

 **Indiana**

interactive SCIENCE

*A peony plant can grow
flowers every spring for
over 50 years.*



PEARSON



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Indiana

interactive SCIENCE

*A peony plant can grow
flowers every spring for
over 50 years.*



PEARSON

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My Picture



Name

School

Town

State

All About Me

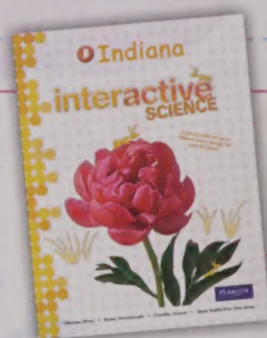
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On The Cover

A peony plant can grow flowers every spring for over 50 years.

PEARSON

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Built especially for Indiana

Indiana *Interactive Science* covers 100% of Indiana's Academic Standards for Science without extraneous content. Built on feedback from Indiana educators, *Interactive Science* focuses on what is important to Indiana teachers and students, creating a personal, relevant, and engaging classroom experience.

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This girl is collecting scientific information.
myscienceonline.com

UntamedScience™

Watch the Ecogeeks as they learn about the nature of science.


Got it? 60-Second Video

Watch and learn about the nature of science.

Envision It!

See what you already know about the nature of science.


Science Songs

Sing about the nature of science.


Explore It! Animation

See how key concepts about the nature of science come to life.



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This house for wood ducks is made of natural materials.

 **myscienceonline.com**



UntamedScience™

Ecogeeks answer your questions about the design process.

Got it?  **60-Second Video**

Review lessons about the design process in 60 seconds!

Memory Match

Mix and match vocabulary practice about the design process



Investigate It! Simulation

Do this experiment online to learn how you can build a boat.



I Will Know...

See what you've learned about the design process.



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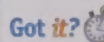
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Matter can be a solid, liquid, or gas.
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Untamed Science™

Watch the EcoGeeks in this wild video about matter.


Got it? 60-Second Video

Each matter lesson reviewed in a minute!


Explore It! Animation

Quick and easy experiments about matter.

Vocabulary Smart Cards

Mix and match matter vocabulary.


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Find out how objects are different in this online lab.

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Water and nutrients in soil helped these carrots grow.
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UntamedScience™

Watch the Ecogeeks as they learn about soil.

Got it? **60-Second Video**

One minute videos about every soil lesson.

Envision It!

Interact with science to find out what you know about soil.


my planet DiARY

Connect your life to Inca terraces.


I Will Know...

See how key concepts of each lesson about soil are brought to life!

Plants, Animals, and Their Habitats



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Plants and animals need each other to live.

myscienceonline.com



Untamed Science™

Watch the Ecogeeks learn about plants, animals, and their habitats.



Got it? 60-Second Video

Take one minute to learn about plants, animals, and their habitats.



Listen to a catchy tune about plants, animals, and their habitats.



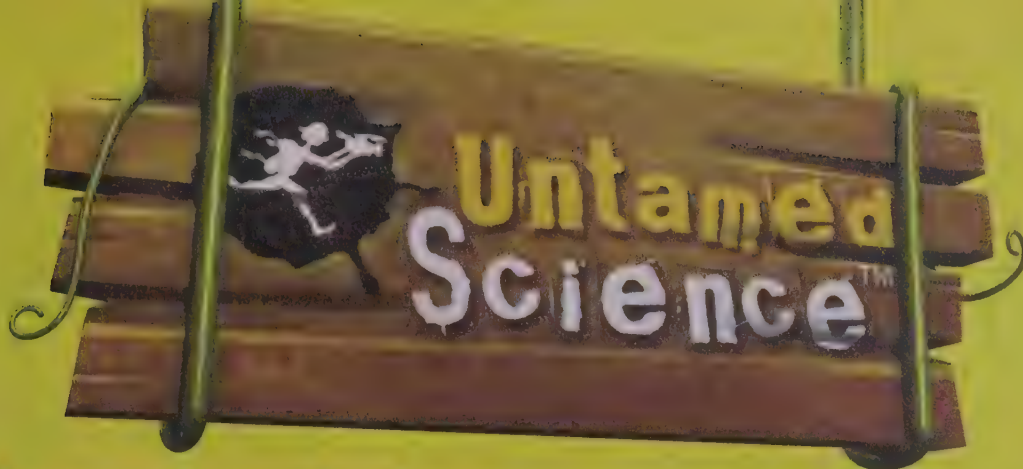
Explore It! Animation

Quick and easy experiments about plants, animals, and their habitats.



Investigate It! Simulation

Explore the needs of plants online!



Videos that bring **Science** to **life!**

Go to **MyScienceOnline.com**
to watch exciting Untamed
Science videos!

The Untamed Science team has
created a unique video for every
chapter in this book!



"This is your book. You can write in it!"

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Big Question

At the start of each chapter you will see two questions — an **Engaging Question** and a **Big Question**.

Just like a scientist, you will predict an answer to the Engaging Question. Each Big Question will help you start thinking about Indiana's Big Ideas of science. Look for the  symbol throughout the chapter!

Plants, Animals, and Their Habitats

5

Try It! What does a cricket need?

Lesson 1 What do plants need to live?

Lesson 2 What do animals need to live?

Lesson 3 How do plants and animals live in land habitats?

Lesson 4 How do plants and animals live in water habitats?

Lesson 5 What helps living things live in different places?

Investigate It! Do plants need light?

Try It! X on one thing a cow needs.

What do living things need?

Go to [www.IndianaScience.com](#) and click on:

Indiana Science

Ecogeeks answer your questions

Go! [Ecogeeks Answer Your Questions](#)

Review each lesson in 60 seconds!

Where
does a cow
get food?



Let's Read Science!

You will see a page like this toward the beginning of each chapter. It will show you how to use a reading skill that will help you understand what you read.

Main Idea and Details

The **main idea** is what the sentences are about.
Details tell about the main idea.



A Clay Cat

The object is a clay cat.
The ears are blue triangles.
The whiskers are long and yellow.

Practice It!

Write two details that tell about the main idea.

Main Idea

The object is a clay cat.



Detail

Detail

75

Let's Read Science!

Vocabulary Smart Cards

matter
property
thermometer
solid
liquid
gas
volume
evaporate
mixture
dissolve

Play a Game!

Cut out the cards.
Work with a partner.

Cover up the words
on each card.

Have your partner
look at the picture
and guess the word.

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Vocabulary Smart Cards

Go to the end of the chapter and cut out your own set of **Vocabulary Smart Cards**. Draw a picture to learn the word. Play a game with a classmate to practice using the word!

"Engage with the page!"

interactive SCIENCE

Envision It!

At the beginning of each lesson, at the top of the page, you will see an **Envision It!** interactivity that gives you the opportunity to circle, draw, write, or respond to the Envision It! question.



Lesson 2

What are objects made of?

Envision It!



Tell three objects that people make.



I will know how to sort objects by their materials.

Word to Know
natural

my planet DiARY —Indiana—

INVENTION!

Do you like to eat popcorn? Orville Redenbacher wanted to invent corn that made the best popcorn. He tested many kinds of corn in Indiana. People test things to find what works best. People can test things they make. People can test things that grow on their own too.

Underline what Orville Redenbacher tested.

Write something you would like to test.



Different Materials

Objects are made of materials.
Some materials are natural.

Natural means not made by people.
Materials that come directly from Earth are natural.
Wood is natural.
Rocks and minerals are natural too.
Other materials are made by people.
People make plastic.

Write one natural material in the picture.

Write one material made by people.

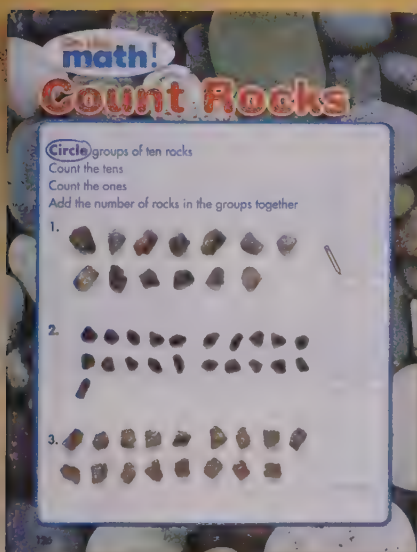
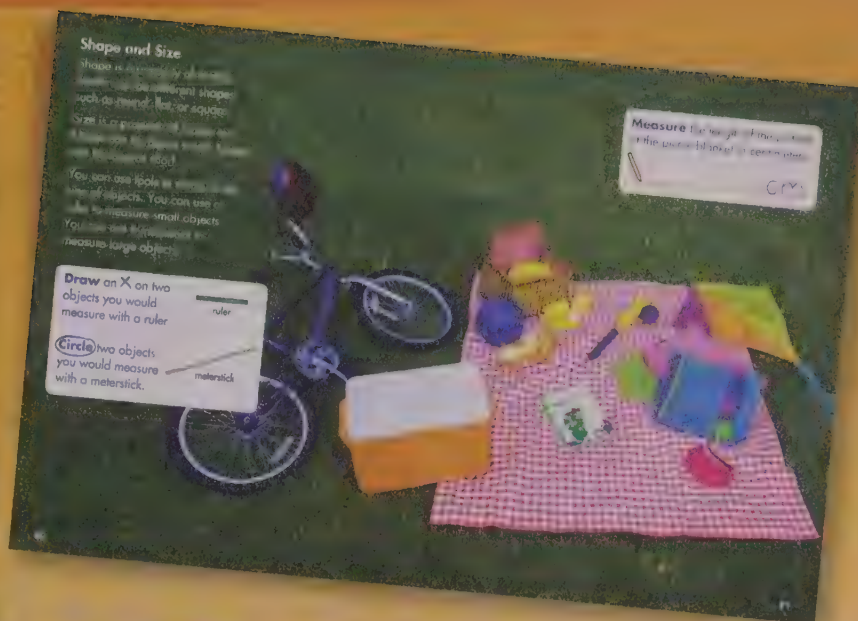


my planet DiARY

My Planet Diary interactivities will introduce you to amazing scientists, fun facts, and important discoveries in science. They will also help you to overcome common misconceptions about science concepts.

Read See **DO!**

After reading small chunks of information, stop to check your understanding. The visuals help teach about what you read. Answer questions, underline text, draw pictures, or label models.



Do the **math!**

Scientists commonly use math as a tool to help them answer science questions. You can practice skills that you are learning in math class right in your Interactive Science Student Edition!

Got it?

At the end of each chapter you will have a chance to evaluate your own progress! At this point you can stop or go on to the next lesson.



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Inquiry Try It!

How much force does it take to move objects?

A force is a push or a pull. Force can be measured.

Try It! Wear your safety goggles!



1. Pick a material. Find a way to measure how much force it takes to move a book. Record.
2. Measure the force needed to move 2 books. Record.

Explain Your Results

3. Explain how you measured force.

Materials



safety goggles



2 books



string



meter ruler



materials that stretch

Inquiry Skill

You measure when you compare the length of something to the ruler.

sgmt n de

attract
repel

124 **2 MS.2** *modul* = negotiations that may happen over time as a class, a small group, or independent; Also 2.1 & 2 MS.1

STEM activities
are found throughout core
and ancillary materials.

Design It!

The **Design It!** activity has you use the engineering design process to find solutions to problems. By finding a problem and then planning, drawing, and choosing materials, you will make, test, and evaluate a solution for a real world problem. Communicate your evidence through drawings and prototypes and identify ways to make your solution better.

Design It!

What do pill bugs need?

All pets need habitats. A friend gives you pet pill bugs. You must design a habitat for them. What will your pill bugs need?

Find a Problem

1. How will you meet each need?

Pill Bug Habitat Chart	
Need	How I will meet the need.
Air	
Shelter	
Food/energy	
Water	

Plan and Draw

2. List the steps to build the habitat.

3. Draw your design.

You will use the materials on the next page

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Investigate It!

At the end of every chapter, a Directed Inquiry activity gives you a chance to put together everything you've learned in the chapter. Using the activity card, apply design principles in the Guided version to Modify Your Investigation or the Open version to Develop Your Own Investigation. Whether you need a lot of support from your teacher or you're ready to explore on your own, there are fun hands-on activities that match your interests.

Investigate It!

How can properties change?

Follow a Procedure

1. Put 30 mL of glue in a measuring cup. Observe the properties of the glue. Record.

Substance Observations		
Property	Glue	New Substance
Color		
Texture		
State of Matter (solid, liquid, gas)		

2. Add two drops of food coloring.

Wear safety goggles.

1 cc = 1 mL

Materials

glue
measuring cup
safety goggles
borax solution
water
glue and food coloring

Regulatory Skill
After making an observation you can record your data in a chart.

3. Add 15 mL of water to the cup. Stir the mixture. Observe its properties.

4. Add 15 mL of borax solution. Stir. Observe what happens.

5. Observe the new substance. Investigate its properties. Record your observations.

Wash your hands when finished.

Analyze and Conclude

6. Compare the glue and the new substance.

Guided Inquiry

Modify Your Investigation

Investigate the Question

How might light affect the growth of a plant?

What do you think will happen if you change the amount of light a plant gets?

What do you think will happen if you change the amount of water a plant gets?

What do you think will happen if you change the amount of soil a plant gets?

What do you think will happen if you change the amount of air a plant gets?

What do you think will happen if you change the amount of temperature a plant gets?

What do you think will happen if you change the amount of humidity a plant gets?

What do you think will happen if you change the amount of wind a plant gets?

What do you think will happen if you change the amount of rain a plant gets?

What do you think will happen if you change the amount of snow a plant gets?

What do you think will happen if you change the amount of ice a plant gets?

What do you think will happen if you change the amount of fog a plant gets?

What do you think will happen if you change the amount of clouds a plant gets?

What do you think will happen if you change the amount of moon a plant gets?

What do you think will happen if you change the amount of stars a plant gets?

What do you think will happen if you change the amount of planets a plant gets?

What do you think will happen if you change the amount of galaxies a plant gets?

What do you think will happen if you change the amount of the universe a plant gets?

What do you think will happen if you change the amount of everything a plant gets?

What do you think will happen if you change the amount of nothing a plant gets?

What do you think will happen if you change the amount of everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

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What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

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What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

What do you think will happen if you change the amount of everything, nothing, and everything and nothing a plant gets?

Apply It!

At the end of every unit, an Open Inquiry activity gives you a chance to explore science using scientific methods.

Apply It! Using Scientific Methods

Does a radish grow more with or without light?

Materials

6 radish seeds

soil

2 paper cups

water

ruler

Regulatory Skill

Plan an experiment to test your prediction.

Ask a question.

Does a radish grow more with or without light?

Make a prediction.

1. A plant will grow better if it gets

a) a full day of light.

b) two hours of light.

Do not put any materials in your mouth.

Plan a fair test.

Make sure you use the same setup for both cups.

Design your test.

2. List your steps.

Do your test.

3. Follow your steps.

Collect and record data.

4. Fill in the chart.

Record your measurements.

Tell your conclusion.

5. Communicate Which grew more?

222

223

"Go online anytime!"

interactive SCIENCE



Here's how you log in...

- 1 Go to www.myscienceonline.com.
- 2 Log in with your username and password.

Username: _____

Password: _____

- 3 Click on your program and select your chapter.

Check it out!

Watch a Video!

 **Untamed Science™** Join the Ecogeeks on their video adventure.

Got it?  **60-Second Video** Review each lesson in 60 seconds.

Go Digital for Inquiry!

Explore It! Simulation Watch the lab online.

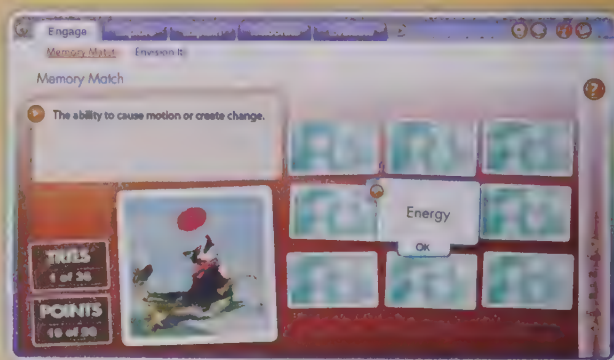
Investigate It! Virtual Lab Do the lab online.

Show What You Know!

Got it? Quiz Take a quick quiz and get instant feedback.

 **ISTEP+ Practice**
Prepare for the "big test."

 **Writing for Science** Write to help you unlock the Big Question.



Get Excited About Science!

 **The Big Question** Share what you think about the Big Question.

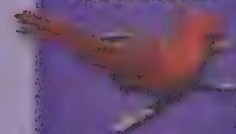
 **my planet DIARY** Connect to the world of science.

Envision It! Connect to what you already know before you start each lesson.

Memory Match Play a game to build your vocabulary.

Get Help!

my science  **coach** Get help at your level.



Science, Engineering, and Technology

Chapter 1

The Nature of Science



What is science?



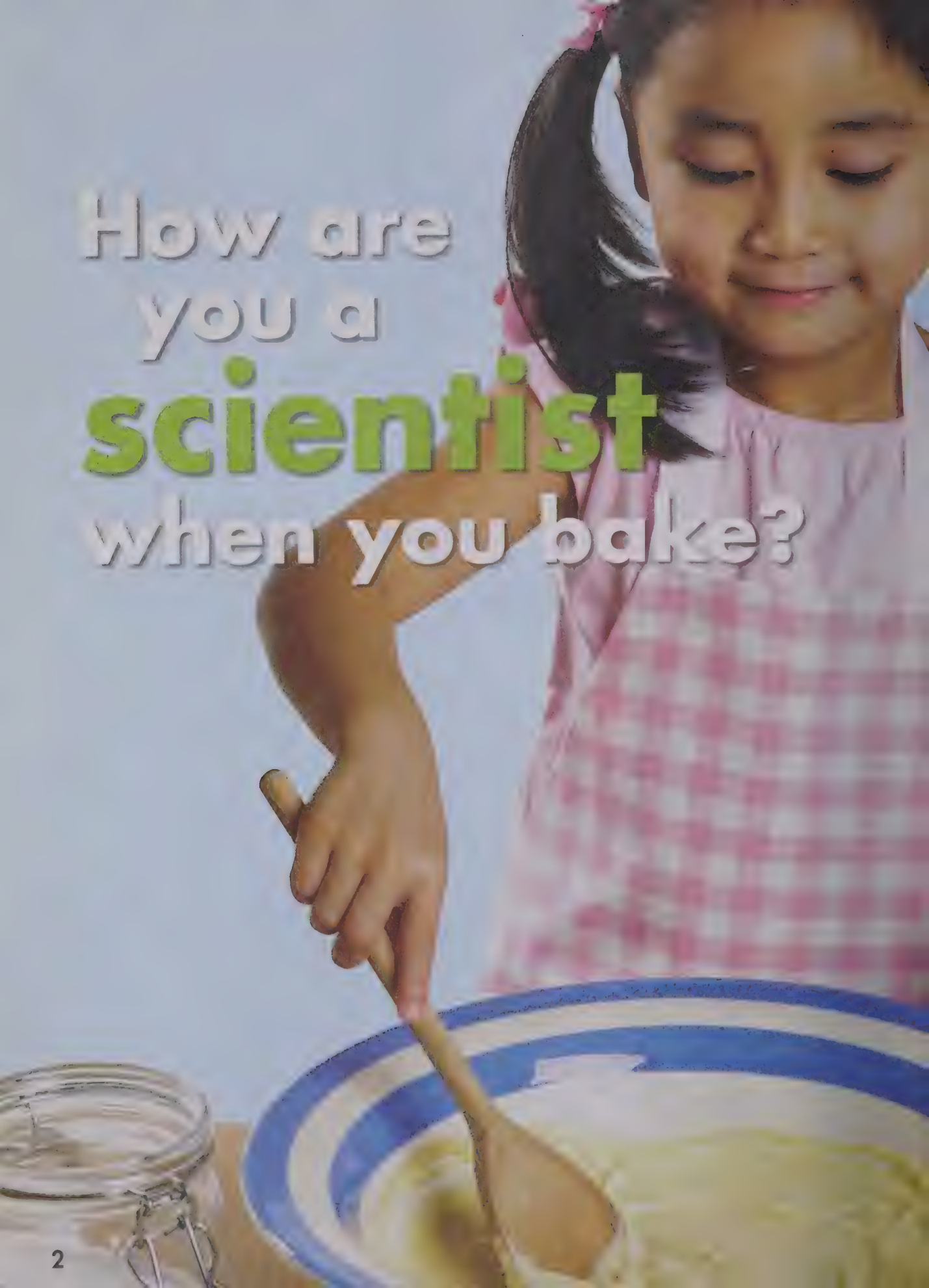
Chapter 2

The Design Process



How do you solve problems?





How are
you a
scientist
when you bake?

The Nature of Science

**Try It!**

How do you use your senses to identify objects?

Lesson 1 What questions do scientists ask?

1.NS.2, 1.NS.3

Lesson 2 What skills do scientists use?

1.NS.3, 1.NS.4

Lesson 3 How do scientists use tools?

1.NS.6

Lesson 4 How do scientists find answers?

1.NS.2, 1.NS.7

Lesson 5 How do scientists share data?

1.NS.1, 1.NS.5

**Investigate It!**

How do you know the mass of objects?

Circle a tool bakers use.



What is science?

Go to www.myscienceonline.com and click on:

**Untamed Science™**

Watch the Ecogeeks in this wild video.

**60-Second Video**

Review each lesson in 60 seconds!

How do you use your senses to identify objects?

Scientists observe to find out about objects.

Materials

sock
with
object



crayons



Inquiry Skill You can use what you observe to help you **infer**.

☐ 1. **Observe** Feel the object in the sock.
Do not look!

☐ 2. **Record** what it feels like.



☐ 3. **Infer** Draw the object.



Explain Your Results

4. Look at the object.

What do you see that you did not feel?

Picture Clues

Pictures can give you **clues** about what you read.

At the Vet

The dog is at the vet.

The vet helps the dog stay healthy.

Let's Read
Science!



Practice It!

Look for clues in the picture. **Write** how you know the dog stays healthy.

At the Vet



The dog is
at the vet.

Clue



Clue

Lesson 1

Envision It!

What questions do scientists ask?



Conduct investigations that may happen over time as a class, in small groups, or independently. **DE** Generate questions and make observations about natural processes.



Tell what a scientist might ask about the leaves.

my planet diary

DISCOVERY

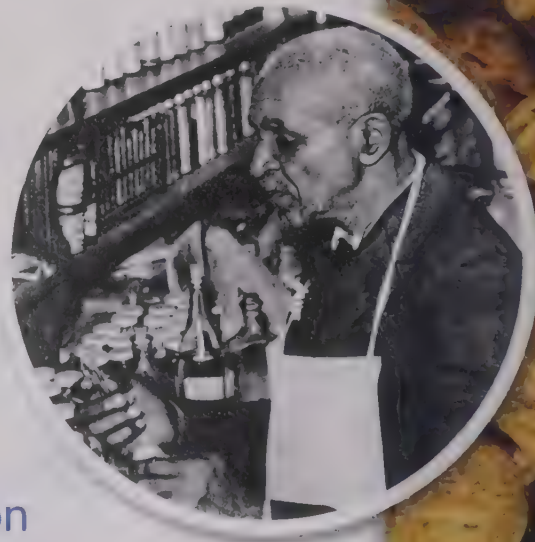
Read Together

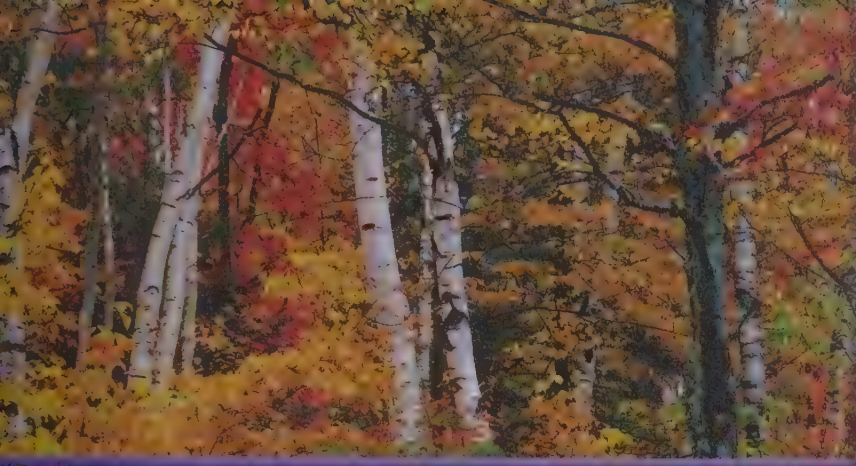
George Washington Carver discovered new ways to make things with plant parts. He made ink, shampoo, soap, paper, and rubber from peanuts!

Sometimes people like George Washington Carver are looking for new things. Sometimes people discover new things by accident. Discoveries help people do things they could not do before.

Circle one thing George Washington Carver made in a new way.

Write how you use this discovery.





I will know
scientists ask questions
about the world.

Word to Know

inquiry

Scientists

Scientists are people who study
the world around them.

Scientists ask and answer questions.

Scientists use inquiry.

Inquiry means looking for answers.

Picture Clues **Write** two questions
the boy in the picture might ask.



The boy is a scientist.
He is studying what is
in the jar.

Questions



Clue

Clue

Questions

Scientists ask questions about many things.

Scientists ask questions about animals.

Scientists ask questions about plants.

Scientists ask questions about rocks
and soil.

Scientists ask questions about weather too.

Write a question you might ask about
this storm.



Lightning Lab

Science Questions

Work with a partner.

Make a list of science
questions about plants
or rocks. Talk about
why the questions are
science questions.



Discovery

Scientists make discoveries.

A discovery is a new thing or idea.

Discoveries can change our lives.

The discovery of germs changed the way people act.

Doctors did not always wash their hands with soap.

People would get germs from the doctor.

Now doctors wash their hands with soap.

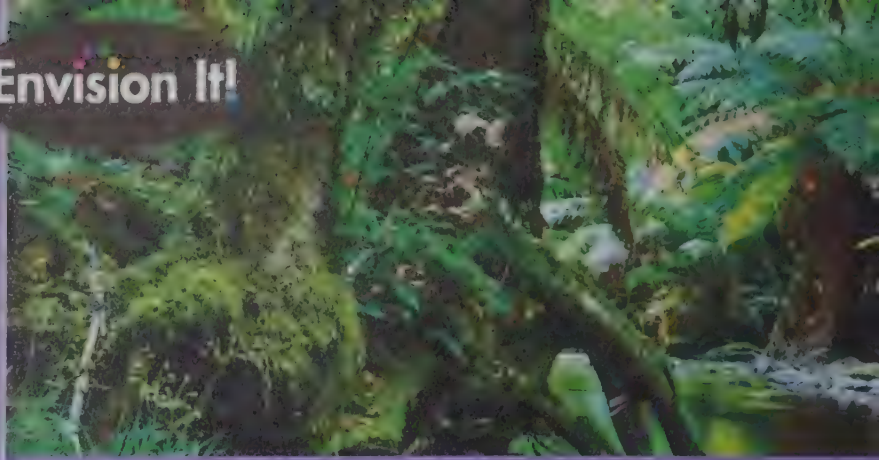
The soap gets rid of germs.

Their tools are washed with soap too.

Doctors do not pass germs to others.

Name one discovery. **Tell** how it helped people.

What skills do scientists use?



Tell about the picture. Use your senses.

1.NS.1 Generate questions and make observations about natural processes. (JG.1)
Make predictions based on observations.

Inquiry Explore It!

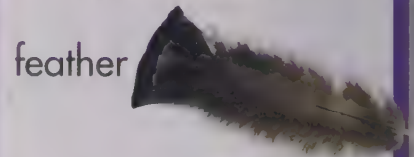
How can you observe objects?

1. Look at a feather.

Observe it with a hand lens.

Draw what you see.

Materials



feather



crayons or markers



hand lens

2. Feel the feather. Tell what you learn.

Explain Your Results

3. How did the hand lens help you **observe**?



I will know skills
scientists use to learn
about new things.

Word to Know

observe

The Five Senses

You **observe** when you use your senses.

You have five senses.

Your senses are sight, hearing,
smell, touch, and taste.

You can observe color with
your sense of sight.

You can observe size and shape
with your senses of sight and touch.

Underline the sentence that tells
how you observe.

Picture Clues **Write** one thing you
observe about the frog in the picture.



This tree frog lives
in the rainforest.



Observe and Predict

You observe things.

You use what you observe to predict.

Predict means to tell what might happen next.

Suppose you observe that danger is near.

You can predict what the fish will do.

You might predict the fish will swim away.

 **Picture Clues** Look at the fish.

Tell about their size, shape, and color.

Predict what this fish
will do when it gets hungry.

Compare and Classify

You share what you observe with others.

You compare what you observe.

You can compare how things are alike.

You also talk about how things are different.

You classify things too.

You classify when you group things by how they are alike.

You can classify the fish by color.

Tell a partner how the fish are alike.



At-Home Lab

Classify Objects

Gather 10 small objects from around your home. Observe the shape of each object. Make a chart to classify the objects by shape.

Lesson 3

How do scientists use tools?

Envision It!



Tell how you can use these tools safely.

1.NS.6 Make and use simple equipment and tools to gather data and extend the senses.

Inquiry Explore It!

Why do scientists use tools?

- 1. Pick an object. Use a metric ruler to **measure** its length in centimeters. **Record.**

- 2. Use paper clips to measure the object. Record its length in paper clips.

Explain Your Results

- 3. Think about the 2 ways you **measured**. Why might scientists use a metric ruler and not paper clips?

Materials



paper clips



metric ruler

Object Length

Length in centimeters

Length in paper clips





I will know how to use some science tools. I will know how to do science safely.

Words to Know

tool

safety

measure

Tools

Scientists use many different tools.

A **tool** is something that makes work easier.

You can use tools to observe.

A hand lens is a tool.

A hand lens makes objects look bigger.

A microscope makes objects look bigger too.

You can see small things with a microscope.

You cannot see these things with just your eyes.

Underline what makes work easier.

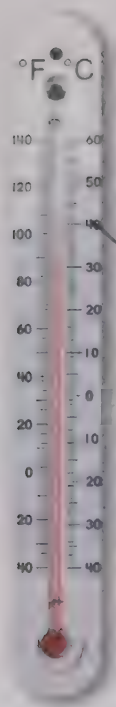
Draw an X on the tool that helps you see things you cannot see with just your eyes.



hand lens



microscope



A **thermometer** measures temperature. Temperature is how hot or cold something is. This thermometer tells temperature in degrees Fahrenheit and Celsius.

Measure with Tools

When you **measure** you learn the size or amount of something.

You use tools to measure.

Sometimes scientists do not measure.

Sometimes scientists estimate.

An estimate is a careful guess about the size or amount of something.

Circle the tool that measures how hot something is.



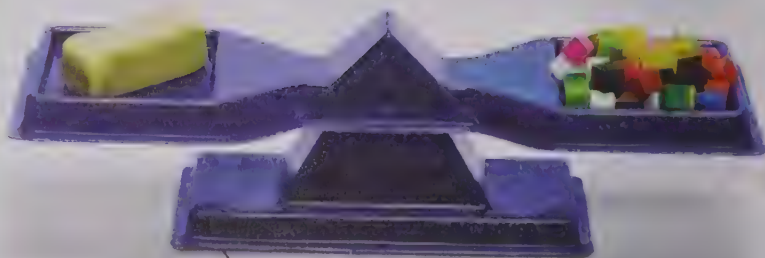
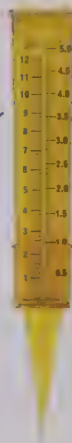
Lightning Lab

Measure Temperature

Use a thermometer.

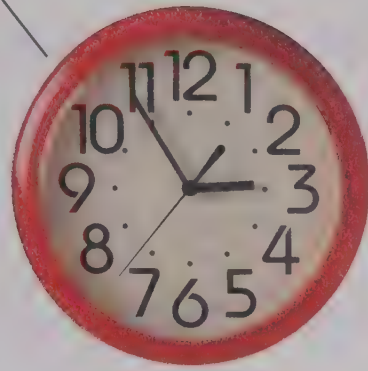
Measure the temperature in your classroom. Tell the temperature in degrees Fahrenheit and Celsius.

A **rain gauge** measures how much rain has fallen.



A **pan balance** measures how much mass an object has.

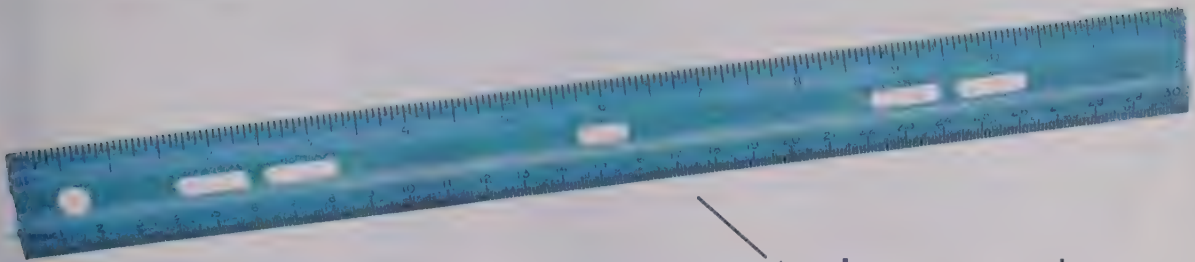
A **clock** measures time.



A **measuring cup** measures volume.
Volume is how much space something takes up.



A **ruler** measures how long something is. This ruler measures in inches and centimeters.



Choose a tool to measure how long your shoe is.

Write what it measures in inches and centimeters.



Safety in Science

Safety means staying out of danger.

Follow these safety rules when you do activities.

1. Never taste or smell materials unless told to do so.
2. Keep your workplace neat and clean.
3. Tell your teacher immediately about accidents.
4. Listen to your teacher's instructions.
5. Wash your hands well after each activity.

Write another rule for the chart.



Handwriting practice lines consisting of a solid top line, a dashed middle line, and a solid bottom line.



The girl washes her hands with soap and water.

 **Picture Clues** **Tell** how the girl stays safe.

Tie your hair back if it is long.

Wear safety goggles when needed.

Wear gloves to keep your hands safe.

Handle scissors and other equipment carefully.

Clean up spills immediately.

You spill water on the floor.

Circle the rule that you should follow.

Write why it is important to follow safety rules.



How do scientists find answers?

1.NS.1 Conduct investigations that may happen over time as a class, in small groups, or independently. **1.NS.7** Recognize a fair test.



Tell what the person might want to learn.

Inquiry

Explore It!

How do scientists answer questions?

- ☐ Think about the following question.

Can sunlight warm an object?

Answer the question as a scientist would.

- ☐ 1. **Observe** a piece of paper. Feel it. It is (warm/cool).

- ☐ 2. Make a **prediction**.

The paper will get (warm/cool) in sunlight.

- ☐ 3. Test your prediction. Put the paper in sunlight.

Wait 15 minutes. The paper got (warm/cool).

Materials



black paper

Explain Your Results

- 4. **Draw a Conclusion** Can sunlight warm objects?

Tell how you know.





I will know how
scientists ask questions
and find answers.

Word to Know

investigate

Science Inquiry

You ask questions when you do science.

You investigate to find answers.

To **investigate** is to look for answers
to questions.

Scientific methods are a way
to investigate.

Scientific methods have many steps.

Circle the word that means to look
for answers to questions.

Picture Clues Look at the picture.

Ask a question the scientist might ask
about plants.



This scientist
investigates plants.

Scientific Methods

Ask a question.

Ask a question that you want answered.

How does sunlight change the way plants grow?

Make your hypothesis.

Tell what you think might be the answer to your question.

If a plant is moved away from sunlight, then it will grow toward the sunlight because plants need light.

Plan a fair test.

Change only one thing.

Keep everything else the same.

Move one plant away from the window.



Tell another hypothesis.

Do your test.

Test your hypothesis.

Do your test more than once.

Observe the results of your test.

See if your results are the same.

Collect and record your data.

Keep records of what you find.

Use words or drawings to help.

Draw a conclusion.

Decide if your observations match your hypothesis.

Tell what you decide.

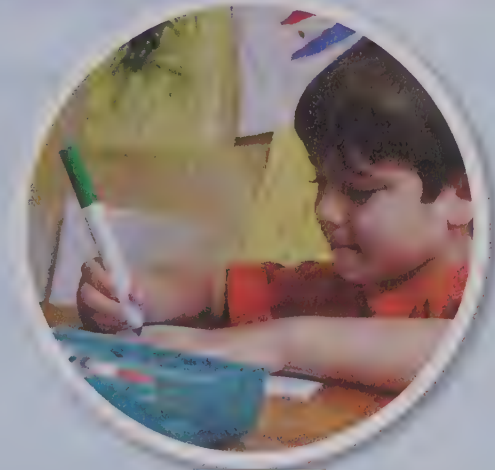
Compare your conclusion with a partner's.



Lightning Lab

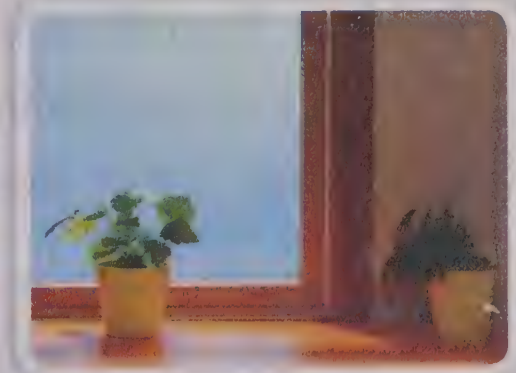
Fast Claps

How many times can you clap your hands in one minute? Plan a test with three steps.
Do your test.



The boy draws a picture to keep records.

Picture Clues **Write** how sunlight changes the way plants grow.



Tell how you know.

Lesson 5

How do scientists share data?

Envision It!



Write what you observe about the dog.

1.NS.1 Use a scientific notebook to record predictions, questions and observations about data with pictures, numbers or in words. **1.NS.5** Discuss observations with peers and be able to support your conclusion with evidence.

Inquiry Explore It!

What are some ways to record and share data?

- ☐ 1. Stack the cups as high as you can. Make a tally mark each time you add a cup.
- ☐ 2. **Record** the total using a number.
- ☐ 3. Repeat 3 more times.

Explain Your Results

4. Compare data with others. Tell any pattern you find.
5. You **recorded data** in 2 ways. How else could you have recorded data?

Materials



10 paper cups

Trial	Number of Cups	Total
1		
2		
3		
4		



I will know how scientists share the data they collect.

Words to Know

data

record

Data

You collect information when you do science.

This information is called **data**.

You can use pictures and words to show what you observe.

You can use numbers too.



Picture Clues **Draw** the data that the girl in the picture might draw.

Record Data

You **record** when you write or draw what you learn.

A chart is a way to record data.

Ask five people if they like a cat, a dog, or a bird best.

Fill in a square in the chart next to the animals your classmates choose.



Favorite Animals

cat					
dog					
bird					



At-Home Lab

Favorite Pet Name

Think of three pet names. Ask six people which name they like best. Make a chart to record their choices.



Show Data

You can use charts to show data.

You can also use graphs.

Use your data to make a picture graph.

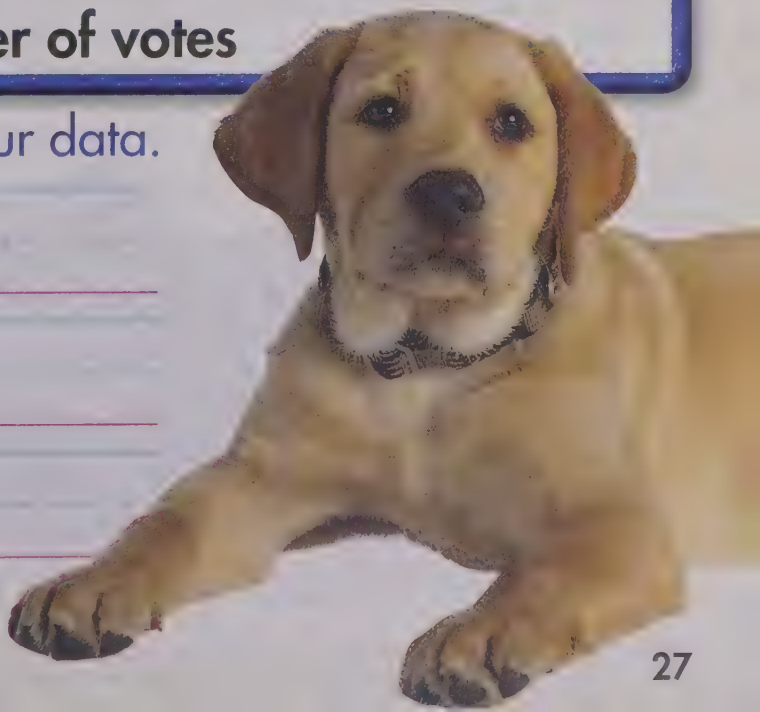
Count the votes for each pet.

Draw one animal for each vote.



Favorite Animals						
Pet	 cat					
	 dog					
	 bird					
		1	2	3	4	5
Number of votes						

Write a conclusion from your data.



How do you know the mass of objects?

Follow a Procedure

- ☐ 1. **Measure** the mass of a cup.
First, put the cup on one side of a balance.
Next, slowly add gram cubes to the other side.
Then, stop when the balance is level.
Last, **record** the mass on the chart.
- ☐ 2. Measure the mass of 10 beans.
Record.
- ☐ 3. Measure the mass of the cup with the 10 beans inside. Record.

Materials



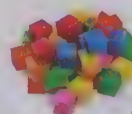
plastic cup



10 beans



balance



gram cubes

Inquiry Skill Scientists observe what happens and **record** their results.



Mass of Objects

Object	Mass (grams)
Cup	
10 beans	
Cup with 10 beans	



Analyze and Conclude

4. Look at your data.

Add the mass of the cup and the beans.



$\underline{\hspace{2cm}}$ grams + $\underline{\hspace{2cm}}$ grams = $\underline{\hspace{2cm}}$ grams
 (cup) (beans) (cup with 10 beans)

5.  **Draw a Conclusion** Did the cup and beans have the same mass together as they did separately?

Meteorologist

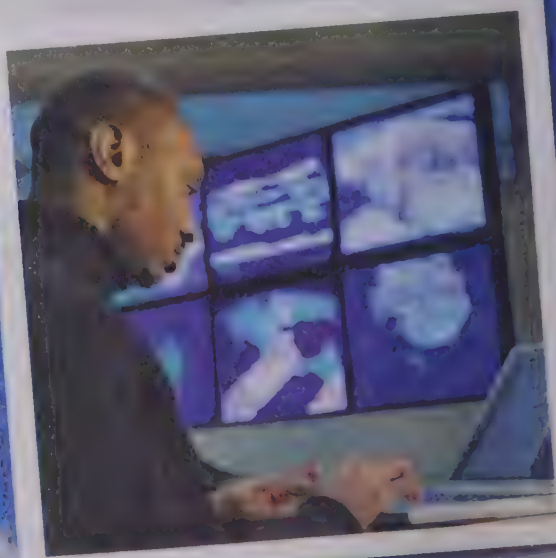
1.N5.1, 1.N5.5, 1.N5.6

Dr. J. Marshall Shepherd spent many years as a research meteorologist at NASA. He now teaches about weather.

A meteorologist is a scientist who studies or predicts the weather. Some meteorologists use special weather tools to collect data.

Some meteorologists make special maps about the weather. Meteorologists share their predictions about what the weather will be like.

 **Picture Clues** Look at the picture of Dr. Shepherd working. **Write** what tools he uses to study the weather.



Vocabulary Smart Cards

inquiry
observe
tool
measure
safety
investigate
data
record

Play a Game!

Cut out the cards.

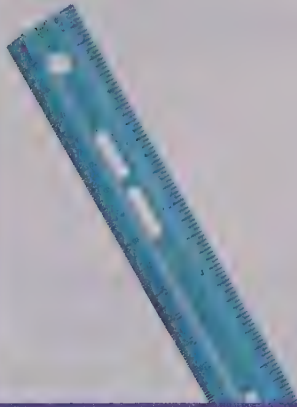
Work with a partner.

Pick a card.

Act out the word.

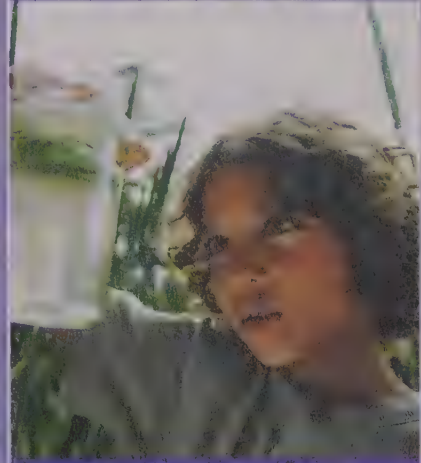
Have your partner guess the word.

measure



medir

inquiry



indagación

safety



seguridad

observe



observar

investigate



investigar

tool



instrumento

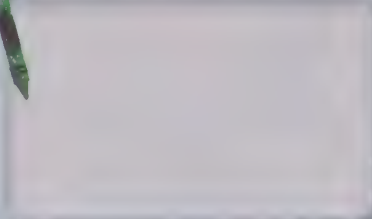


looking for answers



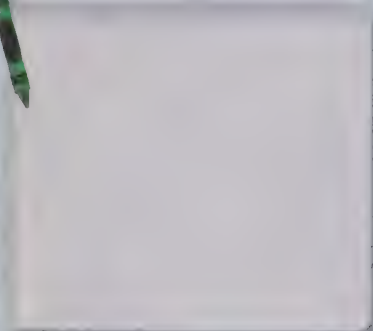
buscar respuestas

to use a tool to find
the size or amount of
something



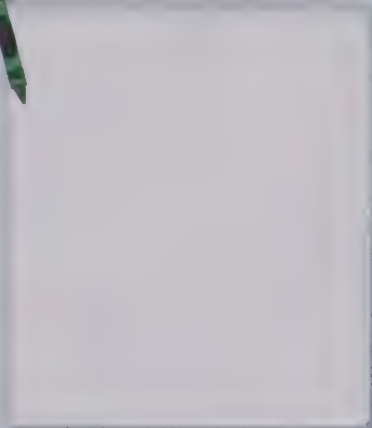
usar un instrumento
para saber el tamaño
o la cantidad de algo

when you use your
senses



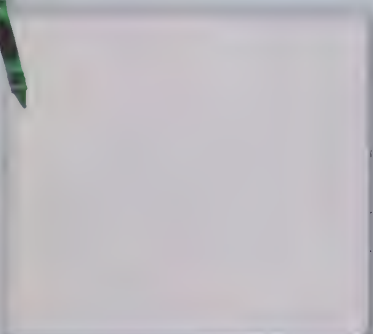
cuando usas tus
sentidos

staying out of danger



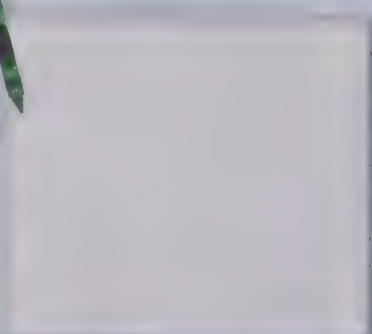
estar fuera de peligro

something that makes
work easier



algo que hace más
fácil el trabajo

to look for answers to
questions



buscar respuestas a
las preguntas



data



datos

record

Favorite Animals

cat						
dog						
bird						

registrar



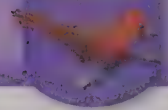
information you
collect

información que
reúnes

when scientists write
or draw what they
learn

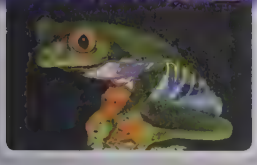
cuando los científicos
escriben o dibujan lo
que descubren



**Lesson 1**

What questions do scientists ask?

- Scientists ask questions about the world.
- Scientists answer questions with **inquiry**.

Lesson 2

What skills do scientists use?

- Scientists use their senses to **observe**.
- Your senses help you describe things.

Lesson 3

How do scientists use tools?

- You can use **tools** to **measure** objects.
- Always follow **safety** rules.

Lesson 4

How do scientists find answers?

- Scientists use many methods to **investigate**.
- Scientists test things many times.

Lesson 5

How do scientists share data?

- Scientists observe and **record data**.
- You can use charts to record.





Lesson 1



1.NS.2, 1.NS.3

1. **Vocabulary** What is inquiry?2. **Apply** Some scientists ask questions about weather.
Write a question you have about weather.

Lesson 2



1.NS.3, 1.NS.4

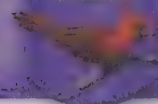
3. **Compare** **Circle** the scientist who listens to observe.

Lesson 3



1.NS.6

4. **Picture Clues** **Write** how the children stay safe.

**Lesson 4** 1.NS.2, 1.NS.7

5. **Vocabulary Write** what scientists do when they investigate.

Lesson 5 1.NS.1, 1.NS.5

6. What do scientists use to keep records? **Circle** the letter.

A. words and pictures

C. safety

B. tools like cars

D. scientific methods

Got it?

Stop! I need help with



Go! Now I know



What are they
making?

The Design Process


Try It!

How can you design a top?

Lesson 1

What is technology?

1.DP.1, 1.DP.2, 1.DP.3

Lesson 2

What are objects made of?

1.4.1

Lesson 3

What is the design process?

1.DP.3, 1.DP.6, 1.4.2


Investigate It! How can you build a boat?

Write what you think they will make.

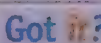


How do you solve problems?

Go to www.myscienceonline.com and click on:


UntamedScience™

Ecogeeks answer your questions.


Got it? 60-Second Video

Everything you learned in 60 seconds.


my planet diary

Learn about new discoveries.


Investigate It! Simulation

Quick and easy online experiments

How can you design a top?

1. Make the top in the picture.



Materials



Disk



clay



stir stick



timer or stopwatch

Inquiry Skill

You can use what you observe to **infer**.

2. **Measure** Test your top.
How long did it spin? **Record**.
3. **Redesign** your top to spin longer.
Draw and label your **design**.



Time (seconds)

First top

Second top

4. Make your new top. Repeat Step 2.

Explain Your Results

5. **Infer** Why did one top spin longer?



Sequence

Sequence means to tell what happens first, next, and last.

Block Castle

You want to build a block castle.

First, you gather blocks.

Next, you stack the blocks.

Last, you look at your castle.

It is very high!



Let's Read
Science!

Practice It!

Write what comes next.

First

I gather blocks.

Next



Last

I look at my castle.

Lesson 1

What is technology?

Envision It!



Write the parts of the bicycle.
Use words from the list.



1.NS.1 Identify a need or problem to be solved. **1.NS.2** Brainstorm potential solutions. **1.DP.1** Select a solution to the need or problem. (Also **1.DP.2**, **1.DP.3**, **1.NS.4**)

Inquiry Explore It!

Which tool works better?

- ☐ **1.Predict** Which tool will pick up cubes better?
- ☐ **2.** Use each tool to pick up cubes.

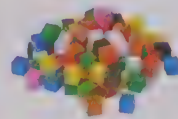
Explain Your Results

- 3. Record** What happened when you used each tool?



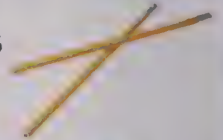
- 4. Draw a Conclusion** Which tool worked better? Explain.

Materials



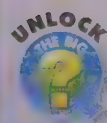
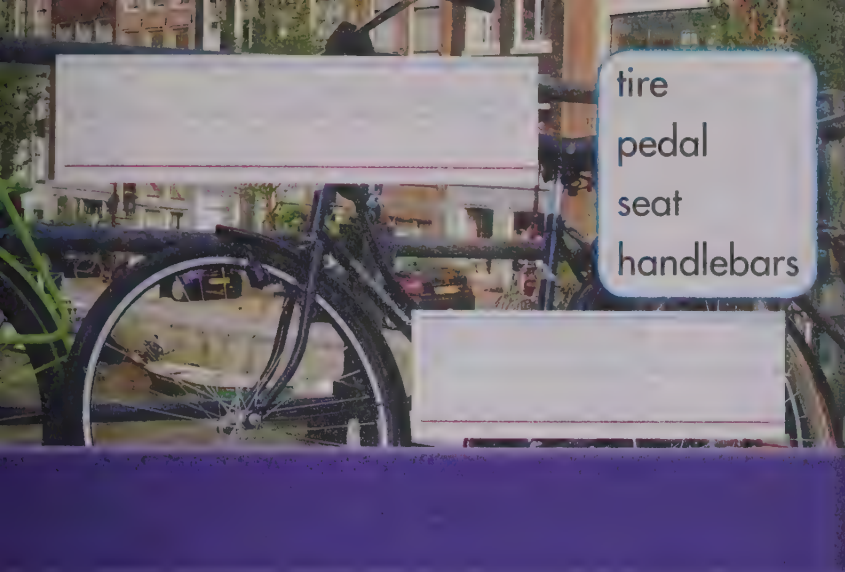
gram cubes

two pencils



forceps





I will know how technology can help people solve problems.

Word to Know

technology

Technology

Bicycles are a kind of technology.

Technology is using science to help solve problems.

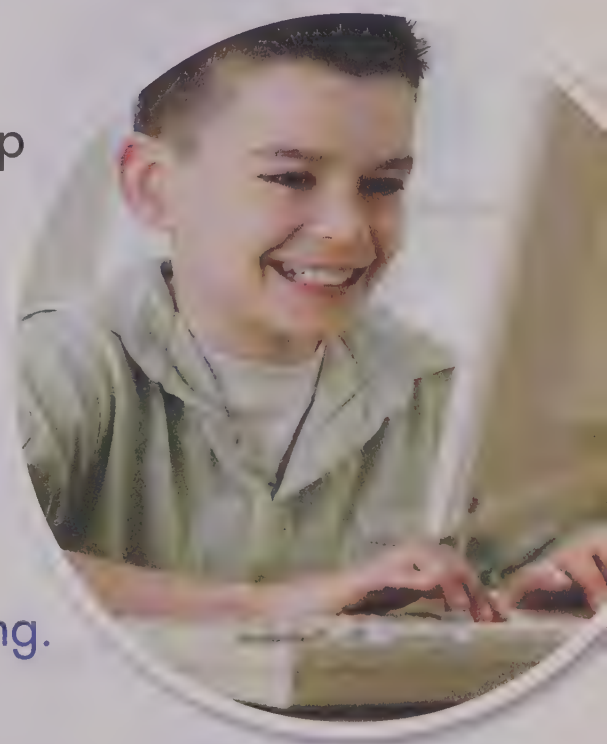
Scientists use technology to make discoveries.

Sometimes scientists discover new technology.

Circle the technology the boy is using.

Tell what it is.

Tell what would happen if a bicycle did not have one of its pedals.



Technology helps scientists do their work.



Go Green

Helping Earth

Think of a technology that helps keep the air or water clean. Tell how it helps.



This boy uses a pencil to communicate. A pencil is technology.

Solve Problems

Technology helps people solve problems.

One problem is that people need to communicate with each other.

They might not be in the same place.

They use a telephone.

A telephone is technology.

Underline a problem that technology solves.

Sequence Look at the time line.
Write what people invented first.



Technology over Time



1870

The first all metal bicycle is invented.



1876

The first telephone call is made.



1946

The first computer is built.

Help People

Technology helps people stay safe.

People use cars to get from place to place.

Seat belts help make cars safe.

Air bags help make cars safe.

Safety seats help keep children safe.



Technology helps keep people safe in cars.

Underline three kinds of technology a car has.

Draw another kind of technology.

Tell how it solves a problem or helps people.



2001

MP3 players become popular.

Draw something you would like to invent.

Lesson 2

Envision It!

What are objects made of?

I Use all senses as appropriate to sort objects as being composed of materials that are naturally-occurring or human-made, or a combination of the two. (Also **1.1.1.3**)



Tell three objects that people made.

my planet DiARY for Indiana

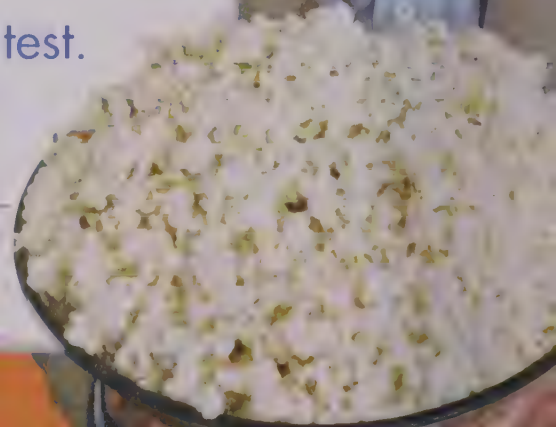
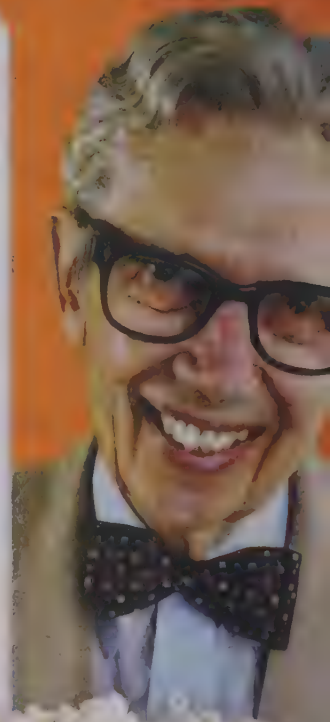
INVENTION!

Read
Together

Do you like to eat popcorn? Orville Redenbacher wanted to invent corn that made the best popcorn. He tested many kinds of corn in Indiana. People test things to find what works best. People can test things they make. People can test things that grow on their own too.

Underline what Orville Redenbacher tested.

Write something you would like to test.





I will know how
to sort objects by their
materials.

Word to Know

natural

Different Materials

Objects are made of materials.

Some materials are natural.

Natural means not made by people.

Materials that come directly from
Earth are natural.

Wood is natural.

Rocks and minerals are natural too.

Other materials are made by people.

People make plastic.

Write one natural material in the picture.

Write one material made by people.



Sort Objects

You can sort objects by the materials they are made of.

One group might have objects made of natural materials.

Another group might have objects with materials made by people.

Some objects are made of both.

You can use your senses to sort.

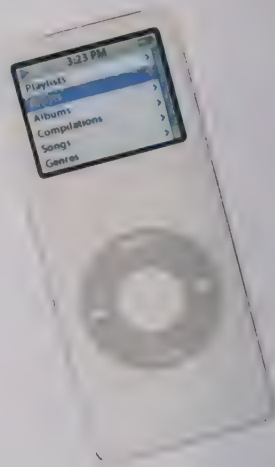
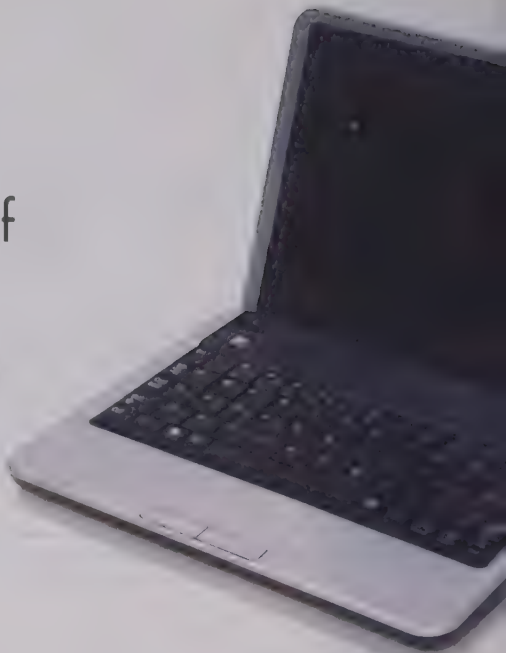
You can feel the material of objects.

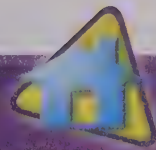
You can sort objects by how they look, sound, taste, or smell.

Circle the objects made only of natural materials.

Draw an X on the objects that have materials made by people.

Sequence **Tell** what you did first.

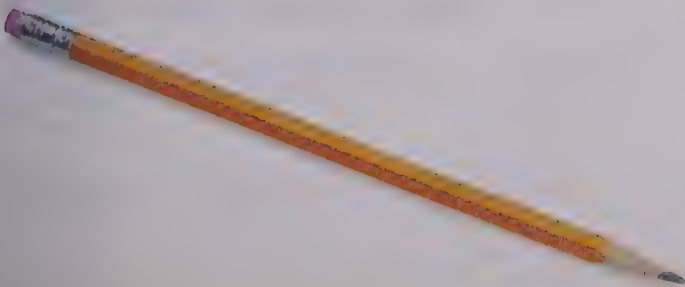




At-Home Lab

Materials

Find two objects. Tell what materials the objects are made of. Tell if the materials are natural or made by people.



Lesson 3

Envision It!

What is the design process?

1.1.3 Evaluate and test how well the solution meets the goal. **1.1.4** Communicate the solution with drawings or prototypes. **1.1.5** Construct a simple model for an animal with natural and human-made materials taking care to use tools and materials safely and properly. (Also **1.1.1**, **1.1.2**, **1.1.5**, **1.1.6**, **1.1.7**)



Draw a line from the bowl to each object that might be inside.

Inquiry Explore It!

Which design works best?

- ☐ 1. Pick a bird feeder to build.
- ☐ 2. Build it. Put it outside.
- ☐ 3. **Observe** for 5 days.

Record.

Compare your feeder with others.



Explain Your Results

4. Which **design** worked the best?



5. How can you **redesign** your feeder to attract more birds?

Materials

Bird Feeder Chart

Day	Feeder Type	Number of Birds
1		
2		
3		
4		
5		

Build a Bird Feeder

1. Planning (10 minutes)
2. Design (10 minutes)
3. Build (10 minutes)
4. Test (10 minutes)
5. Observe (10 minutes)
6. Record (10 minutes)
7. Explain (10 minutes)
8. Redesign (10 minutes)

Bird Feeder Chart

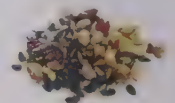


binder clips



scissors

Build a Bird Feeder



bird feeder food



string



containers





I will know how to find a solution.

Words to Know

goal

label

solution

A Problem and a Goal

Wood ducks are animals that need shelter.

This is a problem.

You want to help wood ducks find shelter.

First, you set a goal to design a house for wood ducks.

A **goal** is something you want to do.

Your house for wood ducks will be a solution.

A **solution** solves a problem.

Circle the problem.

Underline the goal.



Wood ducks do not make their own shelter. They use shelters made by people or other animals.

Plan and Draw

Next, you make a plan to build your house for wood ducks.

You write about your house for wood ducks.

You draw your house for wood ducks.

 **Sequence** First, you set a goal. **Write** what you will do next.



Lightning Lab

Make a Plan

Pick an object in your classroom. Write a plan about how to make the object. Draw how to make the object.

Draw your house for wood ducks.



Choose Materials

Next, you decide what materials to use.

You choose something for the walls.

You might choose wood.

You choose something to hold the walls together.

You might choose nails.

You need something on the inside so the wood ducks can climb out.

You might choose a piece of screen.

Circle three things you might use to make the house for wood ducks.



tape



wood



screen



nails



microphone

Wood ducks live in many parts of the Midwest and Eastern United States.



Make and Test

Next, you make your house for wood ducks.

You decide where to put it.

You test the house.

You check the house every day.

You see if wood ducks live there.

Write how you know a house for wood ducks works well.





You can share your solution with other people.

Record and Share

You decide how well your solution works.

You plan again to make your solution better.

Next, you record your new plan.

You write and draw.

You use labels.

A **label** shows what something is.

This helps you remember what you learn.

You can use your solution again.

Last, you can show others your solution. You can tell how your solution meets your goal.

Label the house for wood ducks.

Sequence Tell the sequence you can use to build a house for wood ducks. Use the words first, next, and last.

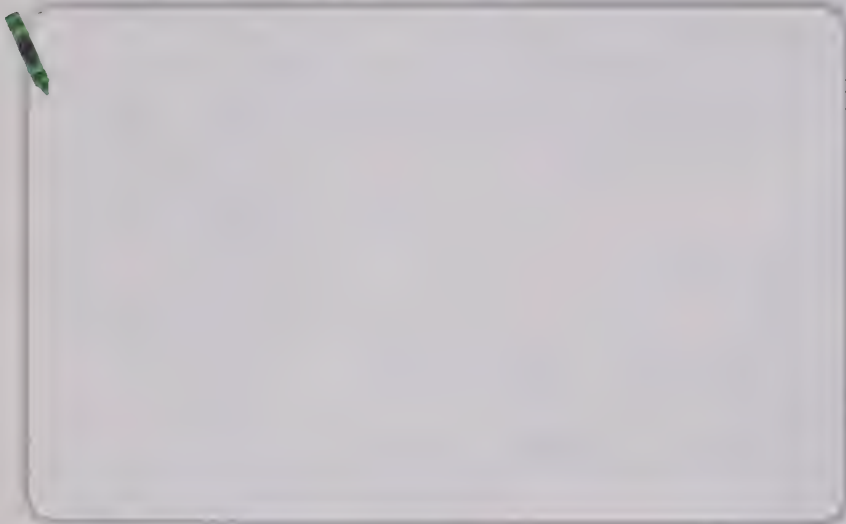


How can you build a boat?

In this activity you will build a **model** of a boat using foil.

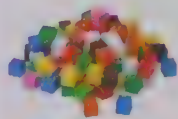
Follow a Procedure

- ☐ 1. **Design** a boat that will float.
Draw your design.



- ☐ 2. Build your boat. Test it in the tub of water.

Materials



gram cubes



foil



plastic tub of water

Inquiry Skill

When you **predict**, you tell what you think might happen.



3. Add gram cubes to your boat until it sinks. **Record.**
4. **Redesign** your boat to hold more cubes. **Predict** how many gram cubes it will hold before it sinks. Record.
5. Test your prediction. Add cubes to your boat until it sinks. Record.



Analyze and Conclude

6. **Draw a Conclusion** Did your boat hold more or less cubes than your **prediction**?

7.  How did you **redesign** your boat to hold more gram cubes?

Go Green!

Solar Power



1.DP.2

You use electricity every day. Electricity is made in many ways. Using coal to make electricity makes pollution. This pollution needs to be cleaned up.

Scientists study solar power technology. Solar power uses energy from the sun to make electricity. Energy from the sun makes much less pollution than coal.

Write how you can use less electricity.



Some traffic lights use solar power.

Vocabulary Smart Cards

technology
natural
goal
solution
label

Play a Game!

Cut out the cards.

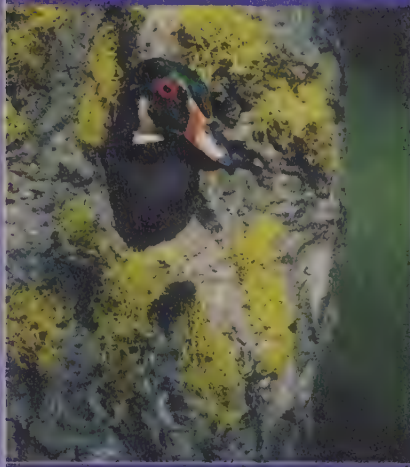
Work with a partner.

Pick a card.

Show your partner the front of the card.

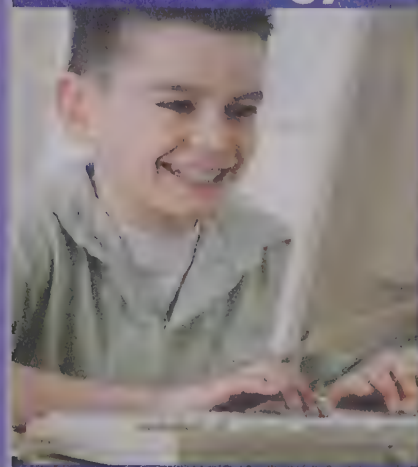
Have your partner tell what the word means.

solution



solución

technology



tecnología

label



rótulo

natural



natural

goal



objetivo

using science to help
solve problems



usar las ciencias para
resolver problemas

something that solves
a problem



algo que resuelve un
problema

not made by people



no hecho por las
personas

shows what
something is



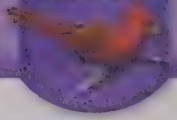
palabra que identifica
una cosa

something you want
to do



algo que quieres
hacer



**Lesson 1**

What is technology?

- **Technology** is any tool that helps people.
- People use technology to solve problems.

Lesson 2

What are objects made of?

- Materials not made by people are **natural**.
- You can sort objects by their materials.

Lesson 3

What is the design process?

- Something you want to do is a **goal**.
- You can record your **solution** with **labels**.





Lesson 1



1.DP.1, 1.DP.2, 1.DP.4

1. **Vocabulary** Put an **X** on a kind of technology.



2. **Apply** Technology helps solve problems.
Write a problem you would like to solve.



Lesson 2



1.4.1

3. **Sort** **Circle** the object with no natural materials.



4. **Describe** **Write** an object that has natural materials and materials made by people.

Lesson 3

 1.DP.7, 1.DP.8, 1.4.3

5. **Sequence Write** what you do first to solve a problem.

6. How could you test a new ant farm? **Circle** the letter.

A. put food inside

C. draw the ant farm

B. tell about the ant farm

D. see if ants will live there

Got it?

 Stop! I need help with



 Go! Now I know

What do pill bugs need?

All pets need habitats. A friend gives you pet pill bugs. You must design a habitat for them. What will your pill bugs need?

Find a Problem

- ☐ 1. How will you meet each need?

Pill Bug Needs Chart

Need	How I will meet the need.
Air	
Shelter	
Food (energy)	
Water	



Plan and Draw

- ☐ 2. List the steps to build the habitat.



- ☐ 3. Draw your **design**.

You will use the materials on the next page.



1.4.3 Construct a simple shelter for an animal with natural and human-made materials taking care to use tools and materials safely and properly. 1.DP.1 Identify a need or problem to be solved. 1.DP.2 Brainstorm potential solutions. 1.DP.3 Document the design throughout the entire design process. 1.DP.4 Select a solution to the need or problem. 1.DP.5 Select the materials to develop a solution. 1.DP.6 Create the solution. 1.DP.7 Evaluate and test how well the solution meets the goal. 1.DP.8 Communicate the solution with drawings or prototypes. 1.DP.9 Communicate how to improve the solution.

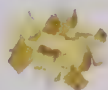
Choose Materials

☐ 4. Circle the materials you will use.

Possible Materials



pill bugs



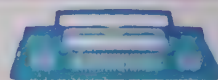
food



string



plastic jar and
lid with holes



plastic
aquarium



loam soil



twigs



soil



water



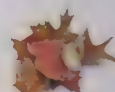
eraser



balloon



cotton balls



leaves

☐ 5. Tell which need each material meets.



Handwriting practice lines for the answer to question 5.

Make and Test

- ☐ 6. Make the habitat you **designed**.
Follow your plan.
7. Draw your pill bugs in the habitat.



Record and Share

-  8. **Observe** your design for one week.
Observe the habitat.
Observe the pill bugs.

Day Observations	
Day	Observation
1	
2	
3	
4	
5	



These pill bugs are shown
five times their regular size.

- ☐ 9. Compare your habitat with other groups.
How were the habitats the same?



- ☐ 10. How were the habitats different?

- ☐ 11. How could you **redesign** your pill bug habitat?



Using Scientific Methods

1. Ask a question.
2. Make a hypothesis.
3. Plan a fair test.
4. Do your test.
5. Collect and record data.
6. Tell your conclusion.

Design a New Hat

- Design a new hat.
- Draw a picture of the hat. Label parts of the hat.
- Tell about your picture.

 1.NS.5, 1.DP.8

Write a Poem

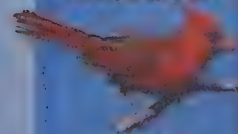
- Think of a goal.
- Write a poem about a solution for your goal.

 1.DP.2

Test Materials

- Draw lines with a pen, a marker, and a crayon.
- Use an eraser to erase your lines.
- Write a sentence about which material erases best.

 1.NS.2



Physical Science

Chapter 3

Matter

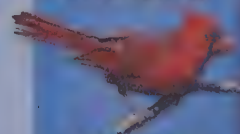


How can you describe
matter?



What is inside a **bubble?**





Matter

**Try It!**

How can you use a tool to measure?

Lesson 1

What is matter?

1.1.1

Lesson 2

What are solids, liquids, and gases?

1.1.2

Lesson 3

What is a mixture?

1.1.3



Investigate It! How are objects different?

Tell how you make bubbles.



How can you describe matter?

Go to www.myscienceonline.com and click on:

**Untamed Science™**

Go on a science adventure with the Ecogeeks!

Got it?**60-Second Video**

Watch and learn.

**Explore It! Animation**

Interact with the lab and see what happens!

Vocabulary Smart Cards

Hear and see your vocabulary words online!

How can you use a tool to measure?

- ☐ 1. Use Straw Ruler A.

Measure the width of your desk.

How many straw pieces wide is it?

Record. Measure 3 more things.

- ☐ 2. Use Straw Ruler B. Measure each thing again. Record.

Materials

Straw Ruler B

Straw Ruler A

Inquiry Skill

You can estimate before you **measure**.

What I Measured	Measured Using Straw Ruler A	Measured Using Straw Ruler B

Explain Your Results

3. **Infer** Why were your **measurements** different?



4. Why measure with the same size unit?

🎯 Main Idea and Details

The **main idea** is what the sentences are about.

Details tell about the main idea.



A Clay Cat

The object is a clay cat.

The ears are blue triangles.

The whiskers are long and yellow.

Practice It!

Write two details that tell about the main idea.

Main Idea

The object is a clay cat.



Detail

Detail

What is matter?



Use all senses as appropriate to identify the component parts of objects and the materials from which they are made. (Also ENSE ENSE)

Draw another object in the classroom.

my planet DiARY

Fact or Fiction?

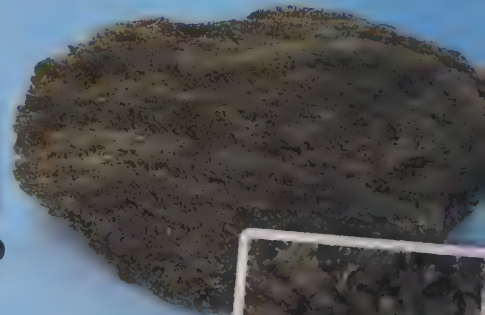
Read Together

Pumice is a rock. Do you think it will sink or float?

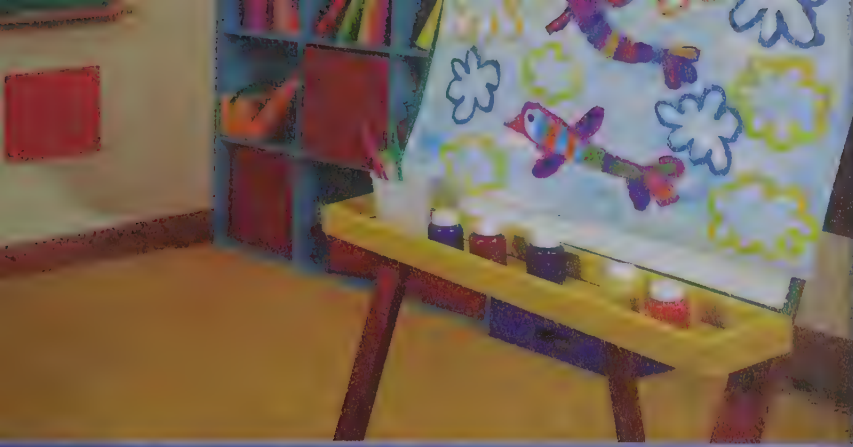


Pumice forms when lava from a volcano cools and hardens quickly. Pumice has lots of bubble holes. These holes are filled with air. The air bubbles cannot escape. Pumice floats because it is full of air bubbles.

Sometimes the bubble holes fill with clay. Will pumice filled with clay float? Why?



pumice



I will know how to describe matter.
I will know how to group matter.

Words to Know

matter weight
mass

Tell about the object.

Matter

Matter is anything that takes up space.

Matter has mass.

Mass is the amount of matter in an object.

The table is matter and has mass.



The table has more mass than the glue bottles.

Main Idea and Details Write two details about matter.

Main Idea

Matter takes up space.



Detail

Detail

Objects and Matter

All objects are made of matter.

You can describe objects many ways.

Objects can be different colors.

Objects can be different sizes and shapes.

Objects can be hard or soft.

The red marble is round and hard.

Label the objects.

square purple small

Draw an X on two soft objects.



Describe and Group Objects

Objects can feel different.

The wall feels smooth.

Objects can be heavy or light.

Weight is how heavy an object is.

The books are heavy.

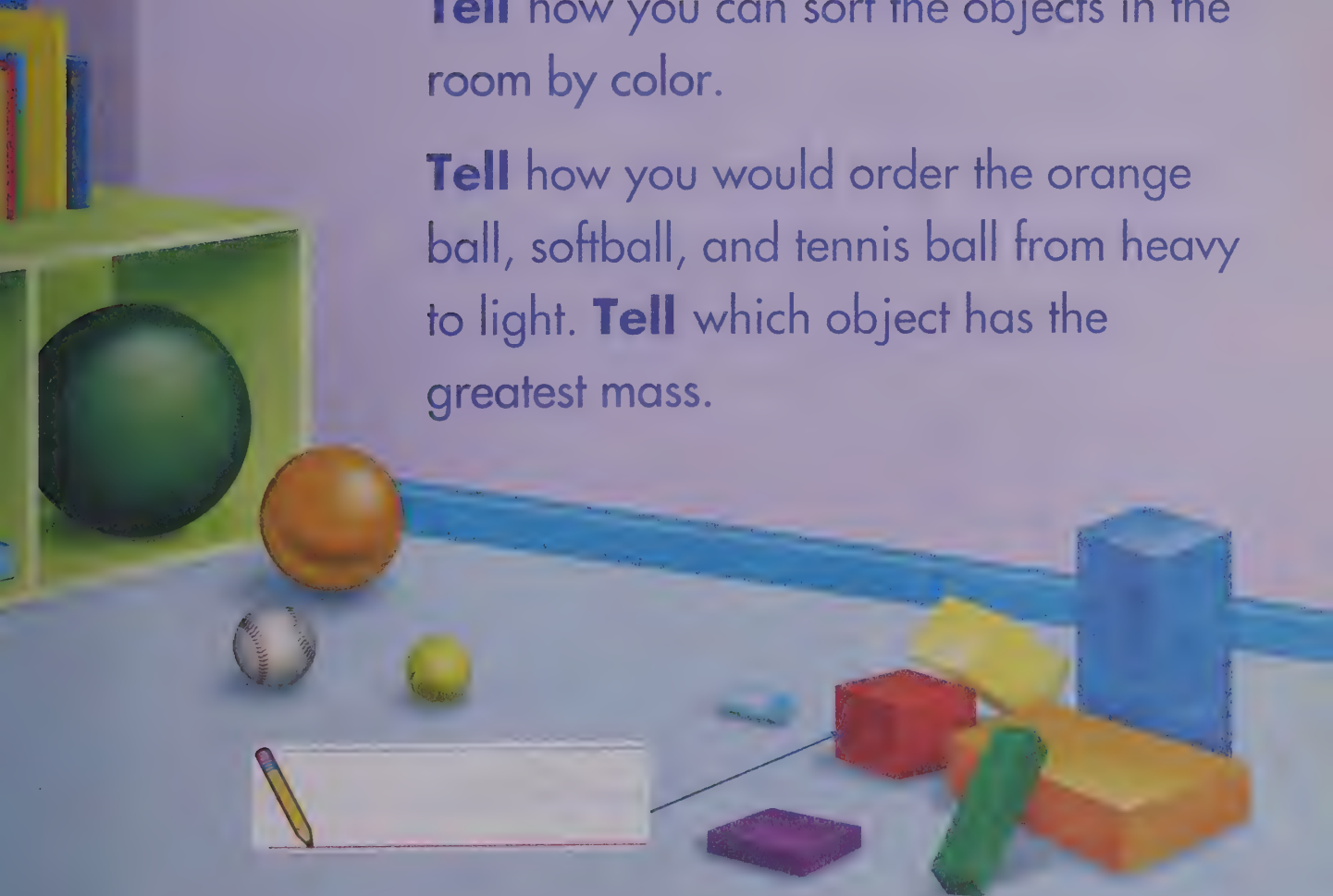
You can group objects by how they are alike.

The balls and marbles are alike.

The balls and marbles are round.

Tell how you can sort the objects in the room by color.

Tell how you would order the orange ball, softball, and tennis ball from heavy to light. **Tell** which object has the greatest mass.



More Ways to Describe Objects

Objects can float or sink.

Float means to stay on top of a liquid.

Sink means to fall to the bottom of a liquid.

Lemonade is a liquid.

The ice cubes float in the lemonade.

Objects can be different temperatures.

The lemonade is cold.

Objects can be made of different materials.

The sink is metal.

The timer is plastic.

Draw an X on something that sinks.

Circle something that is hot.





Lightning Lab

Measure Length

Length is another way to describe objects. Use paper clips to measure your desk. How wide is it? How long is it? Do the same thing using your hand, your shoe, or cubes.

Write two words that describe the lemonade.



Lesson 2

Envision It!

What are solids, liquids, and gases?



1.1 Characterize materials as solid or liquid, investigate their properties, record observations and explain the choices to others based on evidence (e.g., physical properties). (Also 1.1.2)



Draw an X on an object that is filled with a gas.

Inquiry

Explore It!

What are the states of matter like?

- ☐ 1. Gently squeeze each bag. **Observe.**
- ☐ 2. Did the shape of the rock change?
Did the shape of the water change?
Did the shape of the air change?

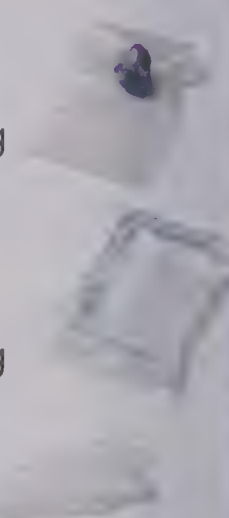


Materials

rock in
sealed
plastic bag

water in
sealed
plastic bag

air in
sealed
plastic bag



Explain Your Results

- 3. **Classify** How are solids, liquids, and gases different?





I will know that matter can be a solid, a liquid, or a gas.

Words to Know

solid	liquid	gas
freeze	melt	boil

Solids

Matter can be a solid, liquid, or gas.

A **solid** has its own shape.

A solid has its own size.

A solid does not change shape when it is moved.

The box is a solid.

The toys are solids.

Main Idea and Details

Write two details about solids.





Liquids and Gases

A **liquid** takes the shape of its container.

You can pour a liquid.

Water is a liquid.

A **gas** can change shape and size.

A gas takes the shape of its container.

A gas fills all of its container.

You cannot see most gases.

Air is a gas.

Circle something that contains a liquid. **Tell** one thing about each kind of matter.



At-Home Lab

Kinds of Matter

Gather objects.

Put the solids together.

Put the liquids together.

Tell which objects contain a gas.

How Matter Changes

Matter can change form.

Water freezes into ice when it gets very cold.

Freeze means to change from a liquid to a solid.

Ice melts when it gets warm.

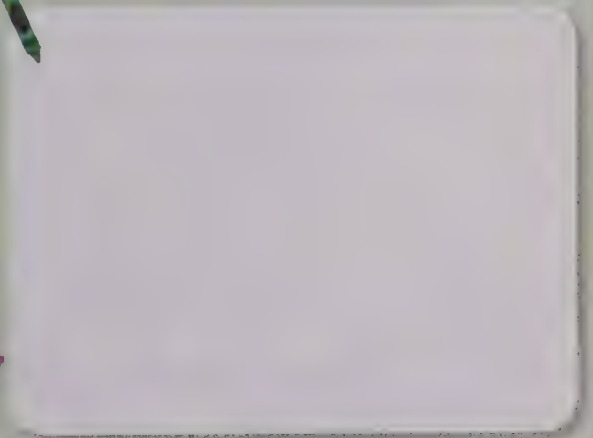
Melt means to change from a solid to a liquid.

Water can evaporate when it boils.

Boil means to heat a liquid until it becomes a gas.

Circle a liquid that is changing into a gas.

Draw a solid that would melt in the sun.



What is a mixture?

1 Predict the results of, and experiment with methods (e.g., sieving, evaporation) for separating solids and liquids based on their physical properties. (Also **1.NS.3**)

Tell how you could get the coins.

Inquiry Explore It!

How can you separate solids and liquids?

- ☐ 1. Put $\frac{1}{2}$ spoonful of lemonade powder into a cup with water. Stir. **Observe.**

- ☐ 2. Wait 3 days. Observe. **Record.**



Explain Your Results

- 3. **Infer** How did the solid separate from the water?

Materials



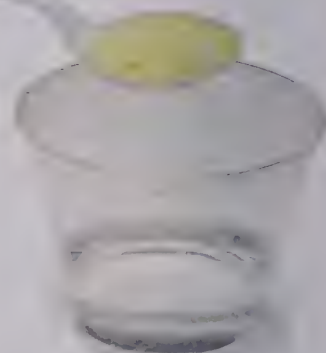
cup with water



spoon



lemonade powder





I will know how
to separate a mixture
of solids and liquids.

Words to Know

mixture

evaporate

Mixtures

A **mixture** has more than
one kind of matter.

A mixture can have solids and liquids.

Soup is a mixture.

The carrots and noodles
in soup are solids.

The broth in soup is a liquid.

Circle two solids in
the soup.



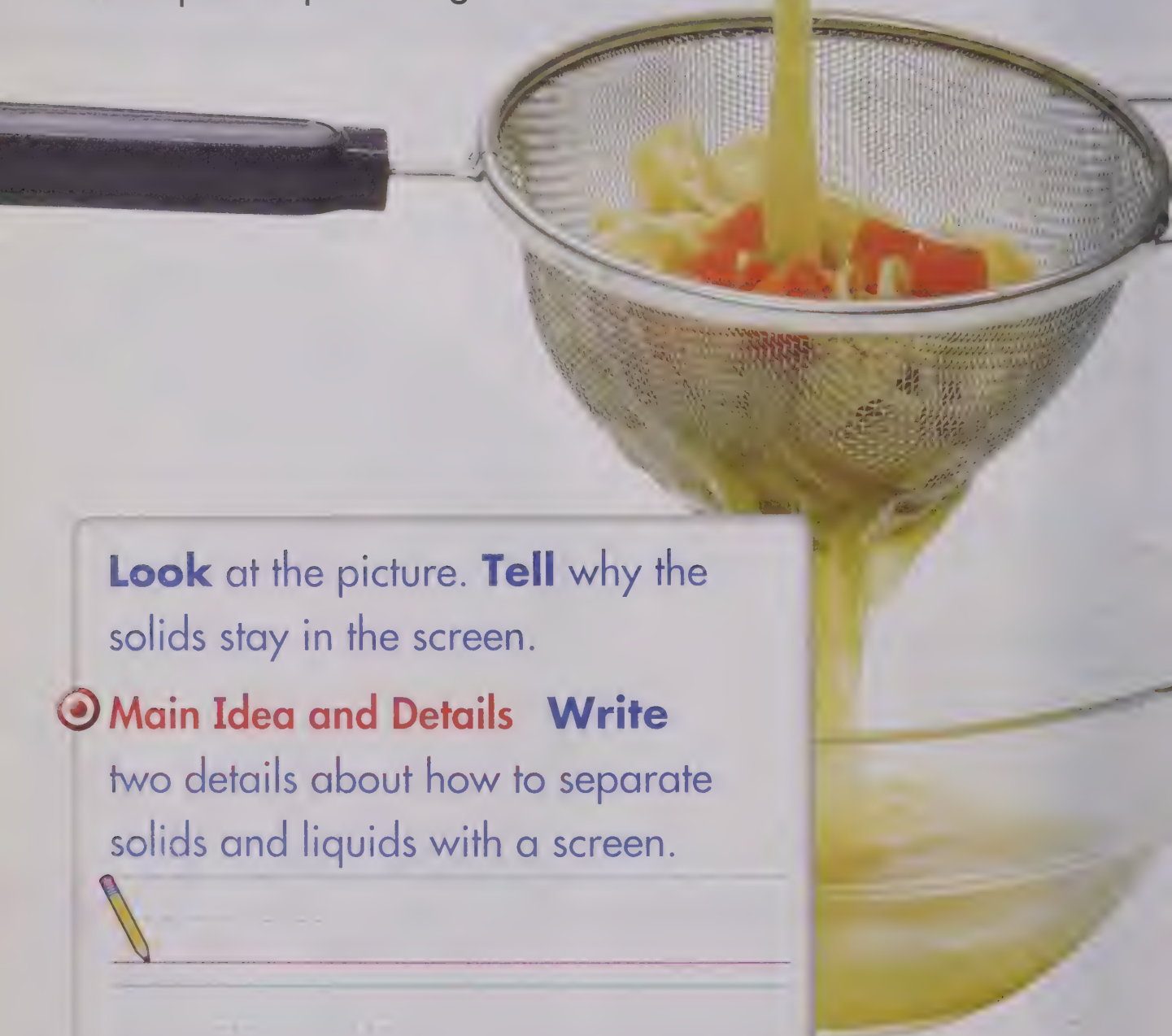
Screen

You can separate things in a mixture.

You can pour soup into a screen.

The solids stay in the screen.

The liquid drips through the screen.



Look at the picture. **Tell** why the solids stay in the screen.

Main Idea and Details Write
two details about how to separate
solids and liquids with a screen.



Evaporate

You leave soup out for a long time.
The broth evaporates.

Evaporate means to change from
a liquid to a gas.

The gas does not stay in the bowl.
The broth separates from the carrots
and noodles.

Underline what it means to
evaporate.

Draw an arrow to show where the
broth went.



At-Home Lab

Find a Mixture

Look in the
refrigerator. Tell what
mixtures you find.



How are objects different?

Follow a Procedure

☐ 1. **Observe** Look at all the objects.

☐ 2. **Classify**

Put the solid objects together.

Put the liquid objects together.

Materials

gram
cubes



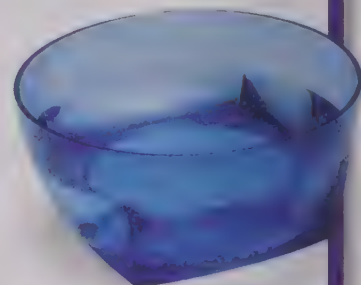
metal marbles



ice cube



water

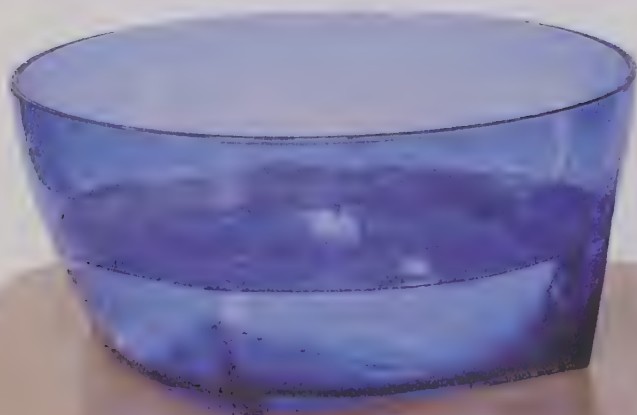


milk



Inquiry Skill

To **observe** means to look carefully.



3. Classify each object as hard or wet.
Use the chart. Make an **X** for each object.

Observations		
	Hard	Wet
Gram cubes		
Metal marbles		
Ice cube		
Water		
Milk		

Analyze and Conclude

4. **Draw a Conclusion** How are these solids the same?
How are these liquids the same?



5. **UNLOCK THE BIG QUESTION** What two states of matter did you **observe**?
Which did you not observe?



1.1.2

Describe Matter

You can learn about solids, liquids, and gases where you live. Go outside or to a park with an adult. Look around. What solids do you see? What liquids do you see? What clues do you see to know that there are gases?



Describe a solid, a liquid, or a clue about a gas that you see.

What is it?	What is it like?
 	

Vocabulary Smart Cards

matter
mass
weight
solid
liquid
gas
freeze
melt
boil
mixture
evaporate

Play a Game!

Cut out the cards.

Work with a partner.

Cover up the words on each card.

Look at the picture and guess the word.

solid



sólido

matter



materia

liquid



liquido

mass



masa

gas



gas

weight



peso

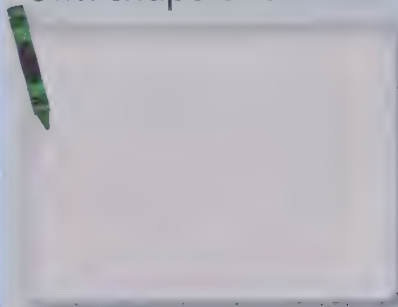


anything that takes
up space



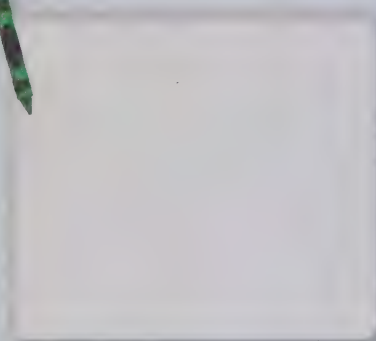
cualquier cosa que
ocupa espacio

matter that has its
own shape and size



materia que tiene
forma y tamaño
propios

the amount of matter
in an object



cantidad de materia
de un objeto

matter that takes the
shape of its container



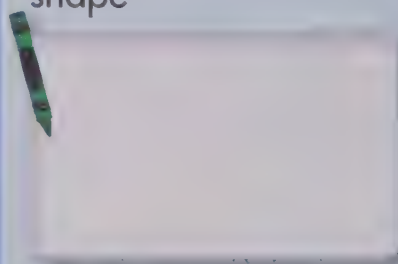
materia que toma la
forma del recipiente
que la contiene

how heavy an
object is



cuán pesado es un
objeto

matter that can
change size and
shape



materia que puede
cambiar de tamaño y
forma

mixture



mezcla

freeze



congelar

evaporate



evaporarse

melt



derretir

boil



hervir



to change from a
liquid to a solid

more than one kind
of matter

cambiar de líquido
a sólido

más de un tipo
de materia

to change from a
solid to a liquid

to change from a
liquid to a gas

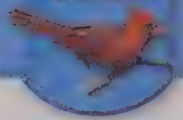
cambiar de sólido
a líquido

cambiar de líquido
a gas

to heat a liquid until it
becomes a gas

calentar un líquido
hasta que se convierte
en gas





Lesson 1



What is matter?

- Matter takes up space and has mass.
- Weight is one way to describe objects.

Lesson 2



What are solids, liquids, and gases?

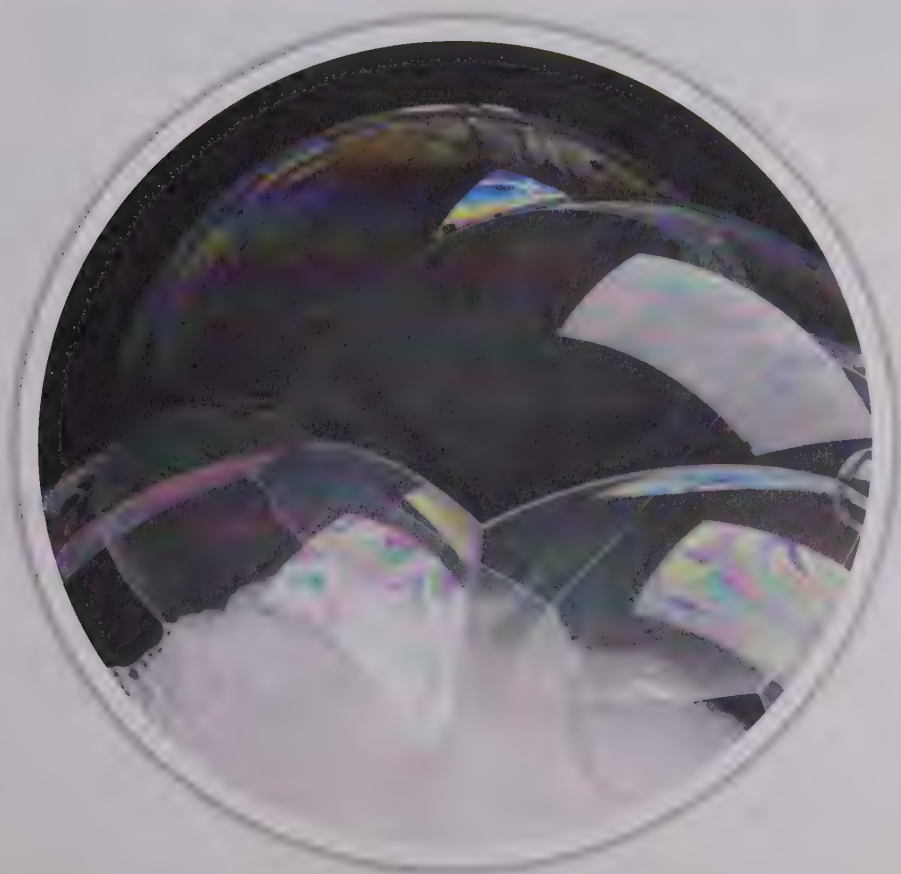
- Matter can be a solid, liquid, or gas.
- Water can freeze, melt, or boil.

Lesson 3



What is a mixture?

- A mixture can have solids and liquids.
- Liquids evaporate to separate from solids.





Lesson 1

1.1.1

1. What takes up space? **Circle** the letter.

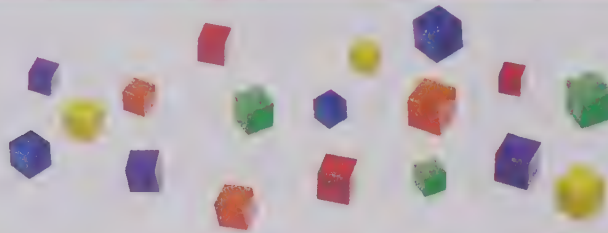
A. force

C. matter

B. speed

D. direction

2. **Classify** How can you group the blocks in the picture?



Lesson 2

1.1.2

3. **Describe Write** what a gas can do.

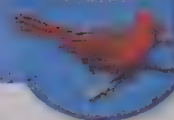
4. **Apply Draw** three ways that water can change form.



freeze

melt

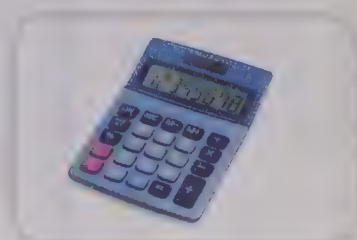
boil



Lesson 3

1.1.3

5. **Vocabulary** **Circle** a way to separate solids and liquids.



6. **Main Idea and Details**

Underline two details below.

You can separate solids and liquids in a mixture. You can separate them with a screen. You can let the liquid evaporate.

Got it?



Stop! I need help with



Go! Now I know

Which objects will float?

Materials



objects



water

Some objects float. Other objects sink.

Ask a question.

Which objects will float?

Make a prediction.

1. Choose an object. Tell what you think.

The _____ will (float / sink).

Plan a fair test.

Use all of the objects.

Make predictions before you test.



Make sure to
clean up spills!

Inquiry Skill

When you
classify, you
sort things.

Design your test.

☐ 2. List your steps.



Do your test.

☐ **3.** Follow your steps.

Collect and record data.

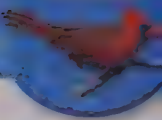
☐ **4.** Fill in the chart.

Tell your conclusion.

5. Classify Which objects float?



6. Which objects sink?



Using Scientific Methods

1. Ask a question.
2. Make a hypothesis.
3. Plan a fair test.
4. Do your test.
5. Collect and record data.
6. Tell your conclusion.

Group Objects

- Group objects such as buttons or blocks by the materials they are made of.
- Label the groups. Write a sentence about each group.

 1.1.1

Cool a Balloon

- Blow up a balloon.
- Find out if the size of the balloon changes when it is in cold water.

 1.1.2

Order Objects by Mass

- Choose three objects.
- Predict which object will have the least mass and which will have the most mass.
- Use a pan balance to test your predictions.

 1.1.2



Earth and Space Science

Quarter 4

Soil

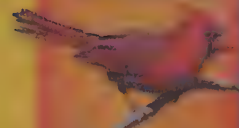


What is Earth
made of?



Where does
the **soil**
come from?





Soil

Try It!

What makes up soil?

Lesson 1 What is on Earth?

1.2.3

Lesson 2 How is soil made?

1.2.4

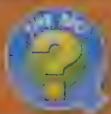
Lesson 3 What are some kinds of soil?

1.2.1, 1.2.2

Investigate It!

How are soils different?

Tell about the land in the picture.



What is Earth made of?

Go to www.myscienceonline.com and click on:



Untamed Science™

Watch the Ecogeeks in this wild video.



Got it? 60-Second Video

Take one minute to learn science!



Science Songs

Sing along with science songs!



my planet diary

Connect to the world!

Envision It!

See what you already know about science.

What makes up soil?

- ☐ 1. **Observe** the soil. Use a hand lens. Tell how the soil feels and looks.



Wear gloves. Wash your hands when finished.

- ☐ 2. Look for differences. Sort the soil into different parts. Pick tools to help you. Put an **X** by the ones you used.

- | | |
|------------------------------------|---------------------------------------|
| ☐ hand lens | ☐ probe |
| ☐ forceps | ☐ straw |
| ☐ gloves | ☐ 2 toothpicks |

Materials

plate with soil



hand lens



forceps



2 toothpicks



straw



probe



latex-free gloves

Inquiry Skill

You **observe** using one or more of your five senses.

Explain Your Results

3. Which tools worked best?



4. **Draw a Conclusion** What makes up soil?

🎯 Compare and Contrast

You **compare** when you tell how things are alike.

You **contrast** when you tell how things are different.

Mountains

Mountains are very high.

The Rocky Mountains are rough.

The Appalachian Mountains are not.

The Rocky Mountains are higher than the Appalachian Mountains.

Let's Read
Science!



Appalachian Mountains



Rocky Mountains

Practice It!

Write how the mountains are alike and different.

Compare

Contrast

 	
--	-------------------------

Lesson 1

Envision It!

What is on Earth?



1.1.1 Observe a variety of soil samples and describe in words and pictures the soil properties in terms of color, particle size and shape, texture, and recognizable living and nonliving items in the soil. (Also 1.1.1a)

Draw another kind of land or water.

my planet diary

Connections

Read Together

Long ago people known as the Incas lived in the mountains in South America. It was hard to grow crops in the mountains. The Incas built flat pieces of land called terraces so they could grow crops. Today some people do not have land to grow crops and other plants. They use pots and planters.



Write how you might grow plants where you live.





I will know that
land, water, and living
things are found on
Earth.

Word to Know

soil

Land, Water, and Air

Earth is made of many things.

Earth has land.

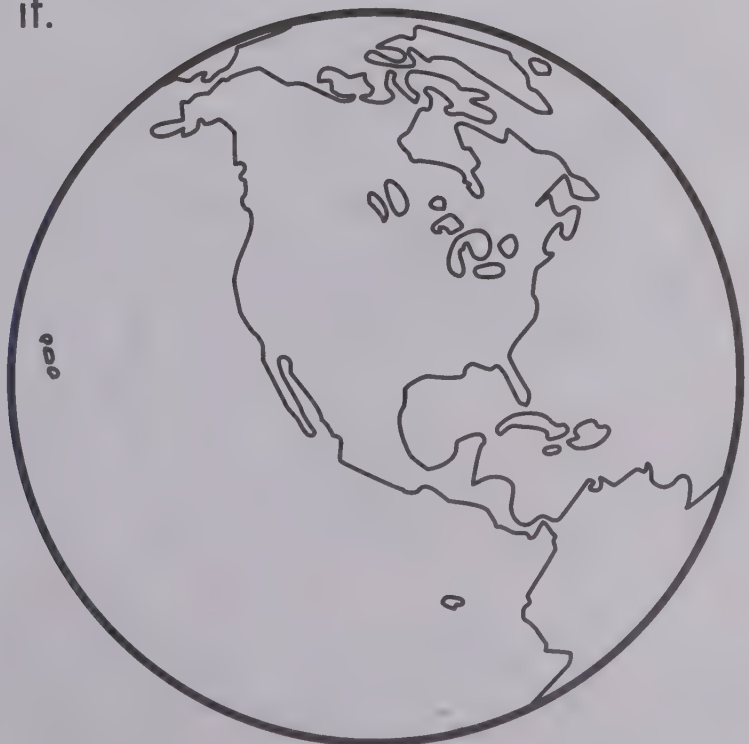
Earth has water.

The surface of Earth has more
water than land.

Earth has air all around it.

Color the land green.

Color the water blue.



Kinds of Land

Earth has many different kinds of land.
Plains are large, flat areas of land.
Hills are where the land gets higher.
Mountains are the highest kind of land.
An island is land with water all
around it.

Label the plains,
mountains, and island.



The Blue Ridge Mountains
rise above the land
around them.

Rocks and Soil

Earth's land has rocks and soil.

Rocks are hard.

Rocks can be many colors.

Soil is the top layer of Earth.

Soil can be soft.

Underline two things that are found on Earth.

🎯 **Compare and Contrast** Write one way rocks and soil are different.



rocks and soil



At-Home Lab

Types of Landforms

Draw one kind of land near where you live.

Draw another kind of land. Write how they are the same.

Write how they are different.

Water on Earth

Earth has many places with water.

A river is water that flows across land.

Lakes have land all around them.

Oceans are large areas of salt water.

Oceans cover most of Earth.

Match the word to the picture.

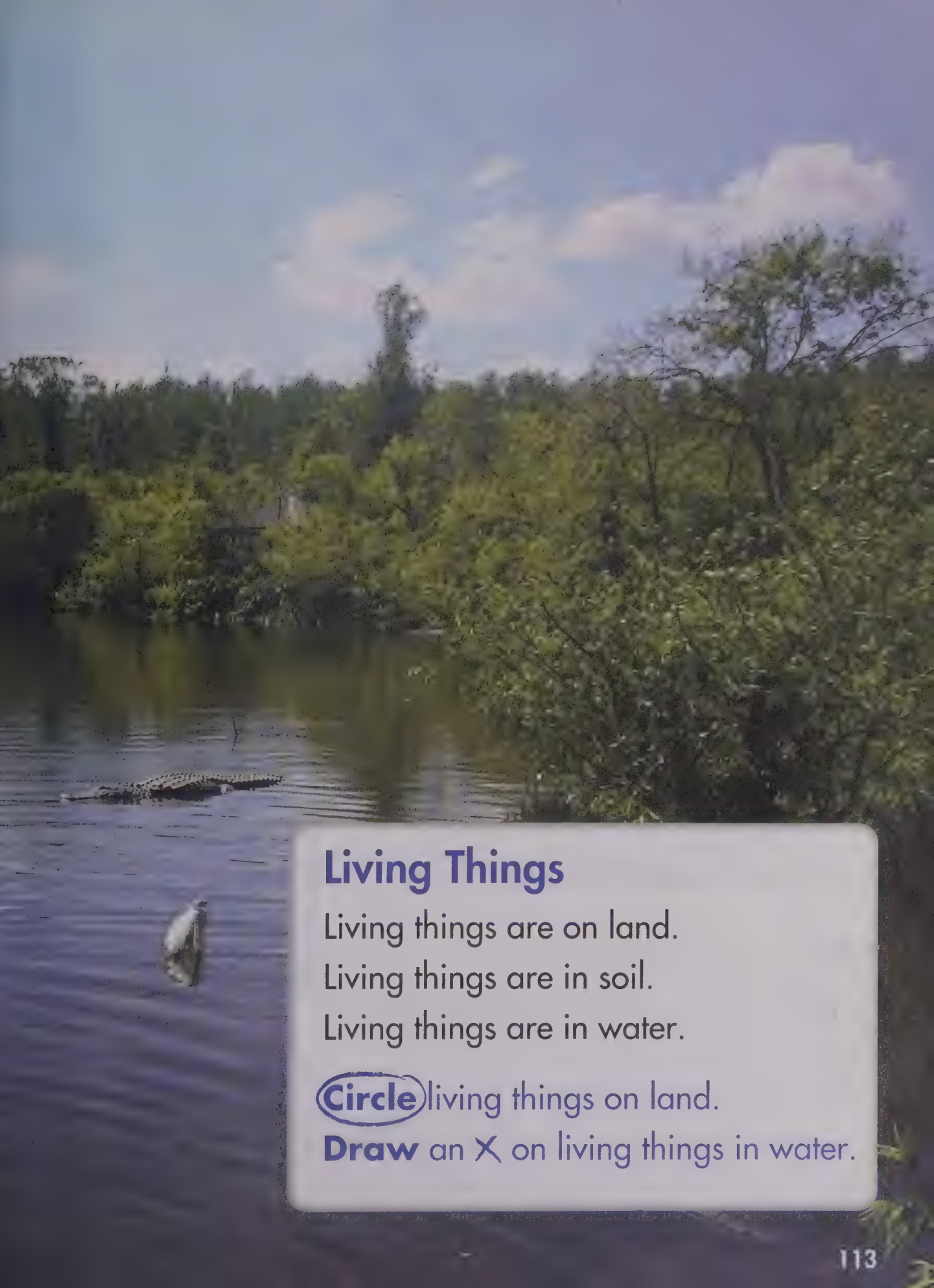
Draw a line.

river

lake

ocean



A photograph of a pond with a dense forest in the background and a small boat on the water.

Living Things

Living things are on land.

Living things are in soil.

Living things are in water.

Circle living things on land.

Draw an X on living things in water.

How is soil made?



Observe over time the effect of organisms such as earthworms in the formation of soil from dead plants. Discuss the importance of earthworms in soil. (Also 1.NS.1)

Tell how you think the worms help soil.

Inquiry

Explore It!

How can earthworms help make soil?

1. Put leaves in the bag. Add soil. Add worms. Close the bag.



Wear gloves.
Wash your hands when finished.

2. **Observe** the leaves and soil for 4 days. **Record** the changes.

Explain Your Results

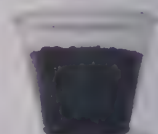
3. **Infer** What happened to the leaves?



Materials



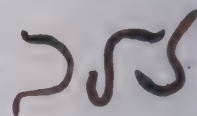
leaves



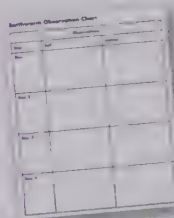
soil



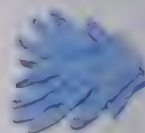
bag



earthworms



Earthworm
Observation Chart



latex-free
gloves





I will know how soil forms. I will know how earthworms help make soil.

Word to Know

earthworm

How Soil Forms

Many things make up soil.

Soil has pieces of rocks.

Soil has parts of dead plants and animals.

Soil forms when these things mix together.

Wind and water can help form soil.

Wind and water mix together parts of soil.



This is a compost pile.
The food and plant parts will form soil.

Write what could help this compost pile form soil.



Earthworms

Earthworms are animals.

Earthworms live in soil.

Earthworms help form soil.

Earthworms mix soil when they move.

Earthworms mix soil when they eat.

An earthworm takes soil into its mouth.

Soil moves through the earthworm.

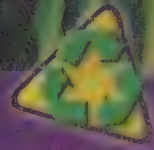
This helps dead plants become soil.

Earthworms move nutrients through soil.

Plants need these nutrients to grow.

Underline how earthworms
help plants.

Draw an arrow to show
how soil moves through
the earthworm.



Go Green

Compost

Look around your classroom. List things that can make compost.

© **Compare and Contrast** **Write** what earthworms and wind both do to soil.

Lesson 3

Envision It!

What are some kinds of soil?



1.1.1 Observe and compare properties of sand, clay, silt and organic matter. Look for evidence of sand, clay, silt and organic matter as components of soil samples. **1.1.2** Choose, test, and use tools to separate soil samples into component parts. (Also **1.1.3**, **1.1.4**, **1.1.5**)

Circle where you think the plant would grow best.

Inquiry

Explore It!

What are different soils like?

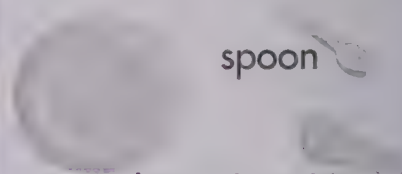
- ☐ **1.** Put a spoonful of each soil on a plate.
- ☐ **2. Observe.** Draw. Show colors. Tell how each soil feels.

	silt	sandy
	loam	clay

Materials



silt, sandy, clay,
loam soil



paper plate hand lens

Do you see anything alive or that was once living?



Explain Your Results



Wash your hands when done.

3. Communicate How is loam soil different?





I will know how to describe soil.

Word to Know

humus

Soil Layers

Soil covers the land.

Soil has layers.

The layers have different colors.

The layers have different textures.

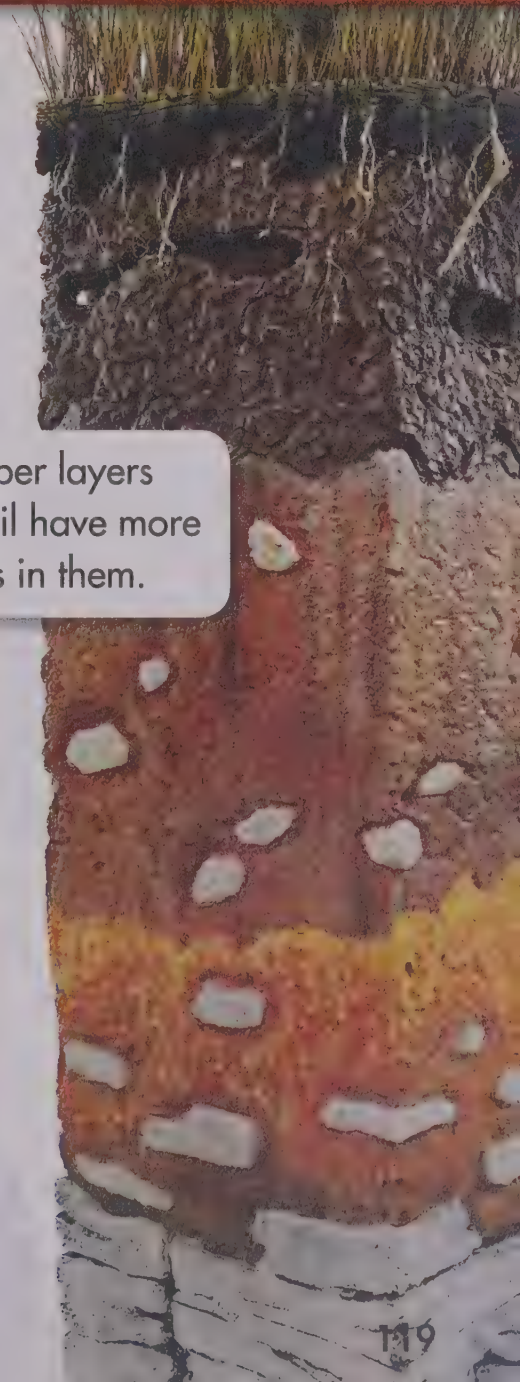
Texture is how something feels.

Plants and animals only live in the top layers of soil.

Look at the picture from top to bottom.

Tell what you see.

Deeper layers of soil have more rocks in them.



Nonliving and Living Parts

Some parts of soil are nonliving.

Soil has tiny bits of rock.

It has humus also.

Humus is small pieces of dead plants and animals.

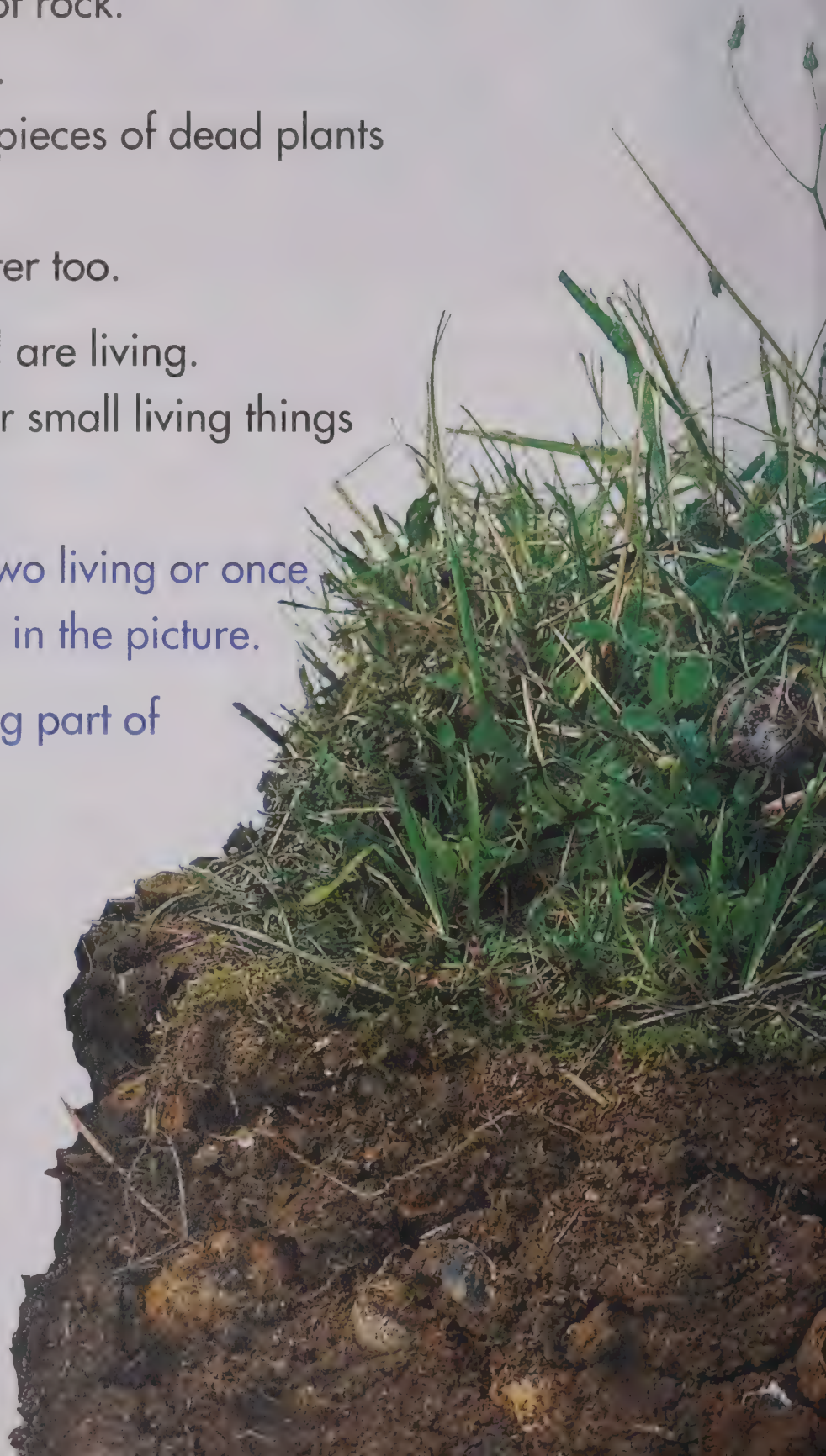
It has air and water too.

Some parts of soil are living.

Animals and other small living things live in soil.

Draw an X on two living or once living parts of soil in the picture.

Circle a nonliving part of the soil.



Clay Soil

Clay can feel smooth.

Clay can feel soft.

Clay can feel sticky.

Some clay is red.

Clay soil does not have a lot of air.

Most plants do not grow well in clay soil.

Underline the words that tell about the texture of clay.

A seed is planted in clay soil. Will it grow?

Why or why not?



clay

The nutrient iron makes the clay red. A nutrient is something living things need to live and grow.

At-Home Lab

Describe Soil

Work with an adult.

Look at some soil.

What color is it? How does it feel? What parts do you see?

Sandy Soil

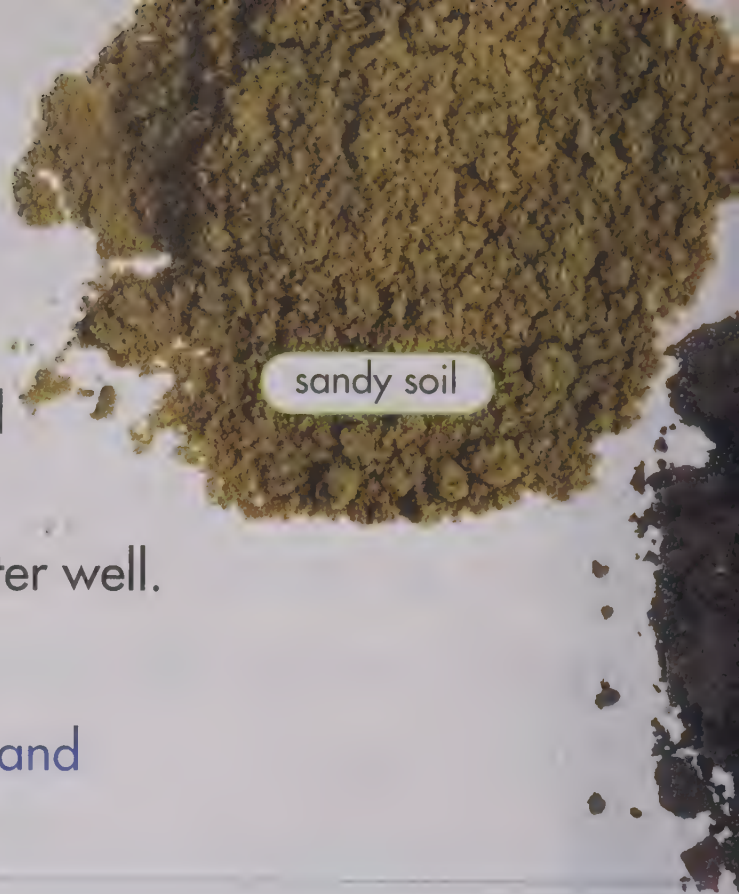
Sandy soil is very loose.

It feels dry and rough.

Often sandy soil is tan.

Most plants do not grow well in sandy soil.

Sandy soil does not hold water well.



Compare and Contrast

Write two ways that sandy and clay soils are different.



Deserts have sandy soil.



Gardens have
loam soil.



loam

silt

Loam

Loam has sand and clay.

Loam has humus and silt too.

Silt has small grains.

Loam feels wet.

Loam is often dark brown.

Loam has the right amount of water and air.

Plants grow well in loam soil.

Circle what is in loam.

Draw how you could use loam.

How are soils different?

Follow a Procedure

1. **Measure** 50 mL of water.
2. **Investigate** Hold a filter cup with sandy soil over a plastic cup. Pour the water into the soil. Measure the time until water first drips out.

Materials



sandy soil in filter cup*

clay soil in filter cup*

loam soil in filter cup*

(*prepared by teacher)

water



timer



graduated cylinder



3 plastic cups



Inquiry Skill

Scientists make careful observations when they carry out an **investigation**.



Wash your hands when finished!

☐ 3. Repeat Steps 1 and 2 with clay soil and loam.

☐ 4. **Record.**

Water Drip Times

Soil	How much water? (mL)	Time when water first drips (seconds)
Sandy soil		
Clay soil		
Loam soil		

Analyze and Conclude

5. **Interpret Data** Which soil let water through fastest?



6.  Which soil do you think would help a plant grow the best? Why?

Do the
math!

Count Rocks

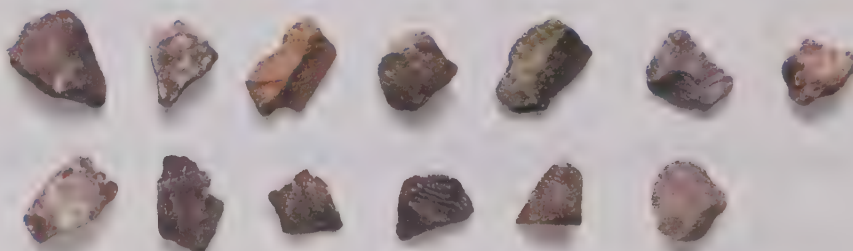
Circle groups of ten rocks.

Count the tens.

Count the ones.

Add the number of rocks in the groups together.

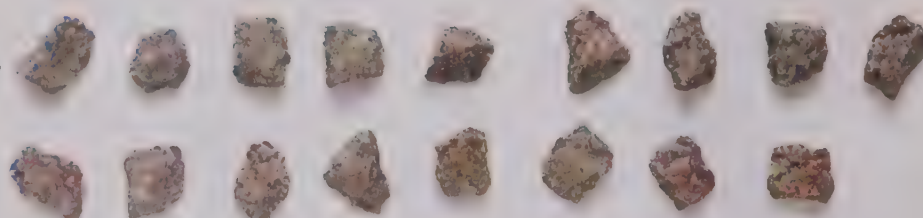
1.



2.



3.



Vocabulary Smart Cards

soil

earthworm

humus

Play a Game!

Cut out the cards.

Work with a
group.

Tape a card to
the back of each
group member.

Have each
member guess
what his or her
word is by
giving clues.

soil



suelo

earthworm



lombriz

humus



humus



the top layer of Earth



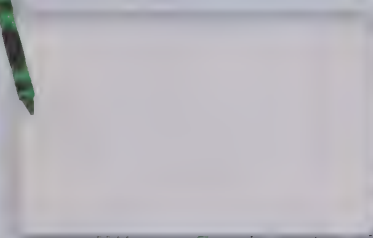
capa superior de
la Tierra

animal that lives
in soil



animal que vive en
el suelo

small bits of dead
plants and animals
in soil



restos de plantas y
animales muertos en
el suelo





Lesson 1



What is on Earth?

- Earth has different kinds of land and water.
- Rocks and soil are on Earth's surface.

Lesson 2



How is soil made?

- Many parts mix together to form soil.
- Earthworms mix and move nutrients in soil.

Lesson 3



What are some kinds of soil?

- Soil is often found in layers.
- Soil has tiny bits of rock and humus.





Lesson 1

1.2.3

1. **Exemplify Draw** two things that are found on Earth.



2. _____ is the top layer of Earth. **Circle** the letter.

A. Soil

C. A mountain

B. A lake

D. The sun

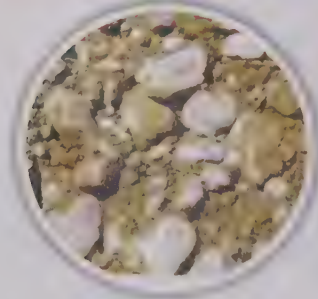
Lesson 2

1.2.4

3. **Infer** Why are earthworms important to plants?



4. **Summarize Draw** an X on two parts of soil.



**Lesson 3** 1.2.1, 1.2.2**5. Compare and Contrast**

Write how clay and sandy soil are different.

**6. Vocabulary** What is humus?**Got it?**

Stop! I need help with



Go! Now I know

Which soil settles first?

Materials



graduated cylinder



gravel, sand, and clay soil



plastic bottles with caps



funnel and water

Soil can be moved by water in rivers. Find out how different soils settle out in rivers.

Ask a question.

How does soil settle out in water?

Make a prediction.

1. If soil particles are larger, they will settle
 - (a) faster.
 - (b) slower.
 - (c) at the same speed.

Plan a fair test.

Use the same amount of soil and water.

Design your test.

2. Draw how you will set up your test.



Inquiry Skill

When you do an **experiment**, you only change one thing.

- ☐ **3.** List your steps.



Do your test.

- ☐ **4.** Follow your steps.

Collect and record data.

- ☐ **5.** Fill in the chart.

Tell your conclusion.

- 6.** Compare your prediction with your results.



Performance-Based Assessment



Using Scientific Methods

1. Ask a question.
2. Make a hypothesis.
3. Plan a fair test.
4. Do your test.
5. Collect and record data.
6. Tell your conclusion.

Write a Song

- Write a song about soil.
- Tell how different soils look.
- Tell how different soils feel.

D 1.2.3

Make a Poster

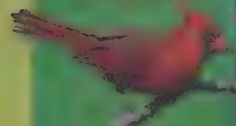
- Draw an earthworm.
- Write two sentences about how earthworms help soil.
- Use your sentences and picture to make a poster.

D 1.2.4

Humus and Sand

- Gather samples of humus and sand.
- Add water to each sample.
- Record how the water changes the humus and sand.

D 1.2.1



Life Science

Chapter 5

Plants, Animals, and Their Habitats



What do living
things need?



Where
does a cow
get food?



Plants, Animals, and Their Habitats

**Try It!**

What does a cricket need?

Lesson 1 What do plants need to live?

1.3.3

Lesson 2 What do animals need to live?

1.3.3, 1.3.5

Lesson 3 How do plants and animals live in land habitats?

1.3.2, 1.3.4

Lesson 4 How do plants and animals live in water habitats?

1.3.3, 1.3.6

Lesson 5 What helps living things live in different places?

1.3.7

**Investigate It!** Do plants need light?

Draw an X on one thing a cow needs.



What do living things need?

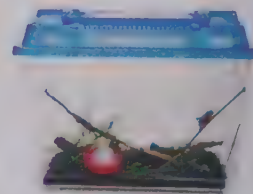
Go to www.myscienceonline.com and click on:**Utah Science™**

Ecogeeks answer your questions.

Got it?**60-Second Video**

Review each lesson in 60 seconds!

Materials



cricket in habitat

What does a cricket need?

- ☐ 1. **Observe** the cricket each day.



Inquiry Skill

You **observe** when you watch living things in their environment.

- ☐ 2. What did the cricket do? Record what you see with an X.

Cricket Observations

Day	Eats	Drinks	Moves Around	Hides or Sleeps
1				
2				
3				
4				

Explain Your Results

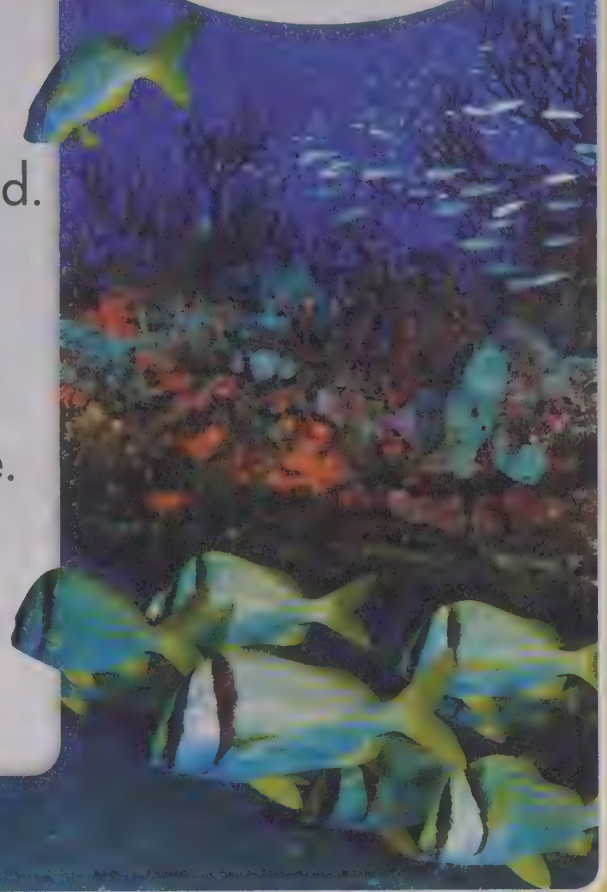
3. Tell what the cricket needs. Use your **observations**.

Draw Conclusions

You **draw conclusions** when you decide something about what you see and read.

Animals Underwater

Many animals live in water.
Fish and coral can live there.
The animals get what they need in the water.



Practice It!

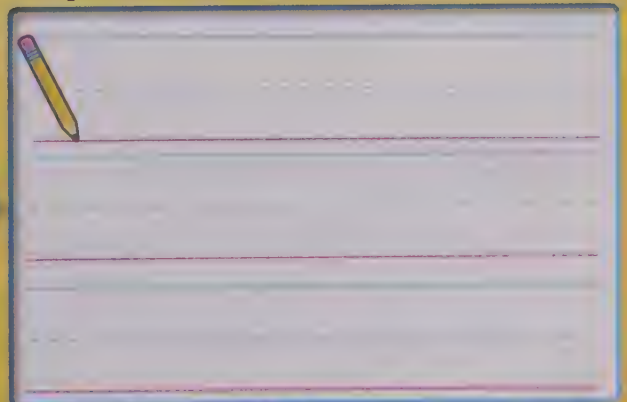
Write a conclusion about where fish get what they need.

I know

Fish live
in water.



My conclusion



Lesson 1

What do plants need to live?

1 Observe and explain that plants and animals have basic needs for growth and survival: plants need to take in water and need light and animals need to take in water and food and have a way to dispose of waste. (Also 1.NS.1)

Envision It!



Draw what you think the plant will look like.

Inquiry

Explore It!

Do plants need water?

- ☐ 1. **Observe** the plant. Add water.
- ☐ 2. **Predict** what will happen.



Materials



plant



water

- ☐ 3. Wait 1 day. **Record** your observation.

Explain Your Results

- 4. **Predict** What will happen if you do not water the plant?





I will know that plants need air, water, light, food, and space.

Words to Know

need

nutrients

Needs

All living things have needs.

A **need** is something a living thing must have to live.

Plants are living things.

Plants have needs.



Poppy plants have needs.

Draw a conclusion about the needs of the poppy plants in the picture.

I know

The poppy plants are alive.

My conclusion

Needs of Plants

Plants need air.

Plants need water.

Plants need light to make food.

Plants need space to live and grow.

Tell how you know the strawberry plants get what they need.

Draw one thing the strawberry plants need.



strawberry plants

Nutrients

Plants need nutrients.

Nutrients are materials that living things need.

Plants can get nutrients from the soil.

Point to where the strawberry plants get nutrients. **Write** why the strawberry plants need nutrients.



Lightning Lab

Play a Plant

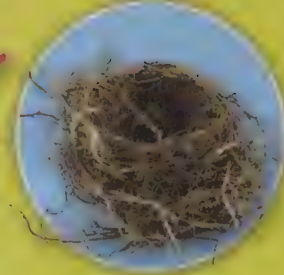
Sit on the floor. Raise both hands. You are a plant. You get no water. Slowly show what happens.

Lesson 2

Envision It!

What do animals need to live?

1 Observe and describe ways in which animals and plants depend on one another for survival. Choose two animals that build shelters within their habitats and compare the shelters in terms of the materials and tools they use, and the type and purpose of shelter they provide. (Also see 1.1.1, 1.1.2, 1.1.3)



Draw an X on the thing the robin does not need to live.

my planet DiARY

Did You Know?

Read Together

What do you think this picture shows?



It lives underwater. It is a group of animals. It can be many different, beautiful colors. Groups of this make up reefs.

Do you know what it is yet? It is coral.

The coral in the picture is called brain coral.

Why do you think it has that name?





I will know that animals need air, water, food, space, and shelter.

Word to Know

shelter

Water, Food, and Air

Animals live in habitats.

Animals need water and food.

Animals need air to breathe.

Animals get what they need in their habitats.

Animals need to get rid of waste too.

Look at the picture.

Tell how the manatee meets its needs in its habitat.



The manatee gets what it needs where it lives.

Space and Shelter

Animals need space to live.

Some animals need shelter too.

Shelter is a safe place.

Animals find or build shelter in their habitats.

The beaver and the rabbits use shelter to hide from other animals.

Their shelters keep them safe from the weather too.

beaver shelter

rabbit shelter



Build Shelters

Some animals build their shelters.

The beaver builds its shelter.

The beaver uses sticks and mud.

The beaver uses its teeth as tools to cut the sticks.

The rabbits build their shelter too.

The rabbits dig tunnels in the ground.

The rabbits use their paws as tools to dig.

Tell how the tools and materials the beaver and rabbits use are alike and different.

 **Draw Conclusions Write** two reasons both animals build shelters.



Animals and Plants

Animals need plants.

Some animals eat plants.

Some animals use plants for shelter.

Plants need animals too.

Animal waste can help plants grow.

Plants get rid of waste too.

Plants give off oxygen.

Animals need oxygen in the air.

Write why the owl needs the tree.



Name an animal.

Tell how it uses plants.

Tell why the sheep need the grass.



Lightning Lab

Plants and Animals

Go outside. List plants and animals you see. Tell how the plants and animals help each other.

Lesson 3

Envision It!

How do plants and animals live in land habitats?



Observe organisms closely over a period of time in different habitats, such as terrariums, aquariums, lawns, and trees. Draw and write about observations. Describe how animals' habitats, including plants, meet their needs for food, water, shelter, and an environment in which they can live. (Also see, *100 Days of School*)



Tell about where the horses live.

my planet DiARY

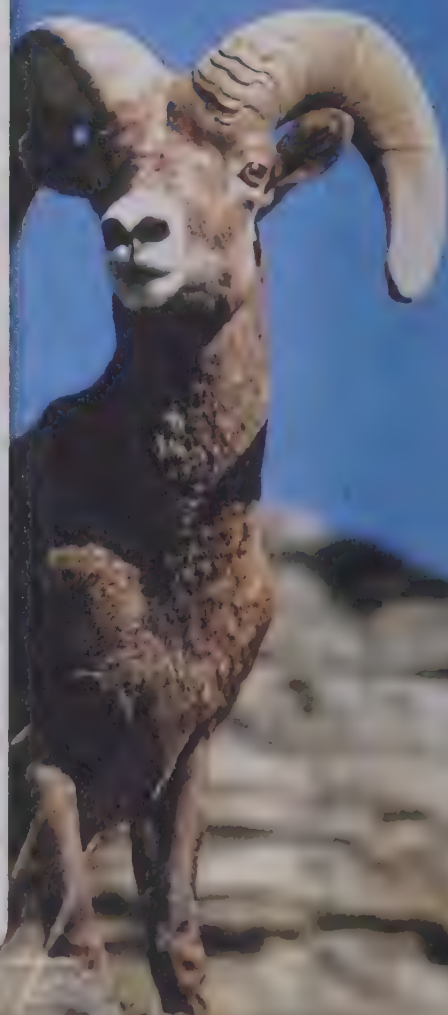
Did You Know?

Read Together

Look at the bighorn sheep.
Why do you think the sheep is called a bighorn?



Some bighorn sheep live in deserts. They eat cactus. A cactus has sharp spines! The sheep use their big horns to scrape off the spines. Why is this a good idea?





I will know how some plants and animals can live in land habitats.

Words to Know

habitat terrarium
forest desert

Habitats

Plants and animals live in **habitats**.

A habitat has food and water.

A habitat has air.

A habitat has shelter.

Land has many habitats.

 **Main Idea and Details** Write two details about a habitat.

Main Idea

A habitat is where a plant or animal lives.



Detail

Detail





Forest Habitats

A forest has habitats.

A **forest** is land that has many trees and other plants.

Black bears live in some forests.

Black bears have sharp claws.

Bears use their claws to dig for food.

Sharp claws help bears climb trees.

Tell how sharp claws help bears live in forests.

Tell why the bear in the picture might have climbed a tree.

Big leaves help forest plants take in a lot of sunlight.

Lawns and Terrariums

A lawn has habitats.

A lawn is usually covered in grass.

Insects live in some lawns.

Earthworms live in lawns too.

A **terrarium** is a glass tank where plants and small animals live.

You can make a terrarium.

You must choose plants and animals that can live together.

Write two things that might live in a lawn habitat.



Draw one thing that might live in the terrarium.



At-Home Lab

Lawn Habitats

Go outside with an adult. Look around your lawn or a park. Write what plants and animals you see. Draw what plants and animals you see.



Desert Habitats

A desert has habitats.

A **desert** is land that is very dry.

A desert gets very little rain or snow.

Some deserts are very cold.

Plants grow in deserts.

Plants in deserts hold water.

Many animals get the water they need from the plants they eat.

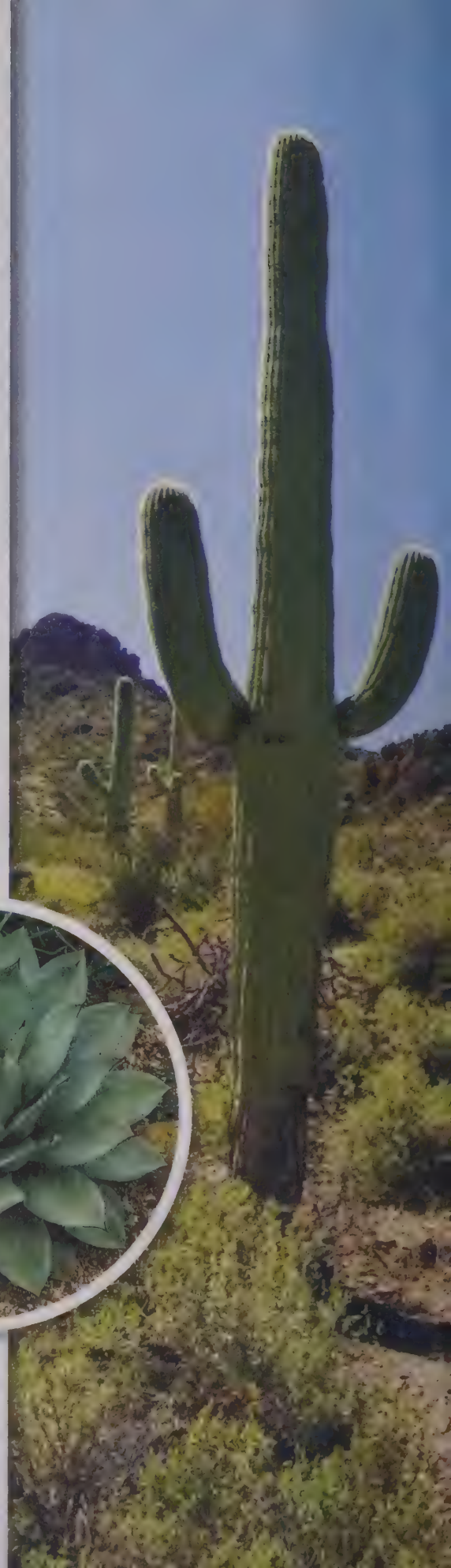
🎯 Main Idea and Details

Underline details about deserts.

Tell how getting water from plants helps animals live in the desert.



Waxy leaves help this plant hold water.



Circle the part of the rabbit that helps keep it cool.

Write what helps the lizard live in the desert.



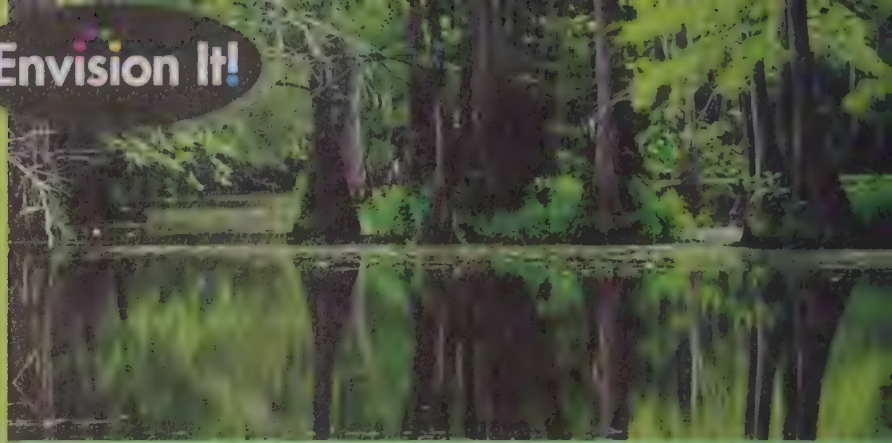
Heat leaves this rabbit's body through its big ears.



This desert is hot during the day. Light-colored skin helps this lizard keep cool.



How do plants and animals live in water habitats?



Draw an animal that might live in this habitat.

- 1** Observe organisms closely over a period of time in different habitats, such as terrariums, aquariums, lawns, and trees. Draw and write about observations. **2** Describe how animals' habitats, including plants, meet their needs for food, water, shelter, and an environment in which they can live. (Also 1.NS.1)

Inquiry Explore It!

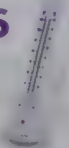
How do some turtles stay warm in winter?

- ☐ 1. **Record** the temperature in each cup. Use the Thermometer Chart.
- ☐ 2. Put both cups in a cooler. **Predict.** Which cup will stay warmer?



Materials

plastic cup with thermometer



plastic cup with thermometer and soil



cooler (whole class use)



red crayon



Thermometer Chart



- ☐ 3. Wait 20 minutes. Record the temperature.
- ☐ 4. Which stayed warmer? (soil/air)

Explain Your Results

5. **Infer** where turtles might live in the winter. Explain.



I will know how some plants and animals can live in water habitats.

Words to Know

wetland aquarium
ocean

Water Habitats

Some animals live in water habitats.

They get food and shelter there.

Some plants live in water habitats too.

Some plants live on top of the water.

Flat leaves help the plants float.

Long roots soak up nutrients in the water.

Some plants live underwater.

🎯 Main Idea and Details Underline

two details about plants that float on top of the water.



Newts are a kind of animal. They live part of their lives in water. They find food and shelter there.

Marsh Habitat

A **wetland** is a habitat that is covered with water.

Marshes are wetlands.

A marsh has grasses.

Many different kinds of animals live in marshes.

Blue herons live in marshes.

Hérons have long sharp beaks.

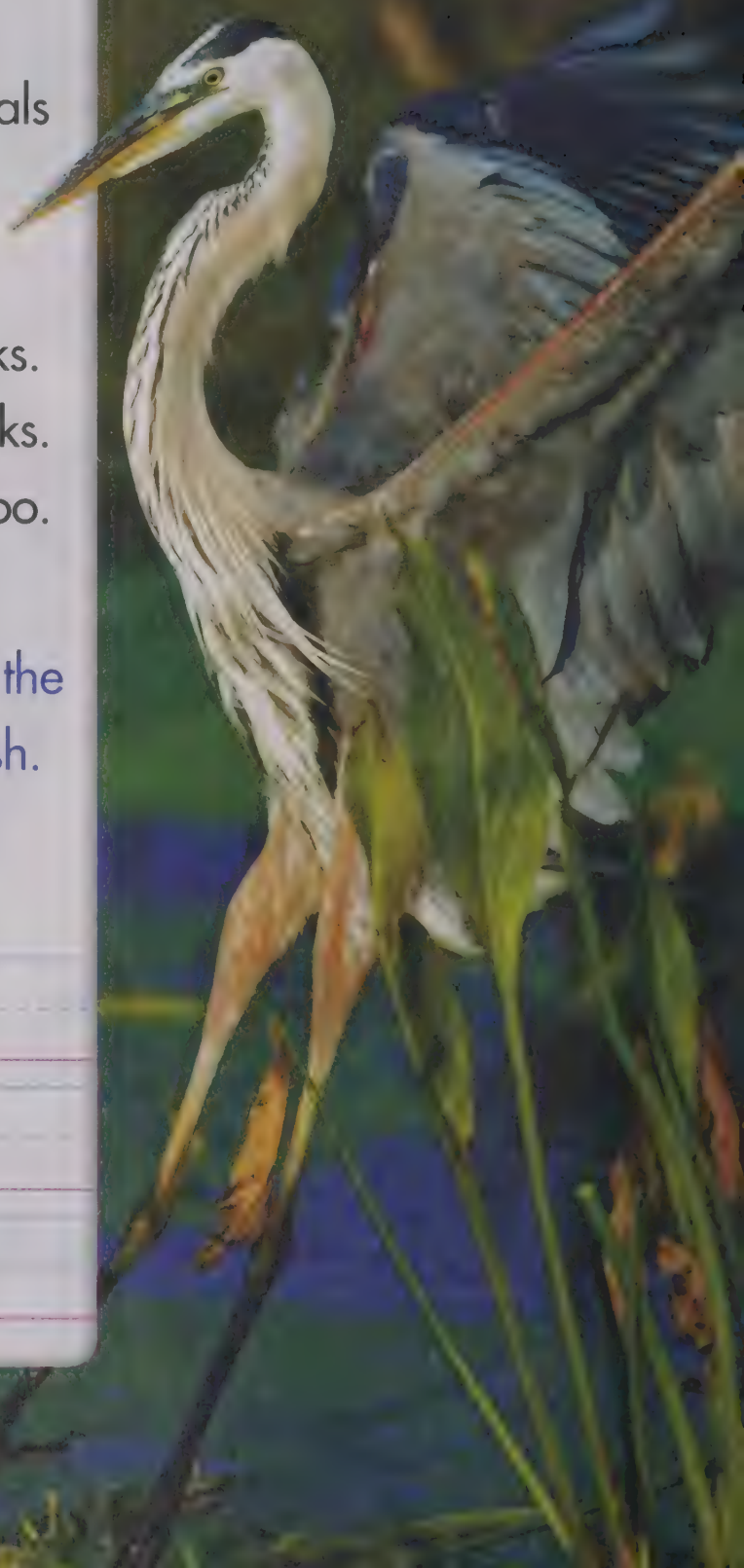
They catch fish with their beaks.

Hérons have long, thin legs too.

Look at the blue heron.

Draw an X on two parts of the bird that help it live in a marsh.

Write how these parts help the bird.



Swamp Habitat

Swamps are wetlands.

A swamp has soft, wet land.

A swamp has many trees.

Alligators live in some swamps.

Alligators are good swimmers.

Alligators use their long, strong tails to help them swim.

Write why being a good swimmer would help an alligator live in a swamp.



Lightning Lab

Pets

Ask your classmates what pets they have. Make a list of pets that live in water environments.

Draw an X on the part of the alligator that helps it swim.



Ocean Habitat

An **ocean** is a large body of salty water.

Some parts of the ocean are deep.

Fish live in the ocean.

Fish have gills.

Gills let fish take in oxygen from the water.

Fish have fins.

Fins help fish swim.

Plants need sunlight to make food.

Ocean plants live where there is light.

The deep ocean is dark.

Plants do not live there.

◎ Main Idea and Details

Underline the sentence that tells how gills help fish live in the ocean.

Write why plants do not live in the deep ocean.



Aquarium Habitat

You can observe plants and animals in an aquarium.

An **aquarium** is a water habitat in a glass tank or bowl.

An aquarium is a habitat made by people.

Draw what you see in the aquarium.



gills

fins

Lesson 5

Envision It!

What helps living things live in different places?



Classify living organisms according to variations in specific physical features, such as body coverings or appendages, and describe how those features may provide an advantage for survival in different environments. (Also 1.NS.1)



Circle what parts help these animals live in the ocean.

Inquiry

Explore It!

What do animals use to make shelters?

- ☐ 1. **Classify** Look at the animals.
Look at the homes.
- ☐ 2. Match the cards.

Explain Your Results

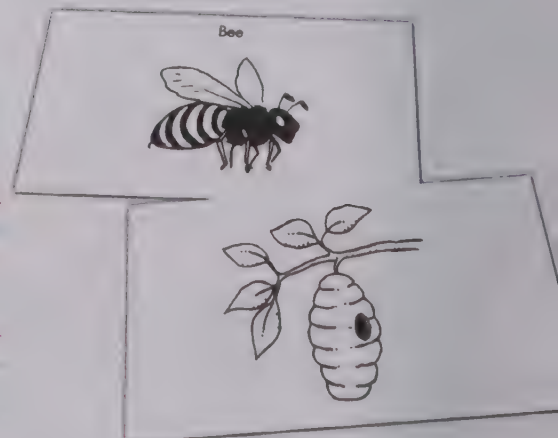
3. **Communicate** What do the animals use to build their homes?



Materials



Animal and Shelter Cards





I will know how to classify plants and animals.

Word to Know

classify

Classify Plants and Animals

Different plants and animals have different parts.

Pine trees have cones.

Cones make seeds.

Cones are hard.

Cones protect the seeds.

A kangaroo has strong legs to jump.

You can classify plants and animals by what parts they have.

Classify means to group things.

Classify the trees.

Put an X on the tree that has cones.



This kangaroo's legs help it move quickly.



Different Places to Live

Different parts help plants and animals live in different places.

Clown fish live in the ocean.

Fins help the fish swim.

A cactus lives in the dry desert.

The shape of a cactus helps it store water.

Toucans live in the rain forest.

A toucan has feathers.

A toucan has wings.

Feathers and wings help the toucan fly.

Polar bears live in cold habitats.

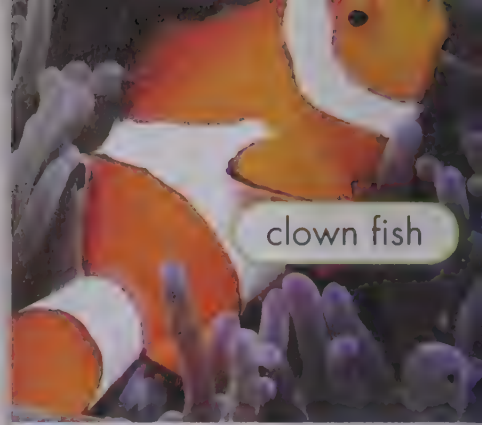
Polar bears have fur.

Polar bears have four legs.

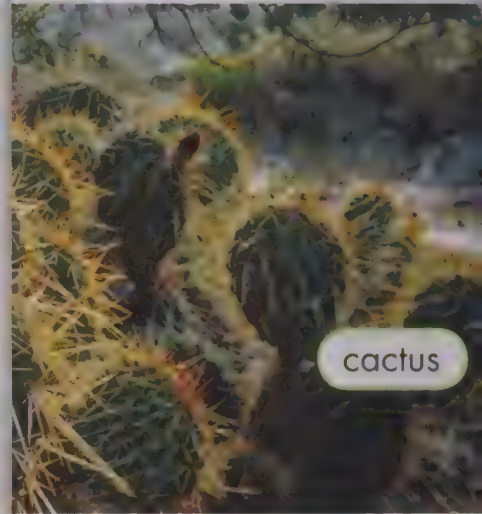
Legs help the polar bear walk and swim.

Underline what helps a toucan live in the rainforest.

Tell how fur helps the polar bear live in a cold habitat.



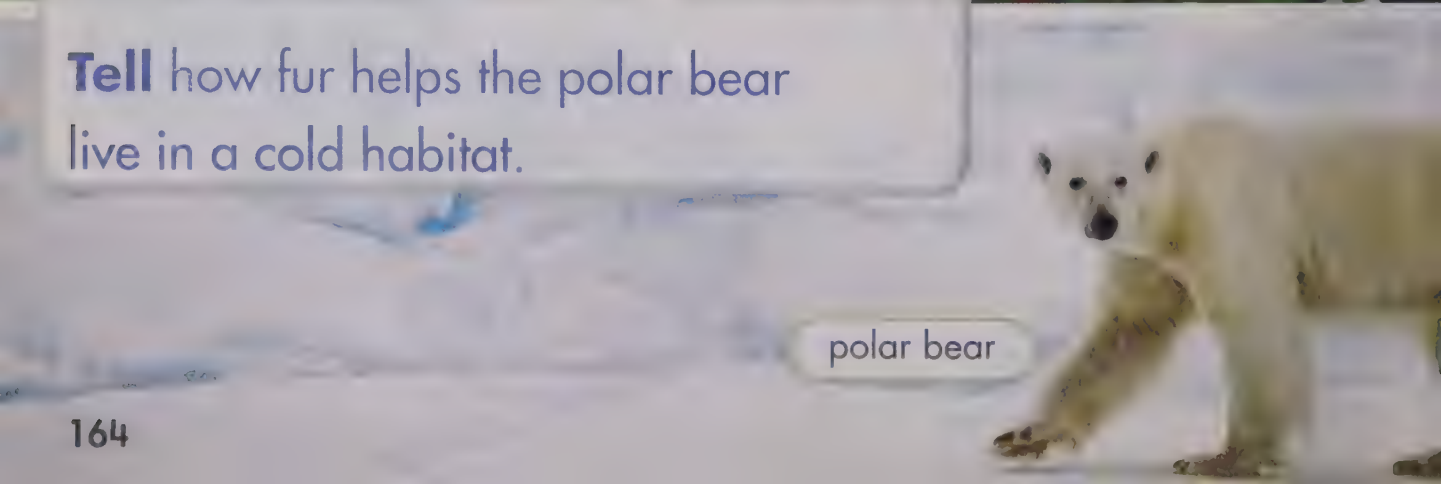
clown fish



cactus



toucan



polar bear

Classify the animals.

Circle the animals with wings.

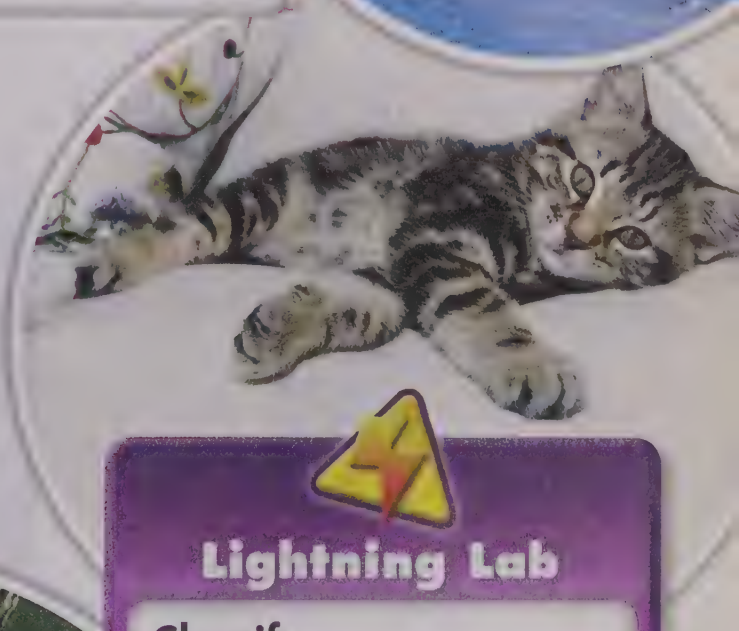
Draw an X on the animals with four legs.

Draw Conclusions **Write** where the animals might live.

Tell why they might live there.



Handwriting practice lines consisting of a solid top line, a dashed middle line, and a solid bottom line.



Lightning Lab

Classify

Gather pictures of plants and animals. Group the pictures by how they are alike.

Do plants need light?

Follow a Procedure

- 1. Water both plants.
Draw both plants in the chart.



Materials



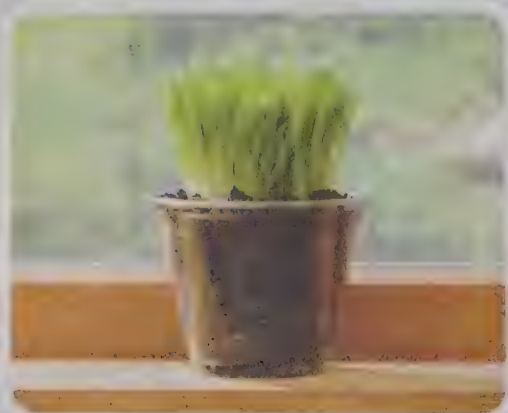
2 cups
with grass

water



Inquiry Skill You can use a chart to record what you **observe**.

- 2. Put one cup in sunlight. Put one cup in a dark place.



- 3. **Observe** Check the plants every day.
Draw both plants after 1 week.



Observations

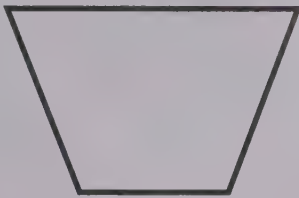
Sunlight



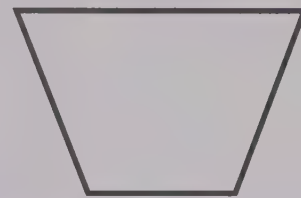
Dark



First day



First day



After 1 week



After 1 week



Analyze and Conclude

4. Which plant grew better?



5. **UNLOCK THE BIG** **Infer** Look at your **observations**.



Do plants need light? Explain.

1.3.2, 1.3.4

Chain O'Lakes State Park

Chain O'Lakes State Park is in Albion, Indiana. There are eleven lakes in the park! The lakes were formed thousands of years ago by big sheets of ice called glaciers. Today many people canoe in the lakes. Many kinds of fish live in the lakes. Birds live in the trees around the lakes. The birds and fish get what they need in the park.



Write one thing the bird needs.



Write how the bird meets this need.

Vocabulary Smart Cards

need
nutrients
shelter
habitat
forest
terrarium
desert
wetland
ocean
aquarium
classify

Play a Game!

Cut out the cards.

Put one set word
side up.

Put another set
word side down.

Match the word
with the definition.

habitat



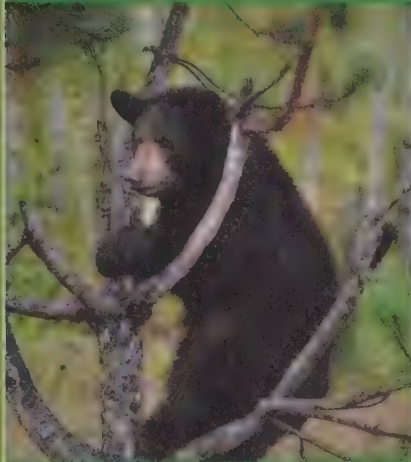
hábitat

need



necesidad

forest



bosque

nutrients



nutrientes

terrarium



terrario

shelter



albergue

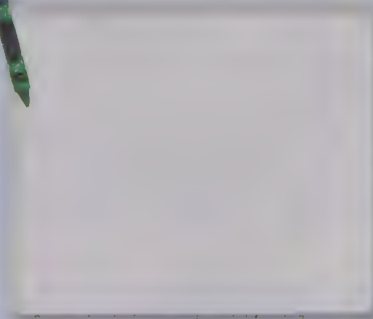


something a living
thing must have to
live



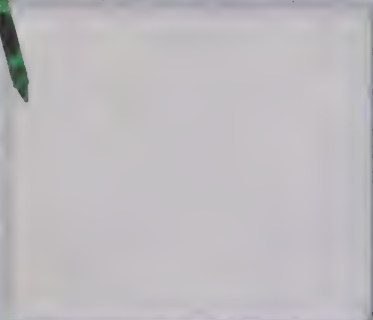
algo que un ser vivo
necesita para vivir

where a plant or
animal lives



donde vive una
planta o un animal

materials that living
things need



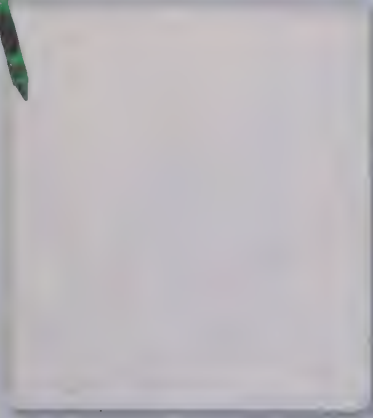
sustancias que los
seres vivos necesitan

land that has many
trees and other plants



terreno que tiene
muchos árboles y
otras plantas

a safe place



lugar seguro

a glass tank where
plants and small
animals live



tanque de vidrio
donde viven plantas y
animales pequeños



aquarium



acuario

desert



desierto

classify



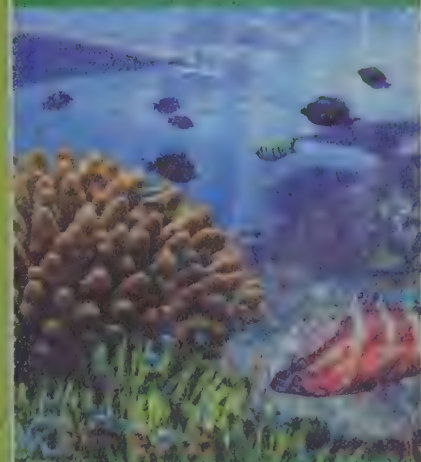
clasificar

wetland



pantanal

ocean



océano



land that is very dry

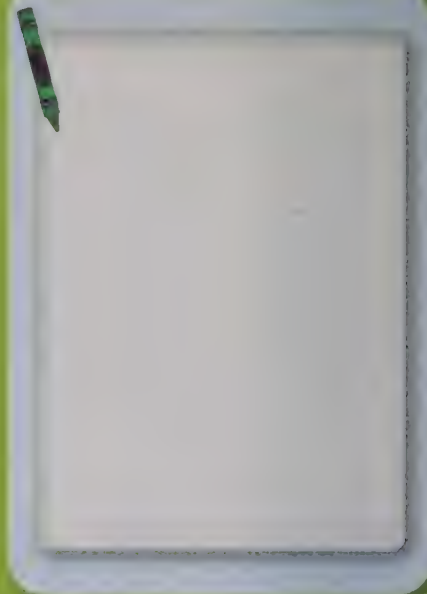


tierra que es
muy seca

a water habitat in a
glass tank or bowl



hábitat de agua en
una tanque de vidrio
o en un tazón



habitat that is
covered in water

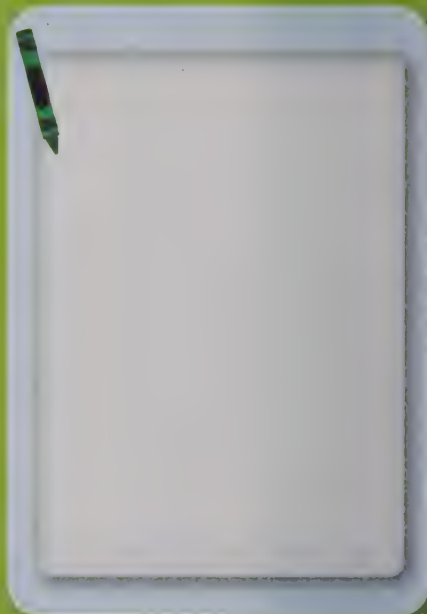


hábitat cubierto
de agua

to group things



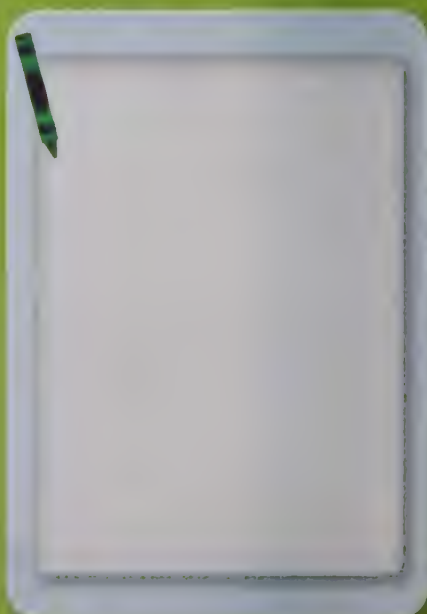
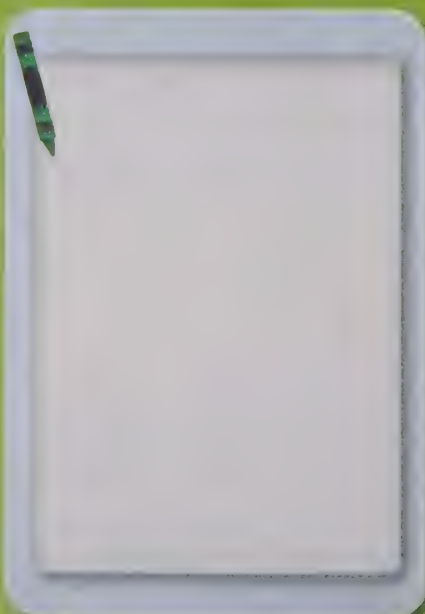
agrupar cosas

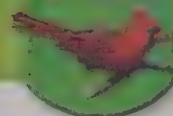


a large salty body of
water



cuerpo grande de
agua salada





Lesson 1



What do plants need to live?

- Plants need air, water, light, and space.
- Plants can get nutrients from the soil.

Lesson 2



What do animals need to live?

- Animals need air and water to live.
- Animals need food and shelter too.

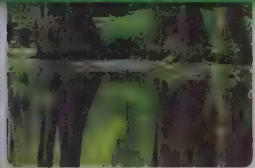
Lesson 3



How do plants and animals live in land habitats?

- Forests, lawns, terrariums, and deserts are land habitats.

Lesson 4



How do plants and animals live in water habitats?

- Wetlands, oceans, and aquariums are water habitats.

Lesson 5



What helps living things live in different places?

- You can classify plants and animals by their parts.





Lesson 1

 1.3.3

1. **Vocabulary** What are nutrients?



Lesson 2

 1.3.5, 1.4.2

2. **Compare** What do both plants and animals need?

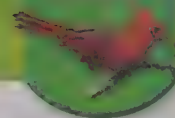
-  3. **Draw Conclusions** What does the baby fox use for shelter?



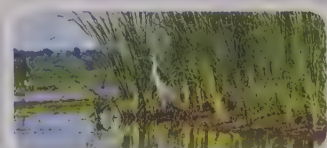
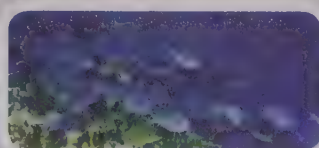
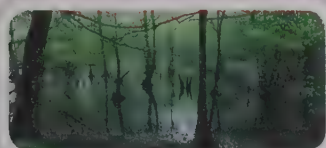
Lesson 3

 1.3.2, 1.3.4

4. **Describe Write** how the waxy covering of a cactus helps it live in the desert.

**Lesson 4** 1.3.2, 1.3.4

5. **Vocabulary** **Circle** the two wetland environments.

**Lesson 5** 1.3.1

6. Where is an animal with thick fur most likely to live?

A. a wetland

C. a warm habitat

B. the desert

D. a cold habitat

Got it?

Stop! I need help with



Go! Now I know

How can a mouse's color help keep it safe from hawks?

white beans = field where mice live

white beans with spots = light mice

black beans = dark mice

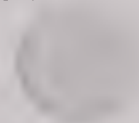
Materials



white beans

black beans

white beans
with black
spots



paper plate



clock with
second hand
(or timer or
stopwatch)

Inquiry Skill

You plan an **experiment** when you design a way to answer a scientific question.

Ask a question.

How can a mouse's color help keep it safe from hunting hawks?

Make a prediction.

1. Will light-colored mice or dark-colored mice be easier to see in a field?
 - (a) light-colored mice
 - (b) dark-colored mice

Plan a fair test.

Use the same number of white beans with spots and black beans.

Design your test.

- ☐ 2. List your steps.





Do your test.

- ☐ **3.** Follow your steps.

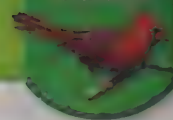
Collect and record data.

- ☐ **4.** Fill in the chart.

Tell your conclusion.

- 5.** Which mice in your model were harder to see?

- 6. Infer** Which mice are harder to see in a light habitat?



Make a Poster

- Find or draw a picture of an animal and a picture of a plant.
- Write a sentence about how the plant and animal need each other.
- Use your picture and sentence to make a poster.

I 1.3.5

Using Scientific Methods

1. Ask a question.
2. Make a hypothesis.
3. Plan a fair test.
4. Do your test.
5. Collect and record data.
6. Tell your conclusion.

Draw a Picture

- Draw a picture of three animals.
- Label parts that help the animals move.
- Classify the animals by these parts.

I 1.3.1

Grow Plants

- Gather soil and sand.
- Find out if plants grow better in soil or in sand.

I 1.3.3

Measurements

Metric and Customary Measurements

Science uses the metric system to measure things.

Metric measurement is used around the world.

Here is how different metric measurements compare to customary measurements.

Fahrenheit

Celsius

Temperature

Water freezes at 0°C , or 32°F .

Water boils at 100°C , or 212°F .

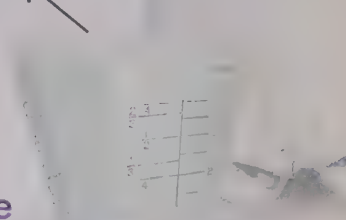


1 liter

1 cup

Volume

One liter is greater than 4 cups.



1 kilogram

1 pound

Mass

One kilogram is greater than 2 pounds.

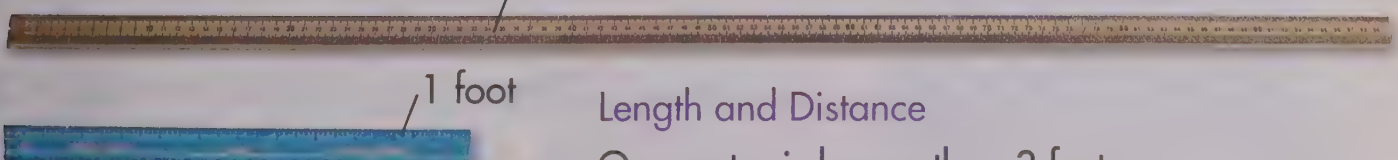


1 meter

1 foot

Length and Distance

One meter is longer than 3 feet.



Glossary

The glossary uses letters and signs to show how words are pronounced.

The mark ' is placed after a syllable with a primary or heavy accent. The mark ˘ is placed after a syllable with a secondary or lighter accent.

To hear these vocabulary words and definitions, you can refer to the AudioText CD, or log on to the digital path's Vocabulary Smart Cards.

Pronunciation Key

a in hat	ō in open	sh in she
ā in age	ò in all	th in thin
â in care	ô in order	тн in then
ä in far	oi in oil	zh in measure
e in let	ou in out	ə = a in about
ē in equal	u in cup	ə = e in taken
èr in term	ù in put	ə = i in pencil
i in it	ü in rule	ə = o in lemon
ī in ice	ch in child	ə = u in circus
o in hot	ng in long	

A

aquarium (ə kwar' ē əm) A water habitat in a glass tank or bowl. The goldfish live in an **aquarium**.

acuario Hábitat de agua en un tanque de vidrio o en un tazón. La carpa dorada puede vivir en un **acuario**.



B

boil (boil) To heat a liquid until it becomes a gas. The soup began to **boil** after placing it on the fire.

hervir Calentar un líquido hasta que se convierte en gas. La sopa empezó a **hervir** después de ponerla al fuego.



C

classify (klas' ə fī) To group things. You can **classify** trees.

clasificar Agrupar cosas. Puedes **clasificar** los árboles.



D

data (dā' tə) Information you collect. You can record **data** about animals.

datos Información que reúnes. Puedes anotar **datos** acerca de los animales.



desert (dez' ərt) Land that is very dry.
Many plants and animals live in the
desert.

desierto Tierra que es muy seca. En
el **desierto** viven muchas plantas y
animales diferentes.



E

earthworm (ərth' wərm) Animal that
lives in soil. The **earthworm** moves
through the soil.

lombriz Animal que vive en el suelo. La
lombriz se mueve por el suelo.



evaporate (i vap' ə rāt) To
change from a liquid to a gas.
The broth in the soup began to
evaporate.

evaporarse Cambiar de líquido a
gas. El caldo de la sopa comenzó
a **evaporarse**.



F

forest (fôr' ist) Land that has many trees and other plants. Some bears live in the **forest**.

bosque Terreno que tiene muchos árboles y otras plantas. Algunos osos viven en el **bosque**.



freeze (frēz) To change from a liquid to a solid. We let water **freeze** to make ice cubes.

congelar Cambiar de líquido a sólido. Dejamos **congelar** el agua para hacer cubitos de hielo.



G

gas (gas) Matter that can change size and shape. The beach toys were full of **gas**.

gas Materia que puede cambiar de tamaño y forma. Los juguetes de playa estaban llenos de **gas**.



goal (gōl) Something you want to do. You have a **goal** to build shelter for the duck.

objetivo Algo que quieres hacer. Tu **objetivo** es construir un albergue para el pato.



habitat (hab' ə tat) Where a plant or animal lives. The raccoon lives in a **habitat**.

hábitat Donde vive una planta o un animal. El mapache vive en un **hábitat**.



humus (hyü' mäs) Small bits of dead plants and animals in soil. Grandmother adds **humus** to the soil to help her plants grow.

humus Restos de plantas y animales muertos en el suelo. Mi abuela le añade **humus** al suelo para ayudar a sus plantas a crecer.



I

inquiry (in kwī' rē) Looking for answers.
You can use **inquiry** to learn about water.



indagación Buscar respuestas. Puedes hacer una **indagación** para aprender sobre el agua.

investigate (in ves' tə gāt) To look for answers to questions. Scientists **investigate** to learn about plants.



investigar Buscar respuestas a las preguntas. Los científicos **investigan** para saber más sobre las plantas.

L

label (lā' bəl) Shows what something is.
Labels can show parts of the drawing.

rótulo Palabra que identifica una cosa. Los **rótulos** pueden mostrar las partes del dibujo.



liquid (lik' wid) Matter that takes the shape of its container. My mother poured the **liquid** into the glasses.

líquido Materia que toma la forma del recipiente que la contiene. Mi mamá puso el **líquido** en los vasos.



mass (mas) The amount of matter in an object. The table has **mass**.

masa Cantidad de materia de un objeto. La mesa tiene **masa**.



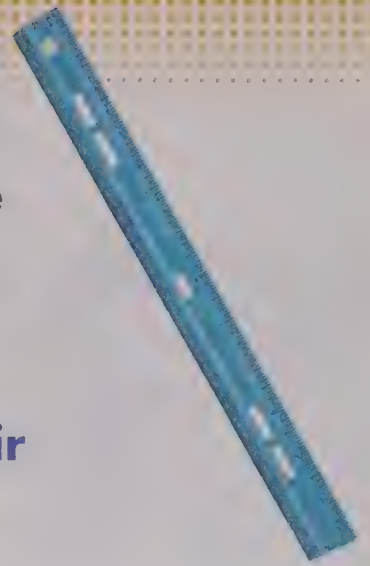
matter (mat' er) Anything that takes up space. Everything around you is made of **matter**.

materia Cualquier cosa que ocupa espacio. Todo lo que hay a nuestro alrededor está hecho de **materia**.



measure (mezʰ'ər) To use a tool to find the size or amount of something. You **measure** how long a pencil is.

medir Usar un instrumento para saber el tamaño o la cantidad de algo. Puedes **medir** la longitud de un lápiz.



melt (melt) To change from a solid to a liquid. The ice began to **melt** in the sun.

derretir Cambiar de sólido a líquido. El hielo empezó a **derretirse** bajo el sol.



mixture (miks' chər) More than one kind of matter. The carrots, broth, and noodles form a **mixture**.

mezcla Más de un tipo de materia. Las zanahorias, el caldo y los fideos forman una **mezcla**.



N

natural (nach' ə r ə l) Not made by people. Fruit and wood are **natural**.

natural No hecho por las personas. Las frutas y la madera son **naturales**.



need (nēd) Something a living thing must have to live. Plants grow when their **needs** are met.

necesidad Algo que un ser vivo necesita para vivir. Las plantas crecen cuando se satisfacen sus **necesidades**.



nutrients (nü' trē ənts) Materials that living things need. Plants need **nutrients** to change and grow.

nutrientes Sustancias que los seres vivos necesitan. Las plantas necesitan **nutrientes** para cambiar y crecer.





observe (əb sèrv/) When you use your senses. You can **observe** sounds that an animal makes.



observar Cuando usas tus sentidos. Puedes **observar** los sonidos que hace un animal.

ocean (ō' shən) A large salty body of water. Some fish live in an **ocean** habitat.



océano Cuerpo grande de agua salada. El hábitat donde viven algunos peces es el **océano**.



record (ri kôrd/) When scientists write or draw what they learn. It is important to **record** information during experiments.

Favorite Animals					
cat					
dog					
bird					

registrar Cuando los científicos escriben o dibujan lo que descubren. Es importante **registrar** la información durante un experimento.

S

safety (sāf' tē) Staying out of danger.
The girl washes her hands to stay **safe**.



seguridad Estar fuera de peligro. La niña se lava las manos para mantenerse **segura**.

shelter (shel' tər) A safe place.
The beaver uses sticks and mud for **shelter**.



albergue Lugar seguro. El castor usa palitos y lodo para hacer su **albergue**.

soil (soil) The top layer of Earth. You can find rocks in **soil**.



suelo La capa superior de la Tierra.
Puedes hallar rocas en el **suelo**.

solid (sol' id) Matter that has its own size and shape. Each toy in the box is a **solid**.

sólido Materia que tiene forma y tamaño propios. Todos los juguetes de la caja son **sólidos**.



solution (sə lü' shən) Something that solves a problem. The shelter is a **solution**.

solución Algo que resuelve un problema. El albergue es una **solución**.



T

technology (tek nol' ə jē) Using science to help solve problems. A computer is **technology**.

tecnología Usar las ciencias para resolver problemas. Una computadora es **tecnología**.



terrarium (tə rar' ē əm) A glass tank where plants and small animals live. Plants and small animals can live in a **terrarium**.



terrario Tanque de vidrio donde viven plantas y animales pequeños. Las plantas y los pequeños animales pueden vivir en un **terrario**.

tool (tül) Something that makes work easier. A hand lens is a **tool** that helps you see things.



instrumento Algo que te ayuda a hacer tu trabajo. Una lupa es un **instrumento** que te ayuda ver cosas.



weight (wāt) How heavy an object is. You can measure the **weight** of an object.



peso Cuán pesado es un objeto. Puedes medir el **peso** de un objeto.

wetland (wet' land/) Habitat that is covered in water. Tanya saw a blue heron when she visited the **wetland** near her home.

pantanal Hábitat cubierto de agua. Tanya vio una garza ceniza cuando fue al **pantanal** que queda cerca de su casa.



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