



# TEACHER'S GUIDE

SCOUT AND VOYAGER | VOL. 20 NO. 4

## IN THIS GUIDE:

About the Learning Framework.....	2
Language Arts Lesson and Lesson Frame .....	3-4, 7-8
Think Sheet (English and Spanish) .....	5-6
<b>Dragonflies</b> Science Lesson .....	9
Science Master (English and Spanish) .....	10-11
<b>Water All Around</b> Science Lesson .....	12
Science Master (English and Spanish) .....	13-14
<b>Too Many Snails</b> Science Lesson .....	15
Science Master (English and Spanish) .....	16-17
Answer Key (English and Spanish).....	18



## LEXILE® FRAMEWORK LEVELS

### SCOUT

Some articles with characteristics of emergent text will be easier for students to read. You may find that other articles are better suited for teacher read-alouds.

### VOYAGER

Dragonflies .....	350L
Water All Around.....	340L
Too Many Snails .....	380L

## STANDARDS SUPPORTED

- Common Core State Standards (CCSS)
- Next Generation Science Standards (NGSS)
- C3 Framework for Social Studies State Standards (C3)

See each lesson for the specific standard covered.

Educational consultant **Stephanie Harvey** has helped shape the instructional vision for this Teacher's Guide. Her goal is to ensure you have the tools you need to enhance student understanding and engagement with nonfiction text.



Visit [EXPLORERMAG.ORG](http://EXPLORERMAG.ORG) to access digital issues of Explorer magazine in **English** and **Spanish**. Engage students with digital read-alouds, videos, and interactive activities.

# NATIONAL GEOGRAPHIC LEARNING FRAMEWORK

## INTRODUCTION

### BACKGROUND

Since 1888, the National Geographic Society has funded scientists and explorers and shared their findings with the world. To support educators who use our resources, we have created a Learning Framework, which lays out what we believe students should learn from their experiences with the Society.

### PURPOSE

The Learning Framework was designed to convey the Society's core beliefs and values. It is built around a set of attitudes, skills, and knowledge that embody the explorer mindset.

To determine the learning outcomes within the Learning Framework, we dug deep into national standards in key subject areas. We also sought advice from subject matter and child development experts, along with the combined expertise of NG instructional designers, researchers, and content developers. To learn more, go to: <https://www.nationalgeographic.org/education/learningframework/>.

### IMPLEMENTATION

Each article in this magazine has a knowledge-based link to the Learning Framework.

## MINDSET OF AN EXPLORER: KEY FOCUS AREAS

### ATTITUDES



**CURIOSITY** An explorer remains curious about how the world works throughout his or her life. An explorer is adventurous, seeking out new and challenging experiences.

**RESPONSIBILITY** An explorer has concern for the welfare of other people, cultural resources, and the natural world. An explorer is respectful, considers multiple perspectives, and honors others regardless of differences.

**EMPOWERMENT** An explorer acts on curiosity, respect, responsibility, and adventurousness and persists in the face of challenges.

### SKILLS



**OBSERVATION** An explorer notices and documents the world around her or him and is able to make sense of those observations.

**COMMUNICATION** An explorer is a storyteller, communicating experiences and ideas effectively through language and media. An explorer has literacy skills, interpreting and creating new understanding from spoken language, writing, and a wide variety of visual and audio media.

**COLLABORATION** An explorer works effectively with others to achieve goals.

**PROBLEM SOLVING** An explorer is able to generate, evaluate, and implement solutions to problems. An explorer is a capable decision maker—able to identify alternatives and weigh trade-offs to make a well-reasoned decision.

### KNOWLEDGE



**THE HUMAN JOURNEY** An explorer understands where we came from, how we live today, and where we may find ourselves tomorrow.

**OUR CHANGING PLANET** An explorer understands the amazing, intricate, and interconnected systems of the changing planet we live on.

**WILDLIFE AND WILD PLACES** An explorer reveals, celebrates, and helps to protect the amazing and diverse creatures we share our world with.

**Kindergarten Standard Supported**

- **CCSS Reading Informational Text:** With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text. (K-3)

**First Grade Standard Supported**

- **CCSS Reading Informational Text:** Describe the connection between two individuals, events, ideas, or pieces of information in a text. (1-3)

**What You Will Need**

- “Water All Around” (*Young Explorer*)
- Think Sheet (English and Spanish) (pages 5–6)
- Pencils

**CONNECT & ENGAGE (5 minutes)**

*Display page 8 of “Water All Around” in the digital magazine.*

Reading is thinking. Thinking is like our inner voice. When we listen to or read something, we are thinking—kind of silently talking to ourselves. We start to make connections to what we might already know and consider the new things we are learning. Pretty cool, isn’t it?

Let’s explore this a little more. When I look at the first page of the article “Water All Around,” my inner voice starts having a conversation with the pictures and the words. I know they have so much they want to tell me.

Go ahead and look at the page. What do you see here? What do you think is happening? Turn and talk about what your inner voice is telling you.

*Kids turn and talk and then share out their thinking.*

**MODEL (10 minutes)**

*Display the next page of “Water All Around.”*

When we read and look at pictures, it’s important to think about what we already know about what we are reading and viewing. That is called making connections. I’ll show you what I mean.

As I look at the video on this first page of the article, I make a connection to what I know. I think about a time when I was little and was out in the rain like the child in the video. It was so much fun to feel the rain on my face and to twirl around in my raincoat. I also remember I liked to jump and splash in puddles. Next, I’m going to read the text.

*Read aloud the text.*

The text tells me that water is all around and it moves and changes. I understand that and can make a connection to that. I grew up in a climate where water coming down as rain could change into sleet or snow when the weather turned colder. I’m going to write my connections on a chart. In the first column of the chart, I’m going to write “I grew up in a place where rain could change to sleet or snow.” In the second column, I’m going to write how this helps me understand. I’m going to write “I know how water can change form.”

There is one thing I want to make sure you remember before we move on. We don’t make connections just to make those connections. We make connections as we read to help us better understand the text. Take some time to turn and talk about that. How do you think making connections as we read helps us better understand the text?

*Kids turn and talk.*

**GUIDE (10 minutes)**

Make sure kids have access to their own Think Sheets. Display the next page of “Water All Around.”

Now it’s your turn. I am going to read the next two pages. As I read, listen to your inner voice and think about the connections you have to the text and pictures.

Read aloud the text. After reading, have kids turn and talk about the connections they have.

Let’s talk about some of the connections you have to the pictures and the text. Maybe you live by or have visited a place near the ocean or a pond or lake. That would be a connection you have.

Take some time to talk about the text and pictures. You might also want to talk more about how water moves and flows. Many students will be familiar with waves and what they look like.

Now, let’s make sure to take some time to write your connections on your Think Sheets. In the first column, write your connection. Then in the second column, write or draw how that connection helps you understand what you are reading and viewing.

**COLLABORATE (25 minutes)**

This time, work with a partner. Before I read the text aloud, look at the pictures. They relate to the text and may also help you make connections.

You might want to pace this out, going page by page in the following way:

- Have kids look at and think about the picture on the page.
- Read aloud the text for each form of water.
- Have kids turn and talk about their connections to that form.

- On their Think Sheets, have kids write or draw their connections and how those connections help them understand.
- Have kids look at the water cycle diagram as you read the text.
- Have kids turn and talk about their connections and then, on their Think Sheets, write or draw their connections and how they help them understand.

Before we begin, know that you and your partner may have different connections. You can talk about that. It’s interesting that we can all connect to what we are reading in different ways. We all have our own unique experiences.

After I read aloud the text, I’m going to move around the classroom, so let me know if you need help.

Partners work together. Move around the room, conferring with partners.

**SHARE THE LEARNING (10 minutes)**

Who would like to share a connection they had to “Water All Around”? Before we start, remember how we share politely with the class. First, share your connection, and don’t forget to also tell how that connection helped you better understand what we read. When you are finished sharing, always ask if there are any questions or comments.

Allow time for kids to share their learning.

We did some good connecting today, didn’t we? Who would have thought that our inner voices were so chatty? Or that our inner voices could be so helpful! When we read something, thinking about our own experiences and connections can really help us understand. Never forget that reading is thinking!

**THINK SHEET**

In the chart, write or draw your connections and how they help you understand.

MY CONNECTION	HOW IT HELPS ME UNDERSTAND

**HOJA DE PENSAR**

En la tabla, escribe o dibuja tus conexiones y cómo te ayudan a comprender.

MI CONEXIÓN	CÓMO ME AYUDA A COMPRENDER

This frame is a template of the language arts lesson. It has the instructional moves and language of the lesson, but the specific content has been removed. This way you can use the Lesson Frame for the other articles in the issue or for any nonfiction text you might be teaching.

## What You Will Need

- Nonfiction text
- Think Sheet template
- Pencils

## CONNECT & ENGAGE (5 minutes)

*Display the first page(s) of the article.*

Reading is thinking. Thinking is like our inner voice. When we listen to or read something, we are thinking—kind of silently talking to ourselves. We start to make connections to what we might already know and consider the new things we are learning. Pretty cool, isn't it?

Let's explore this a little more. When I look at page(s) \_\_\_\_ of the article "\_\_\_\_," my inner voice starts having a conversation with the pictures and the words on the page(s).

Go ahead and look at the page(s). What do you see here? What do you think is happening? Turn and talk about what your inner voice is telling you.

*Kids turn and talk and then share out their thinking.*

## MODEL (10 minutes)

*Display the next page(s) of the article.*

When we read and look at pictures, it's important to think about what we already know about what we are reading and viewing. That is called making connections. I'll show you what I mean.

As I look at the picture on page(s) \_\_\_\_\_, I make a connection to what I know. I think about \_\_\_\_\_. I remember \_\_\_\_\_. Next, I'm going to read the text.

*Read aloud page(s) \_\_\_\_\_.*

The text tells me \_\_\_\_\_. I know \_\_\_\_\_. I understand and can make a connection to \_\_\_\_\_. I'm going to write my connections on a chart. In the first column of the chart, I'm going to write "\_\_\_\_\_." In the second column, I'm going to write how this helps me understand.

There is one thing I want to make sure you remember before we move on. We don't make connections just to make those connections. We make connections as we read to help us better understand the text. Take some time to turn and talk about that. How do you think making connections as we read helps us better understand the text?

*Kids turn and talk.*

### GUIDE (10 minutes)

*Make sure kids have access to their own Think Sheets. Display the next page(s) of the article.*

Now it's your turn. I am going to read page(s) \_\_\_\_\_. As I read, listen to your inner voice and think about the connections you have to the text and pictures.

*Read aloud page(s) \_\_\_\_\_. After reading, have kids turn and talk about the connections they have.*

Let's talk about some of the connections you have to the picture and the text.

*Take some time to talk about page(s) \_\_\_\_\_.*

Now, let's make sure to take some time to write your connections on your Think Sheets. In the first column, write your connection. Then in the second column, write or draw how that connection helps you understand what you are reading and viewing.

### COLLABORATE (25 Minutes)

This time, work with a partner. Before I read the text aloud, look at the pictures. They relate to the text and may also help you make connections.

Before we begin, know that you and your partner may have different connections. You can talk about that. It's interesting that we can all connect to what we are reading in different ways. We all have our own unique experiences.

After I read aloud the text, I'm going to move around the classroom, so let me know if you need help.

*Partners work together. Move around the room, conferring with partners.*

### SHARE THE LEARNING (10 minutes)

Who would like to share a connection they had? Before we start, remember how we share politely with the class. First, share your connection, and don't forget to also tell how that connection helped you better understand what we read. When you are finished sharing, always ask if there are any questions or comments.

*Allow time for kids to share their learning.*

We did some good connecting today, didn't we? Who would have thought that our inner voices were so chatty? Or that our inner voices could be so helpful! When we read something, thinking about our own experiences and connections can really help us understand. Never forget that reading is thinking!



### Standards Supported

- **NGSS Science and Engineering Practices:**  
**Analyzing and Interpreting Data:** Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (K-LS1-1)
- **NGSS LS1.D: Information Processing:** Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. (1-LS1-1)

### What You Will Need

- Interactive Digital Magazine
- Science Master (English and Spanish) (pages 10-11)

### SCIENCE BACKGROUND

Dragonflies are a group of insects most commonly found near freshwater habitats. There are around 7,000 different species, and they live on every continent except Antarctica.

Dragonflies are expert fliers. Their four long, horizontal wings allow them to hover in place or zip around at speeds up to 35 miles an hour (56 kph). Their large compound eyes—each one a mass of about 28,000 single eyes—help them spot prey, which they catch with their long legs mid-air.

Dragonflies begin their lives as eggs in the water. After seven or eight days, the eggs hatch and larvae, or nymphs, emerge. Wingless larvae can stay in the water up to three years. Like the adults they will eventually become, larvae are expert hunters. But rather than catching prey with their legs, they seize it with their lower jaws and drag it into their mouths.

### ENGAGE

Poll the class to see how many students have ever seen a dragonfly. Invite volunteers to describe what the dragonfly looked like and how it moved.

### EXPLORE

Display the "Dragonflies" article with the interactive digital magazine. Read aloud the headline and text on the opening pages. As a class, brainstorm ideas about how a dragonfly would be able to dart all around as it flies. Then read the article aloud or have students read it in groups, with a partner, or on their own.

### EXPLAIN

After reading, have students turn and talk with a partner to discuss what they learned about dragonflies. Ask: **What are a dragonfly's eyes like?** (*large*) **How many wings and legs does a dragonfly have?** (*four wings and six legs*) **How might these body parts help dragonflies be good hunters?** (*Possible response: Large eyes help them see flies and bugs. Four wings help them fly fast. They use their legs to catch food.*) Have students examine the article's photos closely and discuss what else they learned about the body parts of a dragonfly.

### ELABORATE

Display the "A Dragonfly Grows" feature in the interactive digital magazine. As you review the steps as a class, have students discuss how a dragonfly changes as it grows. Guide students to understand that dragonflies are born in water but change to live on land.

### EVALUATE

Have students complete the **Science Master** for this lesson. Have them share and compare their results in small groups or with a partner.

Name \_\_\_\_\_

Date \_\_\_\_\_

## SCIENCE: DRAGONFLIES

Draw or write four things you learned about dragonflies.


Describe one part of a dragonfly.

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Tell how that part helps a dragonfly survive.

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Nombre \_\_\_\_\_

Fecha \_\_\_\_\_

## CIENCIA: LIBÉLULAS

Dibuja o escribe cuatro cosas que hayas aprendido sobre las libélulas.


Describe una parte de la libélula.

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Explica cómo esa parte ayuda a sobrevivir a la libélula.

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### Standards Supported

- **NGSS Science and Engineering Practices: Analyzing and Interpreting Data:** Use observations (firsthand or from media) in order to ask scientific questions. (K-ESS2-1)
- **NGSS Science and Engineering Practices: Analyzing and Interpreting Data:** Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (1-ESS1-1)

### What You Will Need

- Interactive Digital Magazine
- Science Master (English and Spanish) (pages 13-14)

### SCIENCE BACKGROUND

Water is essential to our survival. Up to 60 percent of an adult human's body is made up of water. Fortunately, Earth is covered in water. There is water in the air, on the surface, and even under the ground.

The water that covers Earth comes in different forms. Water flows as a liquid in oceans, rivers, lakes, and ponds. It holds a solid shape in ice. And it floats up into the atmosphere when it becomes water vapor, which is a gas.

To get from one form to another, water goes through a repeating cycle of change. As the sun heats liquid water, the water evaporates and becomes a gas. The gas rises, cools, and condenses in the clouds. It returns to Earth as precipitation. If temperatures are low enough, it freezes to form ice or snow. Then, the water cycle starts all over again.

### ENGAGE

Display a clear glass filled with ice cubes next to a clear glass filled with water. Invite students to describe what they see. Tell students to imagine that both glasses sat where they are for the rest of the day. Encourage students to share their opinions about how or why the contents of either glass would change.

### EXPLORE

Display the "Water All Around" article with the interactive digital magazine. Read aloud the headline and text on the opening pages. Brainstorm ideas about how water moves and changes forms. Encourage students to describe examples of this they have seen in real life. Then read the article aloud or have students read it in groups, with a partner, or on their own.

### EXPLAIN

After reading, point out to students that water covers most of Earth. Water is in the oceans, lakes, rivers, and ponds. It is also in ice and steam. Say: **This is possible because water changes forms.** Ask: **What must happen for liquid water to turn into solid ice?** (*The water must freeze.*) **What must happen for liquid water to turn into a gas?** (*It must get very hot.*) Have students turn and talk as they discuss the three forms of water. Encourage them to identify other solids, liquids, and gases they have seen.

### ELABORATE

Display the feature "The Water Cycle" with the interactive digital magazine. Review the diagram with the class. Have students explain in their own words how water from the ocean turns into clouds and then falls back to the ground. Challenge them to identify points where water turns into a solid, liquid, or gas along the way.

### EVALUATE

Have students complete the **Science Master** for this lesson. Encourage them to share and compare their results in small groups or with a partner.


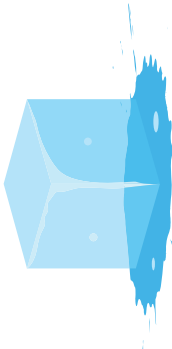
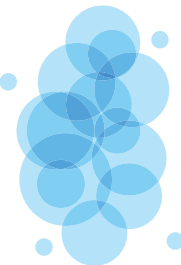
Name \_\_\_\_\_ Date \_\_\_\_\_

# SCIENCE: WATER ALL AROUND

What form of water do you see in each picture?

Circle the correct word.

Then write a sentence about each form of water.

	<p>solid liquid gas</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
	<p>solid liquid gas</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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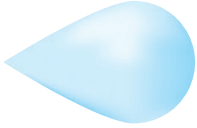
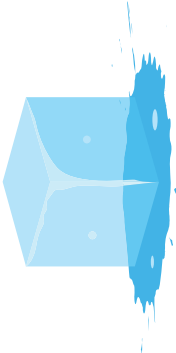
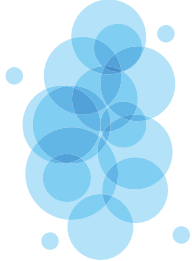
Nombre \_\_\_\_\_ Fecha \_\_\_\_\_

## CIENCIA: AGUA POR TODAS PARTES

¿En qué estado se encuentra el agua en cada dibujo?

Encierra en un círculo la palabra correcta.

Luego escribe una oración sobre cada uno de los estados del agua.

	<p>sólido líquido gaseoso</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
	<p>sólido líquido gaseoso</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
	<p>sólido líquido gaseoso</p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

### Standard Supported

- **NGSS ETS1.A: Defining and Delimiting Engineering Problems:** Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)

### What You Will Need

- Interactive Digital Magazine
- Science Master (English and Spanish) (pages 16-17)

### SCIENCE BACKGROUND

In 2011, Molly and John Chester left their jobs as a private chef and documentary filmmaker to pursue their dream. They started Apricot Lane Farms.

The husband-and-wife team chose not to use conventional farming practices. Instead, they created a micro-ecosystem on their farm. Everything they do, from composting to planting different grasses, helps keep that ecosystem healthy.

When problems arise, they search for a natural way to solve them. For example, when snails invaded their orchard, they added ducks to the menagerie of animals they raise. Ducks, it turns out, love to eat snails. Not only did they find an environmentally friendly solution to their snail problem, but they now have lots of duck eggs to sell, too.

### ENGAGE

Write the words "too many" on the board. Discuss what this term means and why it could be a problem. Encourage students to tell about a time they had "too many" of something. Why was it a problem and how did they solve it?

### EXPLORE

Display the "Too Many Snails" article with the interactive digital magazine. Invite students to examine the article's photos. Ask: **Which photo shows the animal that was a problem?** (*photo of snails*) As a class, brainstorm ideas about why too many snails might be a problem on a farm. Then read the article aloud or have students read it in groups, with a partner, or on their own.

### EXPLAIN

After reading, point out to students that snails are not necessarily bad on a farm. They were this time because there were just too many of them. Ask: **How did Molly and John first try to solve their problem?** (*They tried to pick the snails off of the trees.*) **What did they do when that did not work?** (*They moved the ducks to the trees.*) **Why did this work?** (*The ducks ate the snails.*) As a class, discuss reasons why this was a good solution for Molly and John's problem.

### ELABORATE

Point out to students that farmers must solve problems of all types on their farms. As a class, make a list of other problems Molly and John might face. Brainstorm ideas about how they could solve each one.

### EVALUATE

Have students complete the **Science Master** for this lesson. Encourage them to share and compare their results in small groups or with a partner.

## SCIENCE: TOO MANY SNAILS

Write or draw about Molly and John's problem with snails.

Write or draw their solution.

Problem



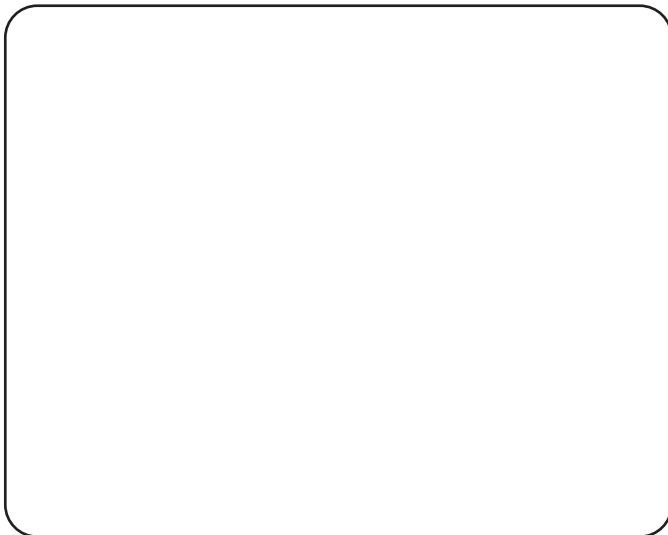
Solution



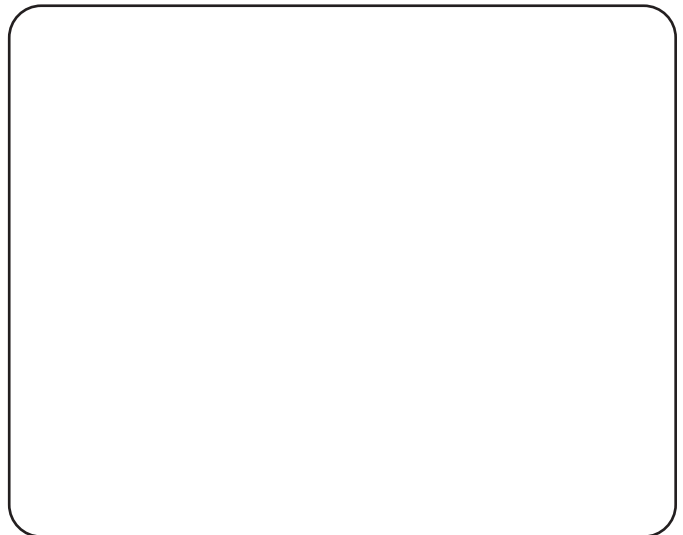
Now write or draw about a problem you had.

Write or draw your solution.

Problem



Solution





## CIENCIA: DEMASIADOS CARACOLES

Escribe o dibuja el problema que Molly y John tenían con los caracoles.

Escribe o dibuja su solución.

Problema



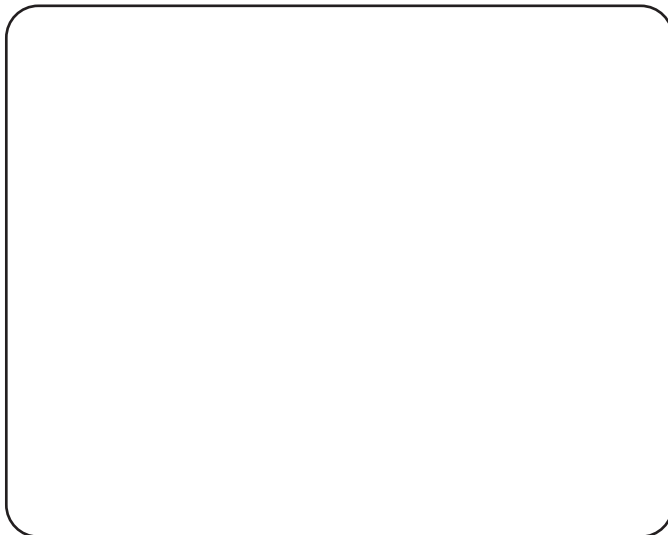
Solución



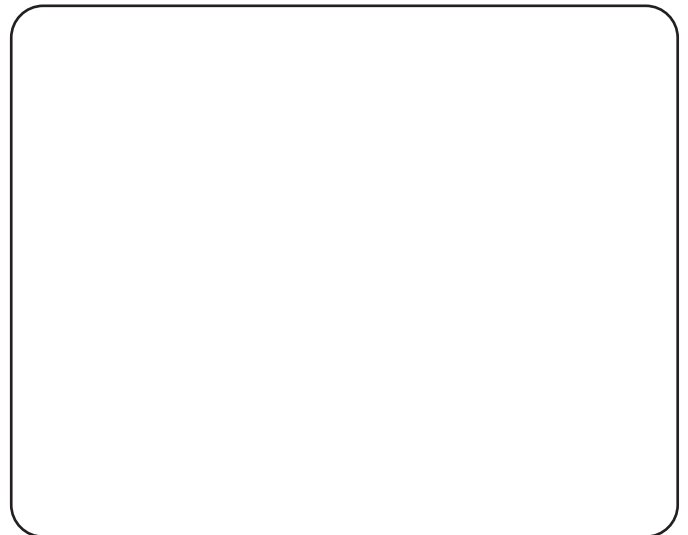
Ahora escribe o dibuja algún problema que hayas tenido.

Escribe o dibuja tu solución.

Problema



Solución



## ANSWER KEY / CLAVE DE RESPUESTAS

### LANGUAGE ARTS

#### Think Sheet, page 5

Students should write or draw their connections and how they help them understand.

### DRAGONFLIES

#### Science: page 10

**Part 1:** Students should write or draw four things they learned about dragonflies.

**Part 2:** Students should describe one part of a dragonfly and tell how it helps the dragonfly survive.

### WATER ALL AROUND

#### Science: page 13

**Circle:** liquid, solid, gas.

**Write:** Students should use information from the article to write a sentence about each form of water.

### TOO MANY SNAILS

#### Science: page 16

**Part 1: Problem:** Snails were eating the tree leaves in their orchard. **Solution:** They moved ducks from the pond to the orchard. The ducks ate the snails.

**Part 2:** Students should identify one problem they had and tell how they solved it.

### WORDS TO EXPLORE

1. larva
2. adult
3. gas (water vapor)
4. cycle

### ARTES DEL LENGUAJE

#### Hoja de pensar, página 6

Los estudiantes deben escribir o dibujar sus conexiones y cómo éstas les ayudan a comprender el concepto.

### LIBÉLULAS

#### Ciencias: página 11

**Parte 1:** Los estudiantes deberán escribir o dibujar cuatro cosas que hayan aprendido sobre las libélulas.

**Parte 2:** Los estudiantes deben describir una parte de la libélula y explicar cómo le ayuda a sobrevivir.

### AGUA POR TODAS PARTES

#### Ciencias: página 14

**Círculo:** líquido, sólido, gaseoso

**Escribe:** Los estudiantes deben usar la información del artículo para escribir una oración sobre cada uno de los estados del agua.

### DEMASIADOS CARACOLES

#### Ciencias: página 17

**Parte 1: Problema:** Los caracoles se estaban comiendo las hojas de los árboles.

**Solución:** Llevaron los patos a los árboles. Los patos se comieron los caracoles.

**Parte 2:** Los estudiantes deben identificar un problema que hayan tenido y contar cómo lo resolvieron.

### PALABRAS PARA EXPLORAR

1. larva
2. adulto
3. gaseoso (vapor de agua)
4. ciclo