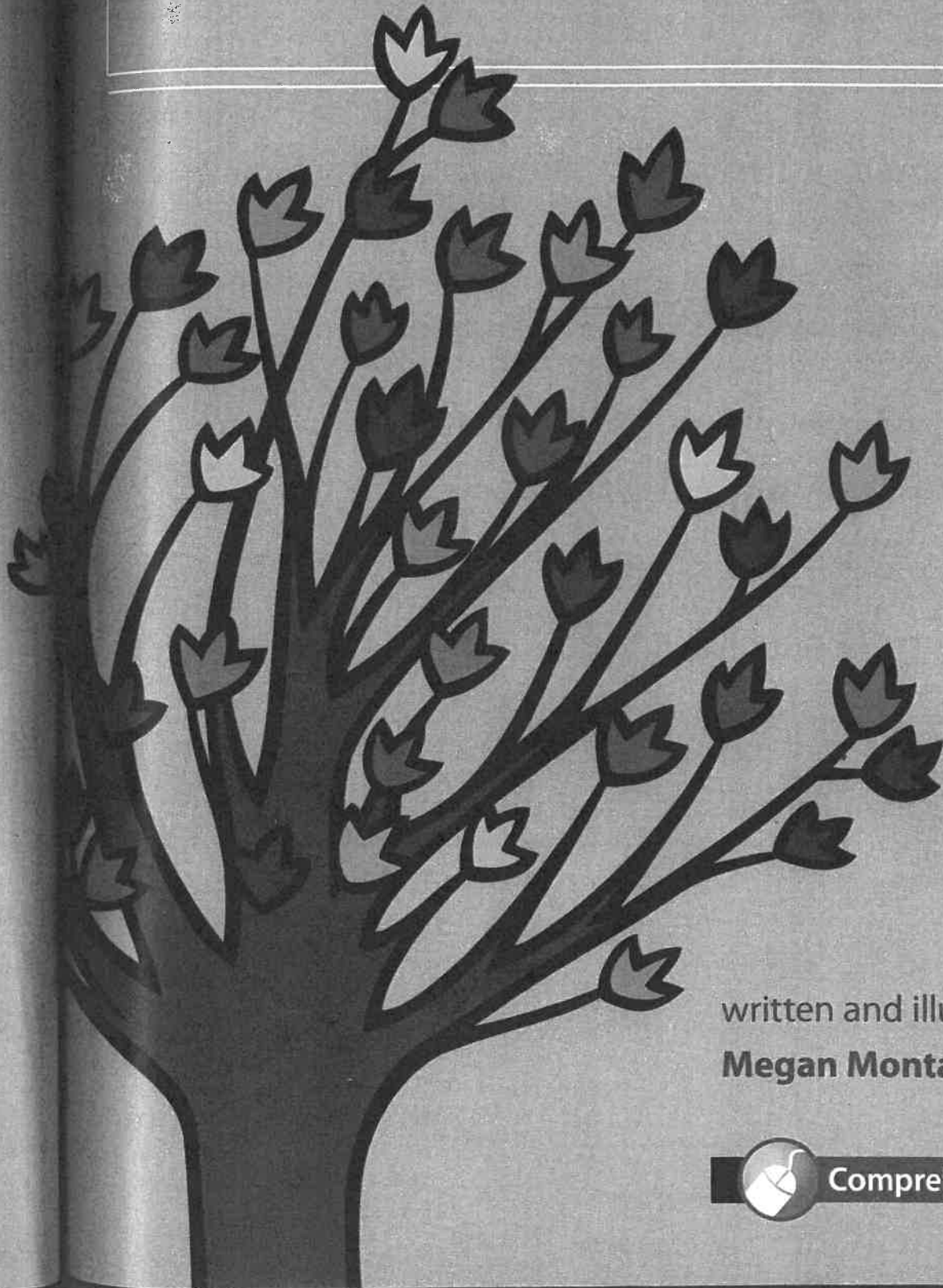
A **poem** uses words in a special way to tell about ideas. This poem gives facts about the seasons.

Text Features

A **diagram** uses pictures, arrows, and labels to show how something works.



What Makes the Seasons?



written and illustrated by
Megan Montague Cash



Comprehension Coach

► **Set a Purpose**

Find out what **happens** when the **seasons** change.



**The day began with sprinkling rain
tapping at the windowpane.**

Rain has turned the sky to gray.

Our snowman friend has gone away.

Fresh green leaves are peeking out.

What makes this their time to sprout?

In Other Words

tapping at the windowpane hitting against
the window

sprout begin to grow



Antonyms

Antonyms are words with opposite meanings. Look at the pictures below. Read the antonyms. Then compare their meanings.



begin: When something starts, it **begins**.

Day begins at sunrise.



end: When something stops, it **ends**.

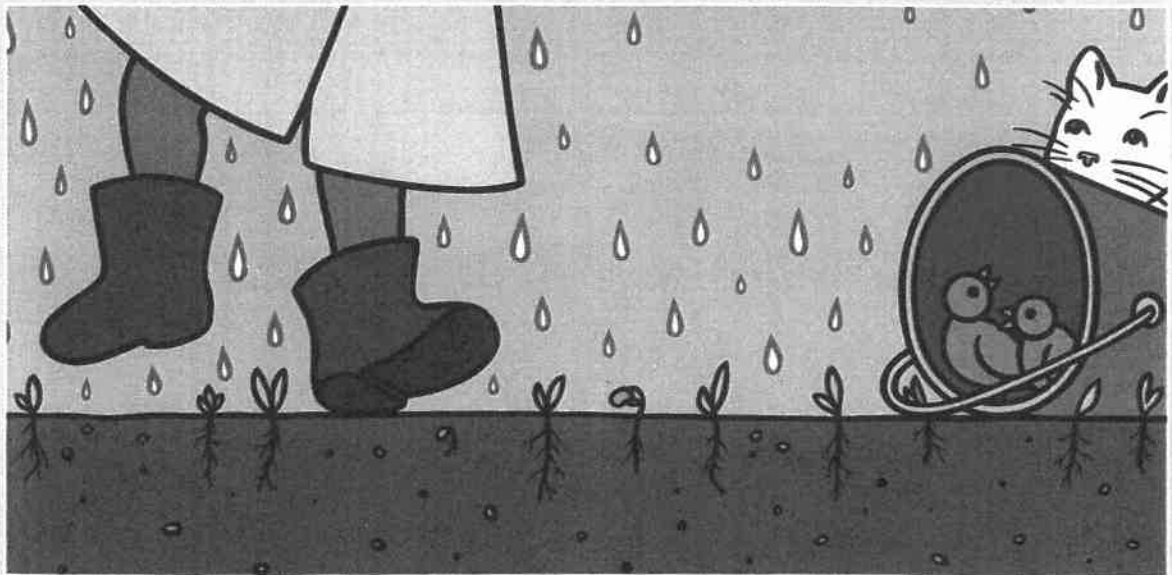
Day ends at sunset.

Try It Together

Read the passage from "When the Wind Stops." Then answer the questions.

**Spring's mild weather wakes the seeds,
bringing showers each seed needs.**

**Spring was here but couldn't stay.
Spring left on a summer day.**

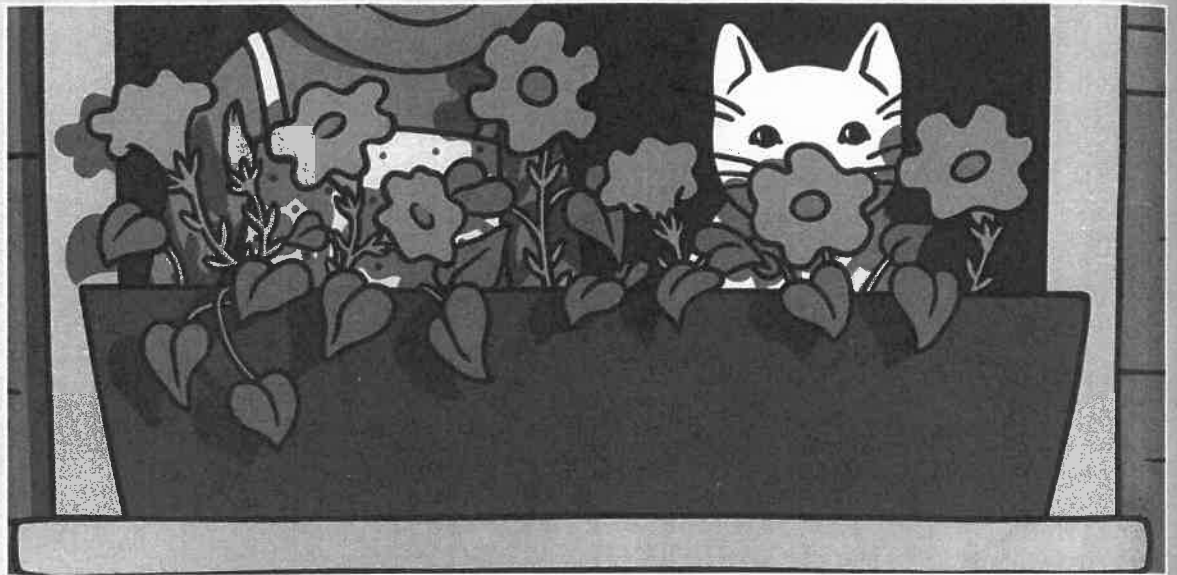


In Other Words

mild warm and wet

wakes the seeds gets the seeds ready to grow

showers rain



**Plants that once were hardly there
now have flowers everywhere.**

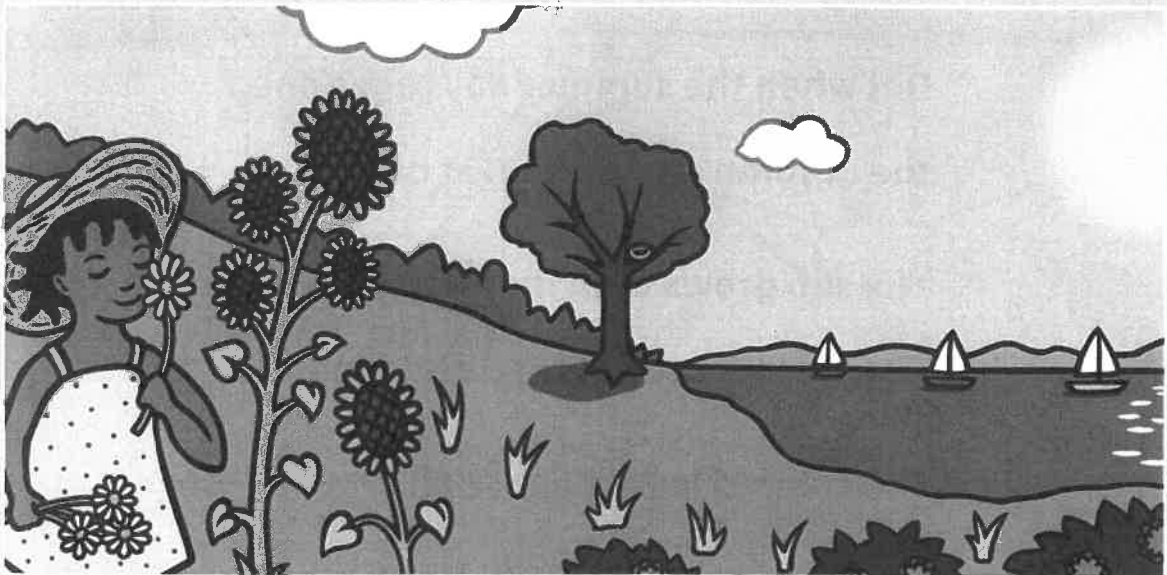
**Each tree and weed and lima bean
shows its favorite shade of green.**

In Other Words
hardly there very small
shade kind

Why is this a growing season?

Plants grow tall, but what's the reason?

**Plants grow best in summer light,
when days are long and warm and bright.**



In Other Words

what's the reason why do the
plants grow tall

► Before You Move On

- 1. Details** What **happens** in **spring**?
What **happens** in **summer**?
- 2. Visualize** Look at the pictures. Tell
how **summer** feels, looks, and smells.

► **Predict**

What will **happen** when the **summer** is over?



**But when the summer days are done,
the autumn days have just begun.**

**The sun grows dim, the wind blows cold.
Green leaves turn to red and gold.**

**The colored leaves dance all around.
But why do leaves fall to the ground?**

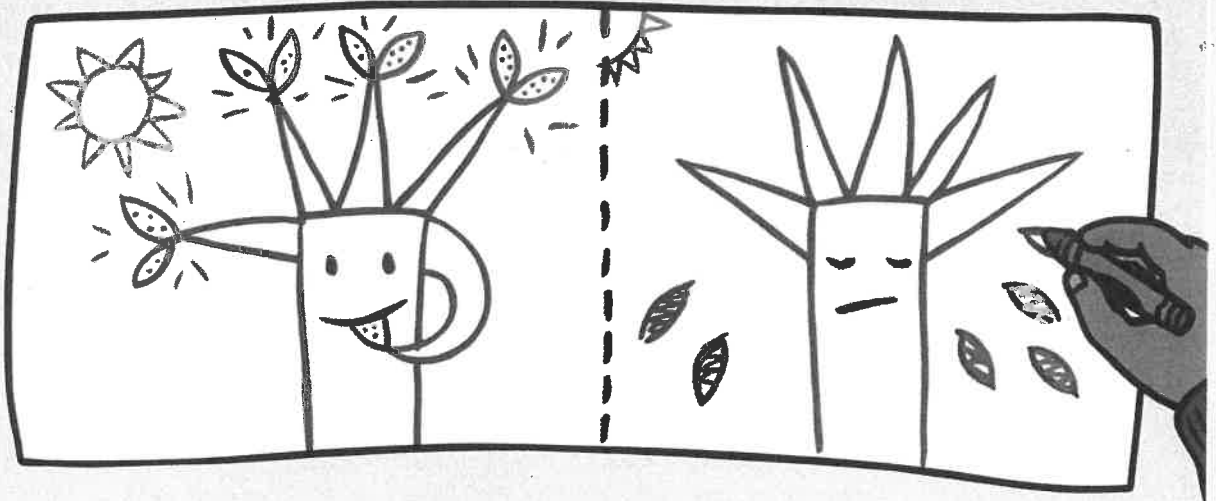
In Other Words

grows dim is not as bright
dance all around move in
the wind

**In all the leaves on all the trees
are teeny tree food factories.**

Leaves use sun to make the food.

When there's less sun, leaves come unglued.



In Other Words

teeny tree food factories small parts that
make food for the tree

come **unglued** fall from the tree



The weather brought a change last night.

Winter turned the world to white.

Puffy flakes swirled high and low.

Snow makes flurries. What makes snow?

In chilly clouds the raindrops freeze.

It's one of winter's recipes.

In Other Words

flurries snowflakes that blow around in the wind

freeze turn cold and hard

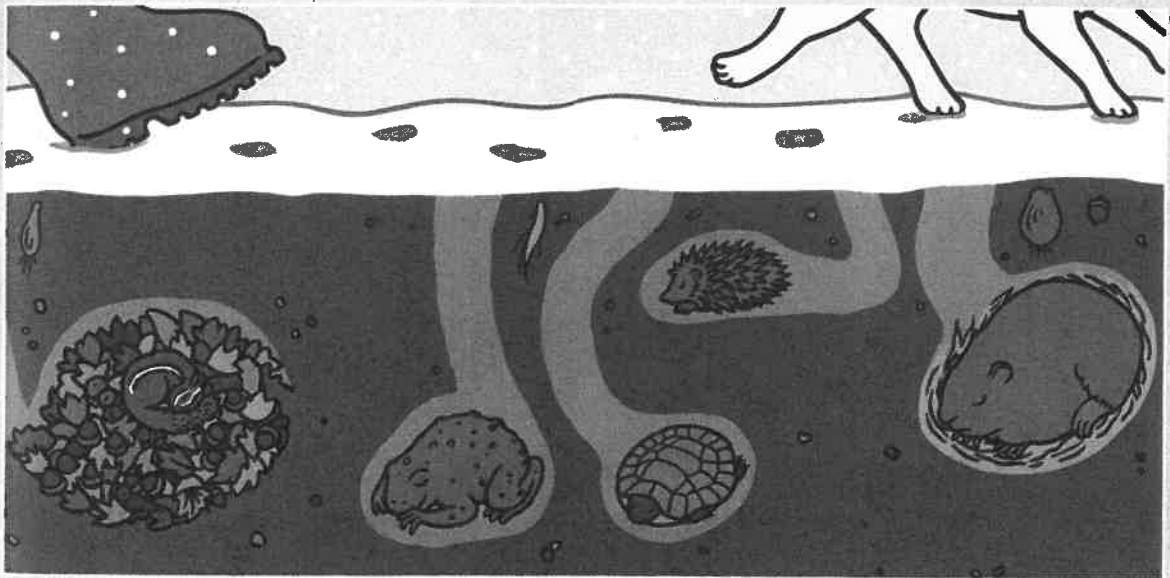
It's one of winter's recipes. It is something that **happens** in **winter**.

Winter is a time for sleep.

Trees are resting. Seeds will keep.

Many creatures sleep and wait.

Winter's time to hibernate.



In Other Words

creatures animals and insects

Winter's **Winter** is

hibernate sleep until spring comes again

► Before You Move On

- 1. Confirm Prediction** What **happens** in the poem when **summer** is over? Was your prediction correct?
- 2. Visualize** Think about the snowflakes. Which words in the poem help you picture and feel them?

► **Predict**

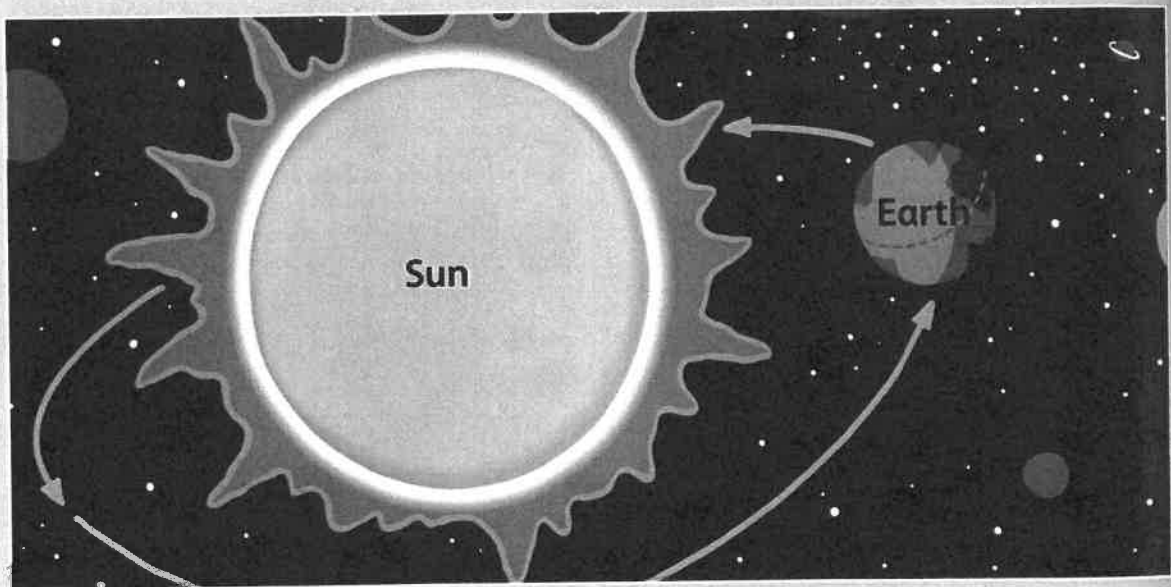
Look at the diagram below. What causes the **seasons** to change?

But what controls the season's change?

And what makes weather rearrange?

**Earth's yearly trip around the sun
affects the seasons one by one.**

Earth's Orbit



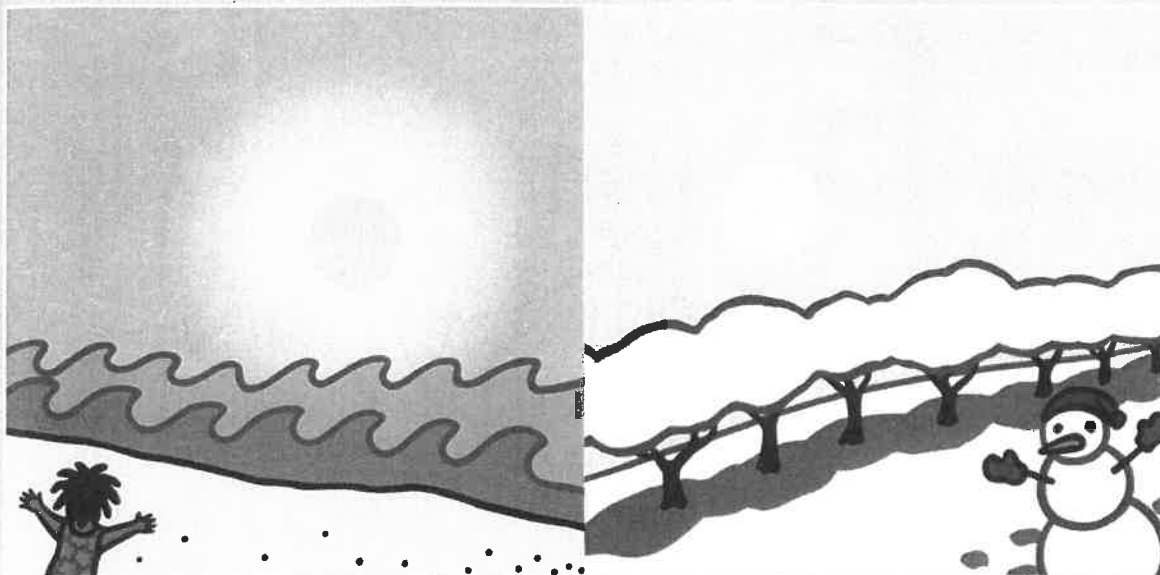
▲ **Earth takes a whole year to move around the sun.**

In Other Words

controls makes; causes

rearrange change from **season** to **season**

Orbit Path Around the Sun



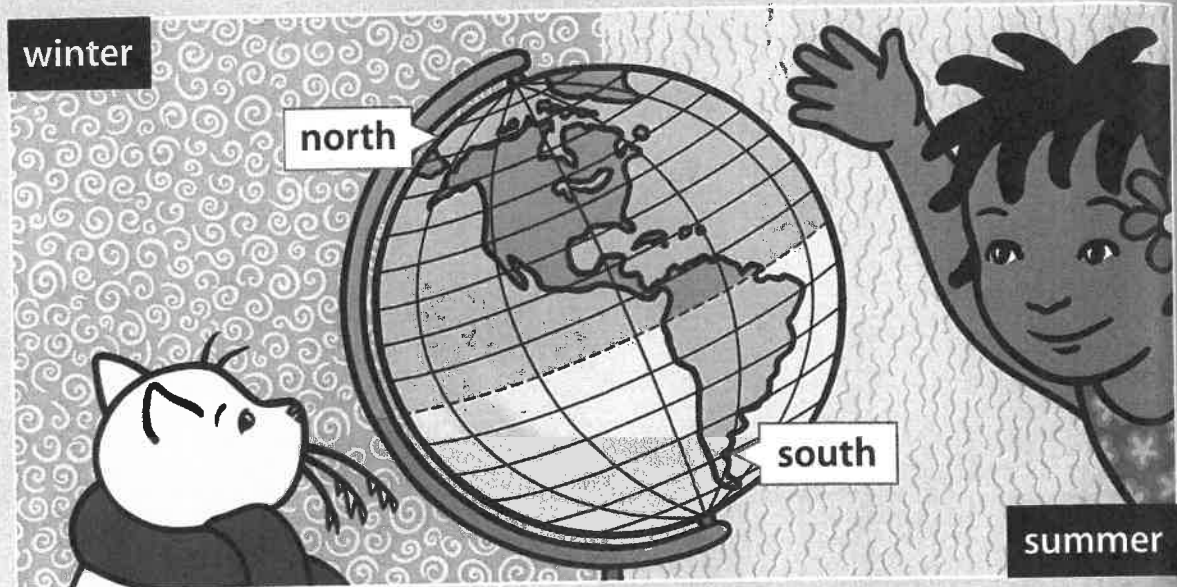
**In summer when the days are long
the sun shines down both hot and strong.**

**While winter has the shortest days —
less time for Earth to get warm rays.**

In Other Words
warm rays sunshine

o season

Earth's Hemispheres



**But when you have a summer day,
it's winter half the world away.**

**If summer blossoms open wide,
it's winter on Earth's other side.**

In Other Words

Earth's Hemispheres The Two Main
Parts of Earth

half the world away on the other side
of Earth

blossoms flowers

Seasons change four times a year.

When each one ends, the next one's here.

Enjoying changes one by one

makes the seasons so much fun.



In Other Words

the next one's here another
season begins

► Before You Move On

- 1. Confirm Prediction** What causes the **seasons** to change?
- 2. Make Comparisons** Find words in the poem about how **summer** and **winter** are different. Describe each season to a partner.

A Winter Wonder

by *Tyrone Hayes, PhD*

Hi! My name is Dr. Tyrone Hayes. I **study** frogs and toads. I work in a **lab** and sometimes in muddy ponds.

Dr. Tyrone Hayes studies frogs and toads. ►

In Other Words

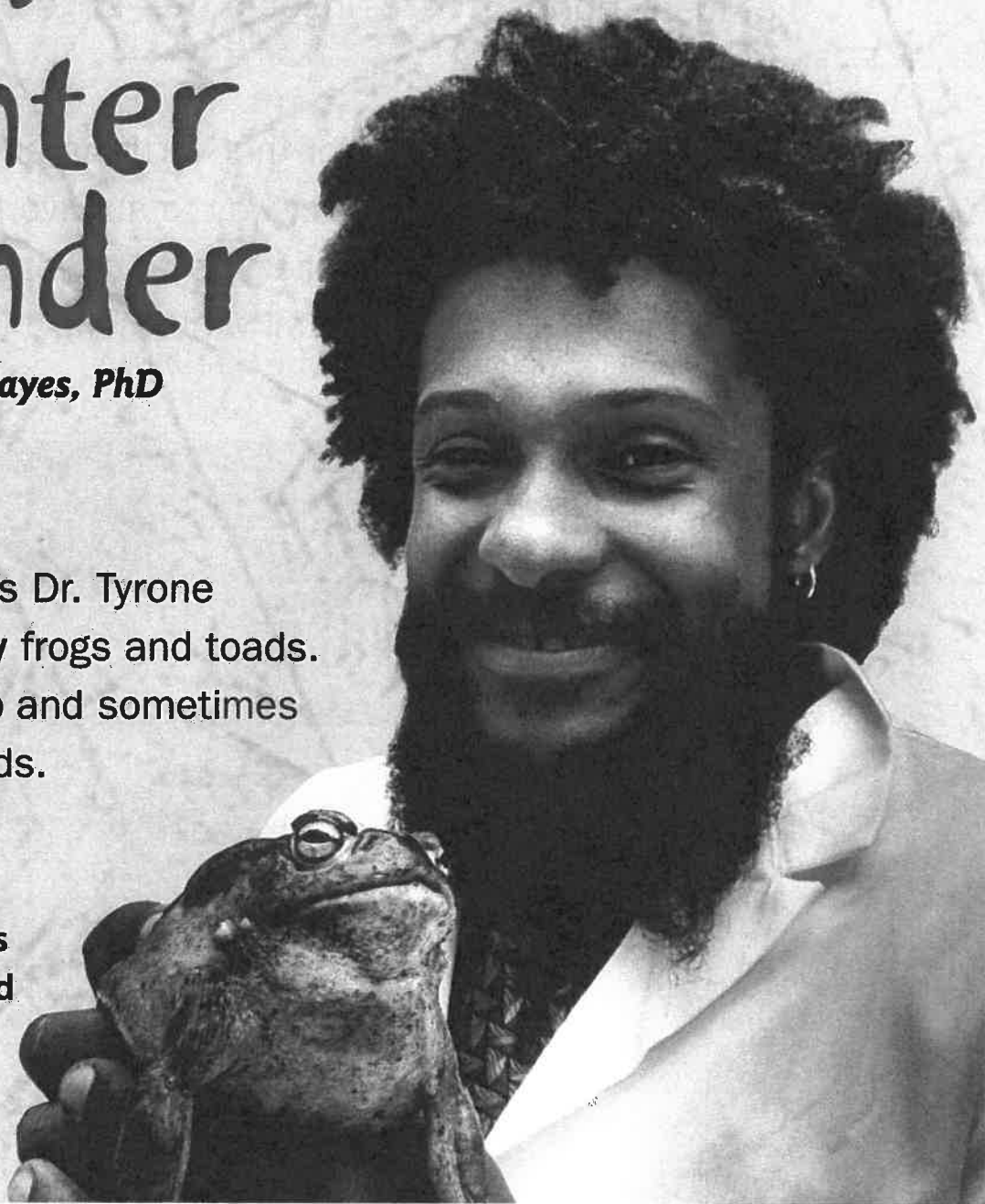
study learn about

lab special room where scientists work ►



Connect Across Texts Read about an amazing change that **happens** to some frogs each **winter**.

Genre A **science article** is nonfiction. It can explain something about nature.



► Before You Move On

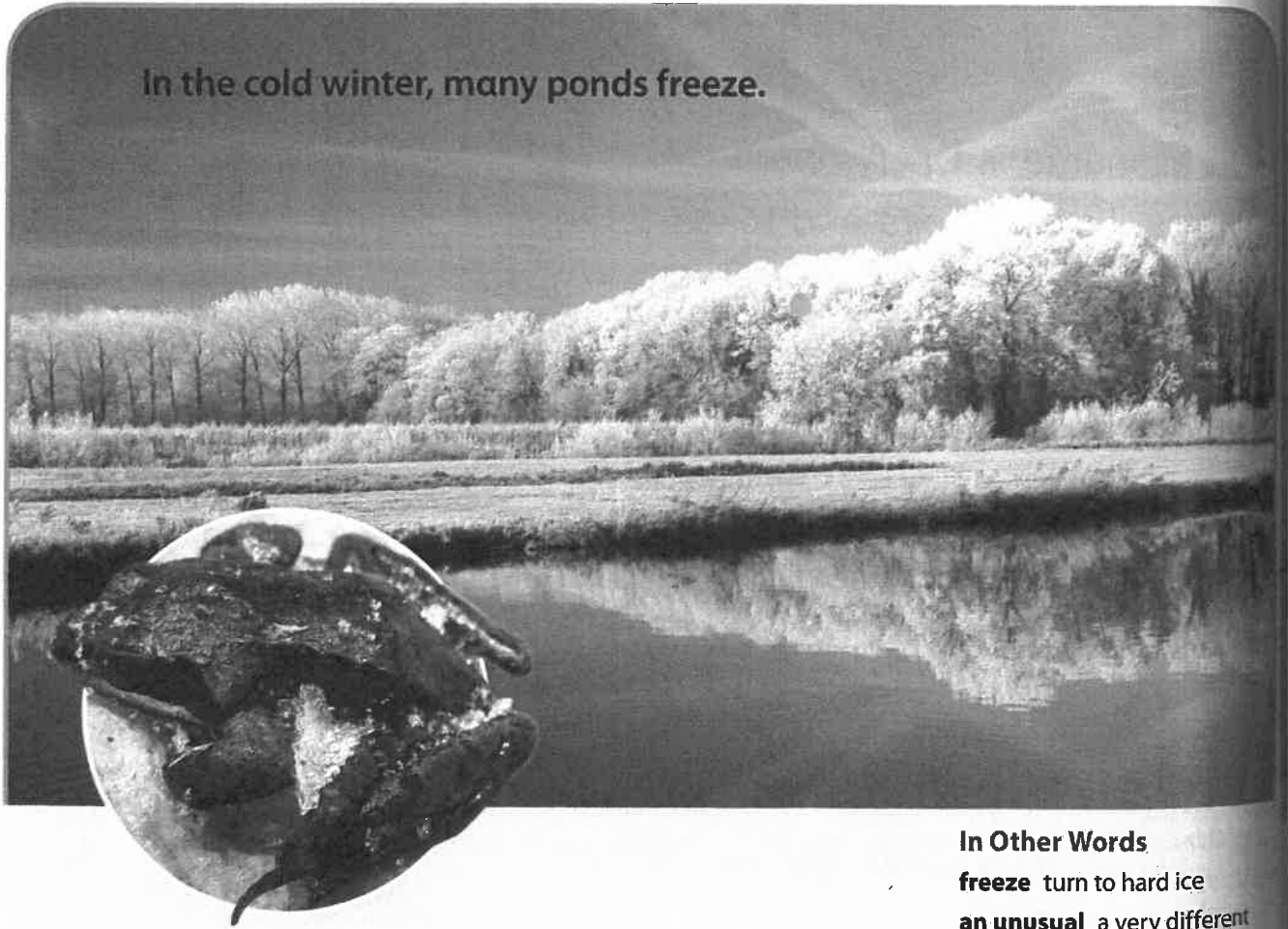
1. **Visualize** What do you think Dr. Hayes feels, smells, and hears when he is at work?
2. **Make Inferences** How do you think Dr. Hayes feels about his work? Explain.

We know that **weather** changes with each **season**. Did you know that some frogs change with the seasons, too?

Winter can be a hard season for frogs. It's so cold that many ponds **freeze**. Insects that frogs eat can be hard to find, too.

But winter is no problem for the North American wood frog! It has **an unusual** way to survive the **harsh** winter. Each winter, the wood frog lets its body freeze. Then it sleeps all winter long.

In the cold winter, many ponds freeze.



▲ A North American wood frog freezes each winter.

In Other Words

freeze turn to hard ice

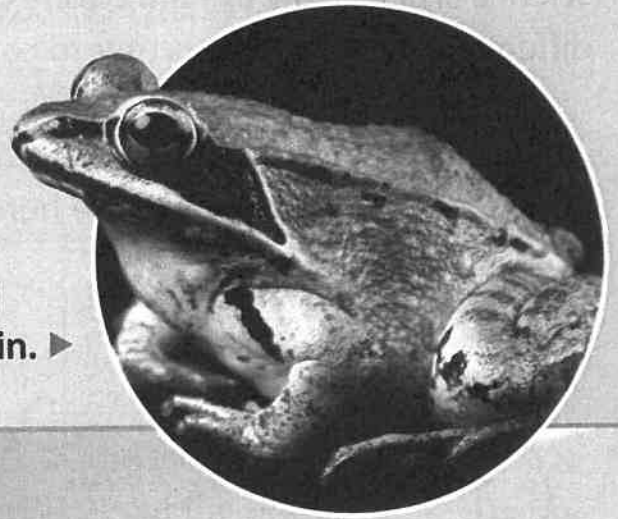
an unusual a very different

harsh long and cold

Soon the warm **spring** comes. That's when the frog wakes up! **Its body thaws.** Then it hops away until winter comes again.

This **unique** frog is **truly amazing!** ❖

In the spring,
the wood frog
wakes up again. ►



In the warm spring, ponds are filled with life.

In Other Words

Its body thaws. The ice on its body melts.

unique special

truly amazing very surprising

► Before You Move On

1. **Make Comparisons** Look at the photos on pages 322–323. Tell how the pictures are the same and how they are different.
2. **Main Idea** What is so unusual about the wood frog?