2

Science Standards
2.3.a. and 2.3.b.

Supports
ELA Standard:
Reading 2.2.7.

Student Workbook

California Education and the Environment Initiative

The Earth Rocks

California Education and the Environment Initiative
Approved by the California State Board of Education, 2010

The Education and the Environment Curriculum is a cooperative endeavor of the following entities:
California Environmental Protection Agency
California Natural Resources Agency
Office of the Secretary of Education
California State Board of Education
California Department of Education
California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:
Linda Adams, Secretary, California Environmental Protection Agency
Patty Zwarts, Deputy Secretary for Policy and Legislation, California Environmental Protection Agency
Andrea Lewis, Assistant Secretary for Education and Quality Programs, California Environmental Protection Agency
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Key Partners:
Special thanks to **Heal the Bay,** sponsor of the EEI law, for their partnership and participation in reviewing portions of the EEI curriculum.

Valuable assistance with maps, photos, videos and design was provided by the **National Geographic Society** under a contract with the State of California.

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Rocks and Minerals We Use 12

Name: _____

Instructions: People moving to California used rocks and minerals in many ways. Read the examples in the chart. Fill in the blanks below with words from the chart. (2 points for each sentence)

Gold	Iron	Pebbles	Rocks	Boulders
Reason for moving to California	Flat oven Iron pots	Game pieces	Wheel blocks Fire wall Bed warmer Writing tool	Trail markers

1. The women used ___ ___ ___ ___ ___ ___ ___ ___ to cook.

2. The girls used pebbles as ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

3. The people used boulders as ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ to help them know they were going the right way.

4. When the weather turned cooler, Sarah's father used heated rocks as a ___ ___ ___ ___ ___ ___ ___ ___ ___ at night.

5. To keep the wagons from rolling away, people used rocks as ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___.

Name: _____

Instructions:

1. Look at the two posters on the wall.
2. Choose one: the rocky coast or the pine forest.
3. Write its name on the **"Natural System:"** line.
4. In each box below, write about one way that rocks are used in this ecosystem. Use the posters and **Habitat Information Cards** for help.

Natural System: _____

Describe four ways rocks are used in this ecosystem.

1. Rocks

2. Rocks

3. Rocks

4. Rocks

Name: _____

Instructions: Read the sentences below. Fill in each blank with a word from the Word Bank. (2 points each)

Word Bank

washing away	plant roots	sand
small rocks	air	clean
water		

1. Salmon cover their eggs with _____ to keep them safe.

2. _____, _____, and _____ break big rocks into small rocks.

3. Small rocks under the ground help _____ water as it moves up out of the ground.

4. _____ is made of small pieces of small rocks.

5. Small rocks protect salmon eggs in the sand from _____.

Name: _____

Instructions: Look for ways people use rocks in or around the school. Complete the chart by writing your answers in the correct boxes.

Where Did You See the Rock?	How is the Rock Used?	Did a Person Change the Shape or Size of the Rock?

Name: _____

Instructions: Look at the pictures. Find the rocks people are using in the yard. List four ways rocks are used in the yard. Write your answers on the lines below. (1 point each)

1. _____

2. _____

3. _____

4. _____

Think of another way that people can use rocks in the yard. Write your idea on the line below. (1 point)

5. _____

Name: _____

Instructions: Read each clue. Fill in the blanks in the sentences with words from the Word Bank. No word will be used more than once. Some words in the box will not be used at all. The first one is done for you. (1 point each)

Word Bank

talc	garnet	salt	~~diamond~~
food	bauxite	graphite	soda cans
ring	baby powder	pencil	~~tools~~

Sample Completed Clue:
Some people think this mineral is pretty. Others think it is a hard worker. It is the hardest mineral.

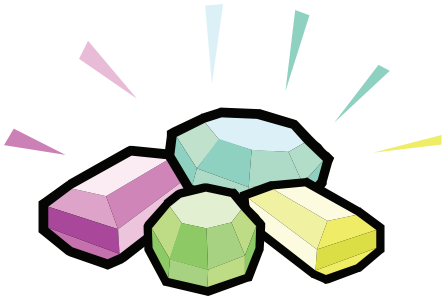
This mineral is a ____*diamond*____.

Diamonds are used in ____*tools*____ that need to cut through very hard materials.

Clue:

This mineral is the "write" thing to grab when you do your homework. It is the soft gray or black mineral inside this writing tool.

This mineral is _____, and it is the filling in a _____.



Name: _____

Clue:
This mineral will baby you with its softness. It is the softest mineral.

This mineral is _____.

People use it as _____.

Clue:
This mineral shakes things up and adds a little spice to life. It is a hard mineral.

This mineral is _____.

It is used on _____.

Clue:
This mineral is red and shiny like glass. Even though it is hard, people don't make this mineral work hard.

This mineral is _____.

It is worn in a _____.

Clue:
This mineral can have many colors. It is soft and dull.

This mineral is _____.

It is used to make _____.

My Rocky Job

Hi! My name is Jim, and my job rocks! I help make concrete. We make concrete with crushed rocks, water, air, and cement. First, we mix the water and cement together. This mixture works like paste or glue. The paste holds the crushed rocks together. We pour the wet concrete into many shapes. It gets very hard when it dries. Then the concrete is strong.

Workers know how much of each part to use. The concrete is hard to pour if the mix is too thick. If it is too thin, it will not be as strong when it dries.

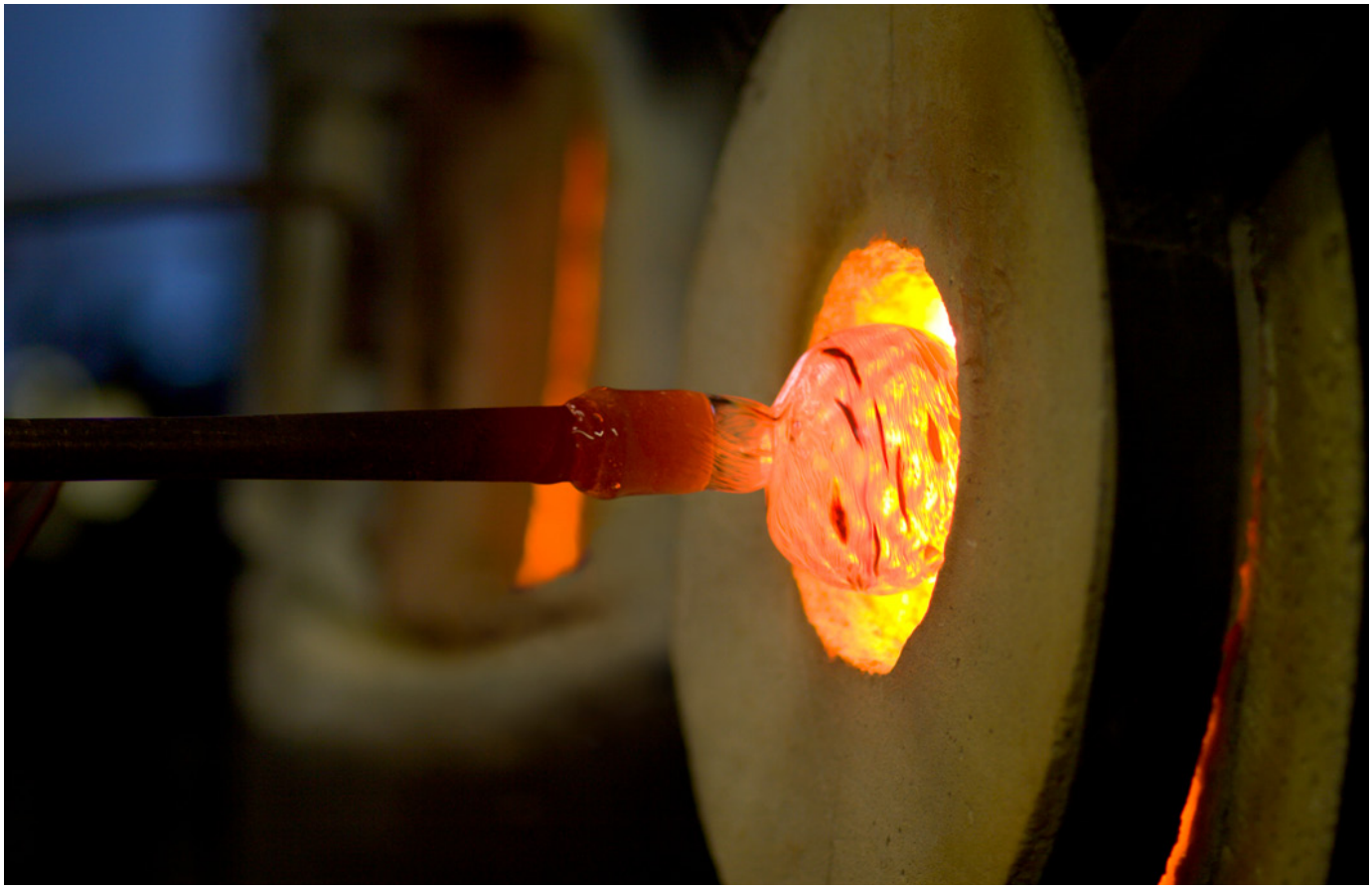
Workers make sure to use water that is clean. If they use water that is too dirty, the concrete will not be as strong.

My job is picking what kinds of rocks to use. About three-fourths of the mix is rocks. This makes my job very important. The right mix of rocks helps concrete last a very long time.

People use concrete to make houses, stores, and sidewalks. They pour it into animal shapes. They make steps, roads, and pools out of it. They even make bird baths from it!

Smoothing concrete

Clear as Glass



Shaping hot glass

Hello! My name is Anna. I help make glass. I mix sand with other things and cook the mix in a special oven. The air in the oven is very hot. The hot air melts the sand mix. Then the melted mix goes into a special machine. The machine shapes the glass into jars and bottles.

People use glass in many ways. They make beads, dishes, and light bulbs out of glass. They pour the melted mix into long sheets. They use the glass in doors and windows. People use glass in many shapes and colors. It all starts as sand. Some of the best things in life start out small!

Iron Man

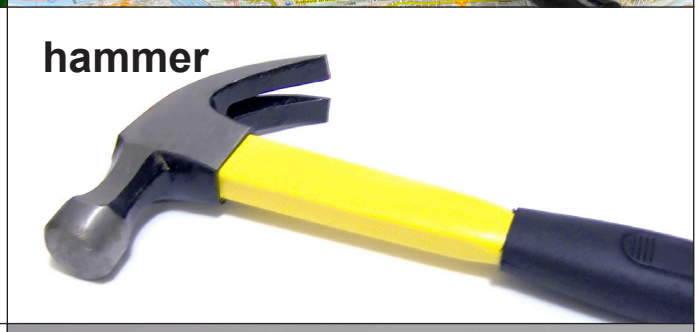
Hi! My name is Chris, and I am a miner. I drill holes in the ground. I look for iron ore. When I find it, workers put the big chunks of ore in trucks. The truck drivers take the ore to a place called a crusher. There people break the ore into smaller pieces. They take the iron from the rock. Next, the iron is sent to a steel mill. Here people put the iron in hot ovens. They mix the melted iron with other things. It turns into steel. The steel is shaped before it cools.

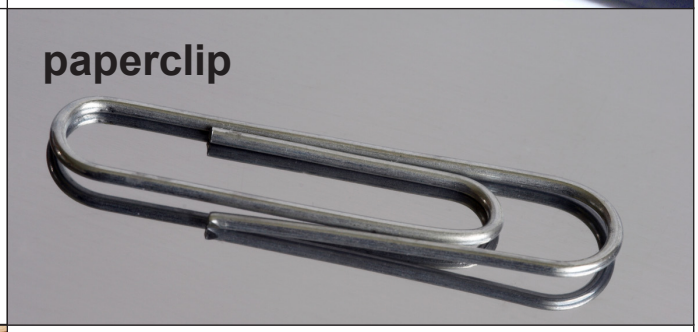
Iron pipes

People use steel when they make tall buildings. They make cars and tools from steel. They even make golf clubs with steel. Steel is in the toaster you use each morning. You may make your morning tea in a steel pot. Even the braces on your teeth can be made from steel! The next time you pick up a spoon, think about the iron ore that went into it.

Name: _____

Tony found these things around his house.

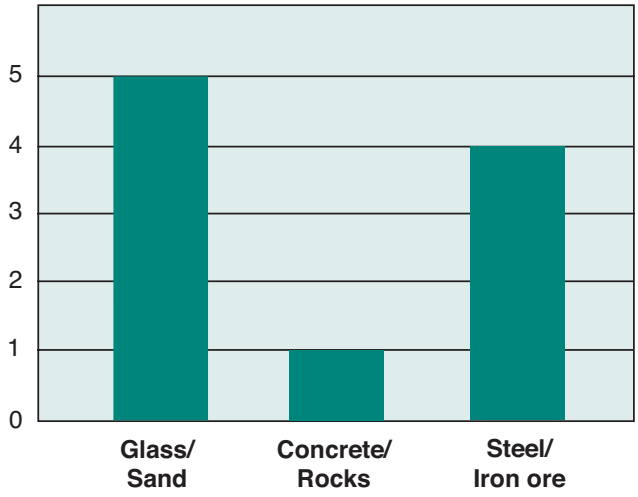




Name: _____

Tony looked at each thing. Then he sorted them all into three piles. The first pile held things with glass made from sand. The second pile held things with concrete made from rocks. The last pile held things with steel made from iron ore. He made a bar graph showing how many things were in each pile.

What Tony's Things Are Made Of



Instructions: Help Tony by filling in the chart below. Use the the photographs and the bar graph to help you. One example is written in the chart for you. (1 point each)

Glass/Sand	Concrete/Rocks	Steel/Iron Ore
jar of marbles		

Name: _____

Instructions: Read and answer the questions below. (2 points each)

What else might Tony find around the house that he could add to his lists?

1. List one more thing made of glass or sand.

   _____

2. List one more thing made of concrete or rocks.

   _____

3. List one more thing made of steel or iron ore.

   _____

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