SCIENCE

BONUS

STEAM Science

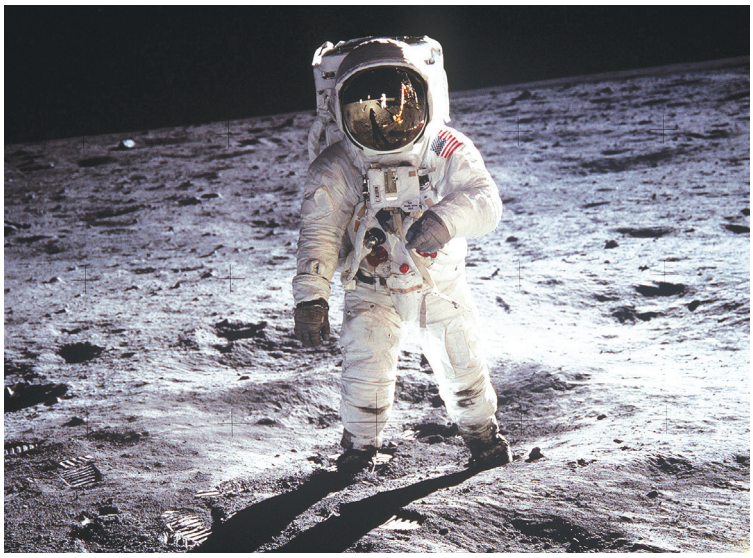
GRADES 1-5

NAME: _____

Student Worksheet

Activity One

Write a Short Report about Gravity of the Moon



In this lesson, you learned that the Moon's gravity doesn't pull nearly as hard as Earth's gravity. We also learned that mass is not quite the same thing as weight. Mass is how much stuff you are made of. Weight is how hard gravity pulls on your mass. As long as we stay on Earth, we can pretend that mass and weight are the same thing without getting mixed up.

But what if you went to the Moon? You would be made of just as much stuff, so you would have the same mass. But how much would you weigh?

For this activity, you will learn about gravity on the Moon. Read about trips that people took to the moon. Find out what experiments they did there to show that the Moon has less gravity. Also, read about gravity on the space station or on spaceships going to the Moon and back. Try to find the answers to these questions:

1. How much weaker is the Moon's gravity than Earth's gravity?

2. How much would you weigh on the Moon?

3. How high could you throw a ball on the Moon?

4. How high could you jump on the Moon?

5. When there is no gravity it is called weightlessness. Where are people weightless?

6. What is that like? For example, how are eating and drinking different?

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Activity Two

Energy from the Sun to Electrical Energy

You learned that almost all the energy we use came from the Sun. Most of the energy we use we get from coal, oil and natural gas (a gas from underground). These fuels have a lot of energy in them. They are easy to find and easy to use.

In this activity, you will visit a place where people are getting energy from the Sun in new ways. Here are places you could visit:

1. Visit a place with solar cells. Solar cells soak up sunlight and change it into electrical energy. There are no other steps—light energy goes right into electrical energy. There are some very big places, called solar farms. They are usually in the desert. You can find smaller versions closer to home. See if any of your neighbors have solar cells on their roofs, or solar lights in their yard. Some calculators are powered by tiny solar cells aslo.

2. Visit a wind farm. These are found in windy places. You will see hills covered with windmills. These are also called "wind turbines." When the wind spins the blades of the windmill, it changes this energy of motion into electrical energy. People have been getting energy from windmills for many years. You might want to find pictures of the old kind to see how they are different from ones you see today. Here is what the Sun has to do with it: The Sun heats some parts of the Earth more than others. Air rises from the hotter parts and this pulls in air from the cooler parts. This causes wind.

3. "Hydroelectric" means "electricity from water." Hydroelectric dams have been around for a long time. Water backs up behind a dam and a big lake forms. When the water runs out of the dam it spins a machine like the one in the wind turbines. This makes electricity. So stored energy is changed to energy of motion. This then changes to electrical energy. Here is what the Sun has to do with it: When the Sun warms water, it evaporates. Evaporating is when water turns into vapor (a gas) and rises into the air. When there is enough water vapor in the air, a cloud forms. Then it rains and water runs downhill into the dam. So it is the energy of the Sun that lifts the water from below the dam up into the dam.

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Student Worksheet

Activity Three

Three Kinds of Levers

There are three kinds of levers. They are called class 1, class 2, and class 3. There are three words you need to know about levers: load, fulcrum, and effort. Load is the thing you are lifting. Fulcrum is the thing under the lever that it moves up and down on. Effort is where you push or pull.

Get a board and a block and make all three classes of levers. Class 1 is like a hammer pulling a nail. Class 2 is like lifting the handles of a wheelbarrow. Class 3 is like pounding a nail with a hammer or swinging a baseball bat. For class 3, one of your hands is the effort and the other is the fulcrum. Try to find other examples of each class.

Try lifting a weight with all three classes. How does effort change from class to class? How does the direction of the push or pull change?

What happens if you put the fulcrum close to the effort for a class 1 lever? How does the effort change? If you push down fast, how does the load move?

This is the kind of lever used many years ago by an army attacking a castle. The lever was part of a machine called a "catapult." Catapults were used to throw stones over the castle wall. Here is a picture of a catapult:

Take your lever and fulcrum outside. Take something small and soft to throw with the catapult. (You don't want to hurt anyone.) This will be your load. Put the fulcrum close to one end. Put the small, soft thing on the other end. Hit the end close to the fulcrum with your fist or a hammer.

- What happens to the load?
- How much effort did you need?
- What was the speed of the load?
- How far did it go?

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Activity Four

How to Make a Magnet

A magnet is made up of lots of little magnets that you can't see. The magnet has magnetic force because all the little magnets are pointing the same way. A piece of iron also has little magnets in it. It doesn't act like a magnet because the little magnets are pointing in all directions. If you bring a piece of iron close to a magnet, the little magnets in the iron turn around and line up. When you take the iron away, they go back to being mixed up again. In this activity, you will turn a piece of iron into a magnet that stays magnetic.

What you will do is take a piece of iron and line it up with the north and south poles of the Earth. Then, whack one end of the piece of iron with a hammer. This will line up the little magnets in the iron. Here is what you will need:

- An iron rod about as big around as your finger and about two feet long. Be sure it is iron and not steel. A metal working shop could sell you one cheap. You might also find one at a hardware store.
- A compass. (A compass is a tool with a needle in it that always points toward the North Pole of Earth. This is because the needle is a little magnet and Earth is really a big magnet.)
- A hammer.
- A few feet of string.

This is what you do:

1. Use the compass to find the direction North.

2. Tie the string around the middle of the iron rod. Slide the string back and forth until you find the place where the rod balances.

3. Turn the rod around until one end is pointing north.

4. Hold the rod up by the string. Whack one end of the rod with the hammer a few times. This lines up the little magnets in the rod.

5. Find out if you made a magnet. If you turned the rod into a magnet, it will be able to pick up small iron things. Here is another test: Hold the bar up by the string so that it is not pointing North. If you made a magnet, one end of the magnet will swing around to point North.

Do you think this would work better if the iron rod were warm? Why?

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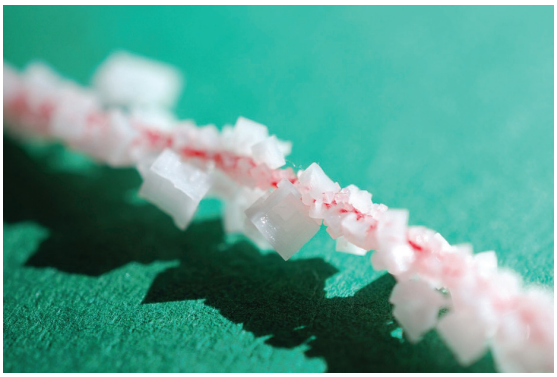
Activity Five

Growing Crystals

You read about crystals in this book. You can grow crystals from things you find around the house or in a store. These are the materials you can use to grow crystals:



- table salt
- white sugar
- Borax

You will also need:

- Three clean, wide shallow bowls.
- Distilled water (You can also get this at the store. It is just very pure water.).
- A clean container to mix the water and crystals in.

This is what you do:

1. Warm the distilled water a little (not hot).
2. Start with salt. Add about a cup of warm water to a container. Start adding salt while stirring. The salt will disappear. Keep adding salt until it doesn't all disappear.
3. Let the salt settle to the bottom.
4. Carefully pour the liquid off the top into one of the bowls. It doesn't need to be very deep.
5. Carefully set the bowl where it won't be disturbed.
6. Repeat steps 2 to 5 with the sugar, then with the Borax.
7. Wait. If no crystals show up in the bowls, try adding one small grain of the material you started with.

You should have grown some crystals. They should be much larger than the small grains you started with. Look at the crystals closely. Are they all the same shape? Describe the shapes. A magnifying glass will help.

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Student Worksheet

Activity Six

Build a Compound Machine

You have seen pictures of compound machines in the last section of this book. Here is one you can build. It will combine an inclined plane and a pulley. This is what you will need:

- a board long enough to use for a ramp
- something to prop up one end
- about two feet of string
- a wooden block
- a spring scale
- a screw eye

This is what you do:

1. Prop up one end of the board to make an inclined plane.
2. Screw the screw eye into the middle of one side of the block. (Putting soap on the point end of the screw eye will make it go in easier.)
3. Hook the hook of the scale into the screw eye. Pull the block up the inclined plane. The scale will tell you how much force was needed. Write the number down.
4. Put the block back at the bottom of the inclined plane.
5. Tie one end of the string to something at the top of the inclined plane.
6. Pass the other end of the string through the screw eye and bring it back toward the top of the inclined plane.
7. Tie a loop in the free end of the string. Put the hook on the scale into the loop.
8. Pull on the scale to make the block slide up the inclined plane. Write down how much force it takes.

You did the same amount of work with a simple machine and a compound machine. How much force was needed for each machine? If there was a difference, how can you explain it?

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Student Worksheet

Activity One

Write a Short Report about a Water Ecosystem

An aquarium is a water ecosystem. It looks like a square box. It is made of glass and filled with water, fish and plants. The aqua- part of the word means water. This is an ecosystem that someone has made. It is closed off from the outside. It has all the plants and animals needed to live.

If you already have an aquarium, you can study it for your report. You could also study a friend's aquarium. If you don't know anyone who has one, you can go to a pet store. They will have many big aquariums. One last thing you could do is go to a big public aquarium. There you will see many big tanks filled with fish and water plants.

See what kind of fish are in the ecosystem. Are there other animals? See what kind of plants there are. This is what you should include in your report:

Name the producers.

Name the consumers.

Tell where the animals get their food.

Tell whether the animals eat the plants.

Name any decomposers you see.

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Student Worksheet

Activity Two

How the Sun Gives Energy to Plants

The parts of plants that make food are green. This is where air, water, and sunlight are working together. The green color is something called chlorophyll (CLOR-o-fill). Chlorophyll must be there for a plant to store energy as food. Part of chlorophyll is the mineral magnesium (mag-NEE-zee-um) that the plant gets from the ground.

Besides magnesium, a plant needs air, water, and sunlight. You have probably seen a plant die because it was not watered. We will study what happens to a plant when it doesn't get enough sunlight and air.

Not Enough Sunlight

For this part you need a green lawn and something heavy and flat, like a brick or board. You will also need some black tape with a sticky side.

- Put the heavy flat thing on the lawn.
- Lift the flat thing up every day and see if the grass has changed.
- Cut a small shape out of the tape.
- Stick the tape on a large, green leaf on a tree or other green plant.
- Come back in a week and take the tape off. Notice any changes? If nothing changed, put the tape back and check it again in a week.

What happened to the grass under the flat thing? Why did this happen? What happened to the leaf under the tape? Why did this happen?

Not Enough Air

For this part you need some dirt, a small plant, and a jar with a lid. The jar should be just big enough to put the plant in.

- Put the dirt in the bottom of the jar and plant the plant in it.
- Add plenty of water.
- Put the lid on tight.
- Put the jar in a sunny window or outside.
- Watch the plant every day for changes.

What happened to the plant? Did it have enough sunlight? Did it have enough air? Did it have enough water?

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Activity Three

Learn About an Arctic Food Web

The arctic is far in the north where it is very cold. A food web is like a lot of food chains put together. A food web shows as many of the living things in an ecosystem as it can. Arrows point from what is doing the eating to what it eats. The arrows also show which way energy flows.

Read about members of an arctic food web. You can search for "arctic food web" online, or you can look for books in the library. Much arctic life is in the ocean. Other life stays on land. Some animals and birds live both on land and in the ocean.

Here are some of the important animals to look for:

- polar bear
- walrus
- fox
- rabbit (also called hare)
- whales
- seals
- fish
- birds

Try to answer these questions:

- Which are the producers?
- Which are the consumers?
- Which consumers eat plants?
- Which consumers eat other animals?
- Which are the decomposers?
- Where does each animal live?

Make a food web on a large piece of cardboard or paper. Put the names or pictures of the plants and animals on the web. Use arrows to show how energy flows through the food web.

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Activity Four

Plant Seed Adaptations

It is good for most plants to spread their seeds. Plants have several ways to do this. In this activity you will collect seeds. You will look for the adaptation that spreads the seeds. Look for seeds that spread in the ways shown below.

Spread by Animals:
You will be the animal. You will use your clothes to collect the kind of seeds that stick to animal fur. Go out and walk through fields with many kinds of plants. Wear the fuzziest pair of pants and the fuzziest socks you have. Seeds will stick to your pants and socks the way they stick to animal fur. When you get home, pick the seeds off of your clothes. Look at them closely. What made them stick?

Spread by Wind:
Look for seeds that are spread by wind. They will be very small seeds with something that helps them fly through the air when it is windy. Look for a tree that has seeds with two wings. These spin as they fly through the air.

Spread by Water:
Some seeds float. They can float for a long time, and the water won't hurt them. Look for plants along a stream. Do the seeds of the plants float? Which plants do you think use water to spread its seeds? Have you seen a coconut? It is a very big seed that can float from one island to another. When it gets to its new island it can sprout and become a coconut tree.

Finally, look at the picture of this seed. It is the seed of a plant called a spiral filaree. The pointy end on the bottom is the seed part. This seed is from a plant that grows in fields of high grass. It is shaped like a screw. This helps it get to the ground and grow. Can you think of how this works? Think about what would happen to the seed if the wind moved the grass around.

a spiral filaree seed

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Student Worksheet

Activity Five

Life Cycle of a Frog

Frogs live in ponds and even puddles. They live in water that is still. They usually don't live in fast flowing streams. They like to eat bugs. Look for a buggy puddle or a pond. Look for frogs in it. In the spring, frogs lay eggs that float on the water. The picture shows what frog eggs look like.

When you find some eggs, wait for them to hatch. Come back every few days to look. After the eggs hatch, you will see tadpoles in the water. The picture shows what they look like.

Keep coming back to the frog pond. Do you see the tadpoles changing? How are they changing? How can you tell when they have become a grown frog?

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Student Worksheet

Activity Six

Ant Brains

First of all, be careful with ants. Some of them can bite and sting.

Ants have brains and senses. Their brains and senses are more like ours than you might think. In this activity you will watch ants to learn about their brains and senses.

First you will have to find an anthill. It will have a small hole where ants go in and out. It may be at the top of a pile of dirt. Some ants also live under rocks and logs. If you can't find an anthill, find an ant. Follow the ant back to its anthill.

You will see ants in a long line coming and going. They are going to a place they have found food. They bring the food back to the anthill. Try to follow them to the food and back. They mark the trail to the food with smells.

Ants smell with their feelers (antennae). Two feelers come out of the head. Can you see them? Their sense of touch is also in the feelers. Ants also have a sense of sight. They can see, but not as well as we can. They can also hear sounds with their feelers. They use smell and touch to talk to each other. Ants can learn things. They can teach each other. An old ant can teach a young ant how to get to food.

Watch the ants closely. Try to see them talking with their feelers. Watch them following a smell trail. See if you can see one ant teaching something to another ant.

How do ants use their senses differently than we do?

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Student Worksheet

Activity One

Wind Direction

A weather vane tells which way the wind is blowing. Some are very fancy. You can make a simple one.

This is what you need:

- a straw
- a sheet of thick paper
- a pin
- a pencil
- some clay

This is what a weather vane looks like.

This is what you do:

1. Cut a slit in each end of the straw.
2. Cut shapes out of the paper that look like the ends of an arrow. The tail end should be bigger than the pointy end.
3. Put the pieces of paper in the slits in the straw.
4. Make a ball of clay and stick the pointy end of the pencil in it. You could also stick the pencil in the ground or in the dirt of a flower pot.
5. Push the pin half way through the middle of the straw.
6. Push the pin into the eraser on the end of the pencil.

When there is wind, the weather vane will point to the direction the wind is blowing from.

What direction is the wind blowing?

_____

How many times does the direction change?

_____

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Student Worksheet

Activity Two

Take a Close Look at the Moon

The Moon looks a lot different when you look at it more closely. The picture below shows what it looks like through binoculars or a telescope. These are things that make things look closer. You can see these here:

Binoculars **Telescope**

Get some binoculars or a telescope. Your school or your parents might have them. Look at the moon. Try to make sure it is a full moon.

What do you see?
Is the Moon smooth or bumpy?
Does it look like big things have been hitting the Moon?

Did you know that you can only see one side of the Moon? You will never see the other side unless you go there. Why is the same side of the Moon always facing Earth?

This is what the Moon looks like through binoculars or a telescope.

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Student Worksheet

Activity Three

Look at Fossils in a Museum

Visit a museum that has a lot of fossils. The fossils of the big animals are the most exciting. There will also be fossils of small things, like plants, fish and bugs. They are all interesting. The ones in the picture are called dinosaurs. They all died many years ago. They are like the lizards we see today, but they were much bigger. Most of the fossils in the museum will be of things that no longer live on Earth.




These are fossils. They are from dinosaurs.

While at the museum, find all the different fossils you can find. For each fossil, answer the following questions:

1. What is the fossil of? _____

2. Where was it found? _____

3. How old is it? _____

4. Does it still live today? _____

5. If it's no longer on Earth, how did it disappear? _____

6. What is 1 interesting fact about it? _____

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Student Worksheet

Activity Four

Life "Down Under"

You know that the Earth is tilted to one side. This makes the seasons change. When the north half of the Earth is tilted toward the Sun, it is summer in that part. Six months later it is winter. This is because the north half is tilted away from the Sun.

But what about the southern half of the Earth? They have their summer when we have our winter. Australia is a big country in the southern half of the Earth. They have the same holidays as people in the northern half. They have them at the same time. In Australia, Christmas is in their summer. This is because it is summer in December for them.

A sandman—instead of a snowman—on an Australian beach in December.

They change a few things. On the day after Christmas, they like to go to the beach. They build sandmen instead of snowmen. They sing the same holiday songs but they change some of the words. They don't sing about snow.

Read about the holiday season in Australia. You will learn some interesting things. Try to find the answers to these questions:

- When do students have their summer vacation?
- What kind of trees do Australians use to decorate their houses?
- What kind of holiday food do people eat?
- What pulls Santa's sleigh?

Here is another interesting thing to think about. Australia is called "Down Under." But is it? If you look at a map, you will see that America is on top and Australia is on the bottom. This is because the first people to make maps lived in the northern part. They thought they lived on the top. Earth really has no top or bottom, though. Earth just floats through space, and there is no up or down in space. Think about it.

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Student Worksheet

Activity Five

Study a Tilted Earth

It this activity, you will study how the light of the Sun falls on Earth and the Moon. You will learn what makes day, night, sunrise, and sunset. You will learn how the light of the Sun falling on the Moon makes it seem to change shape.

This is what you will need:

- a bright flashlight
- a dark room
- a baseball, a softball or a grapefruit
- a globe

A globe is a map of the Earth in the shape of a ball. A globe looks more like the real Earth than a flat map does. It should be the kind of globe that is on a stand and can spin. It will be tilted the way Earth is tilted.

This is what you do:

1. Get into groups. One person is in charge of the Sun (flashlight). One person is in charge of the Earth (globe). One person is in charge of the Moon (ball or grapefruit).

2. See day and night. In a dark room, place the flashlight so that it shines on the globe. The flashlight is the Sun. Slowly turn the globe. As you face it, turn it so it spins toward your right hand. See how the part of Earth in sunlight changes.

3. Can you find where you live on the globe? If not, just pick a spot. Slowly spin the globe. Watch how the Sun rises on that spot. Spin it more and watch how the Sun sets.

4. Turn the globe stand so that the top is tipped toward the flashlight. This is summer in the north and winter in the south. Spin the globe. Can you find a place that is never dark? Can you find a place that is always dark? Can you change the globe so that it is winter in the north and summer in the south?

5. The ball or grapefruit is the Moon. The Moon circles the Earth about where the middle (equator) is. Carry the ball (the Moon) around the globe with the flashlight shining. Watch how the lit and shaded parts of the Moon change. Where is the Moon when it looks full? Where is the moon when it is all dark? Where is the Moon when it is half lit?

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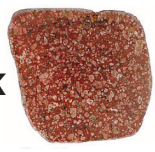
Student Worksheet

Activity Six

Looking for Rocks

In this activity, you will look for different kinds of rocks. Eight kinds of rocks are shown below. Get a notebook and tell about the rocks you find. Tell where you found them and what they look like. Tell how hard they are.

Limestone 	White in color. Comes in all sizes. Sometimes a whole mountain is made of it. This layer formed from the bones and shells of dead sea animals.
Sandstone 	Sand in color. Look for it in cliffs. These cliffs often have pretty stripes of red, yellow, and orange. Formed mostly from Sand.
Coal 	Black in color. Sometimes shiny. It is a layer that settled. Forms from a layer of dead plants. You won't see it lying around on the ground.
Quartz 	Clear like glass. Looks something like diamond. Pieces can be found in most other kinds of rock. When it isn't pure, it can have different colors. Pure quartz is clear and is in pieces with six sides.
Granite 	Usually gray in color. It has little bits of other things in it. Look for black dots and bits that sparkle.
Basalt 	Dark gray in color. Formed when melted rock cools very slowly. It can take the form of tall towers with six sides.
Obsidian 	Black in color, shiny and smooth. A kind of glass. Formed in volcanoes. Sometimes you can see through it a little. Native Americans used it to make arrowheads and other tools.
Lava rock 	Black or red in color. It is what melted rock turns into after it flows out of a volcano and then cools. It is lighter than most rocks because it has air bubbles in it.

Publication Listing

SOCIAL STUDIES - Books

ITEM #	TITLE
	DAILY LIFE SKILLS SERIES
CC5790	Daily Marketplace Skills Gr. 6-12
CC5791	Daily Social & Workplace Skills Gr. 6-12
CC5792	Daily Health & Hygiene Skills Gr. 6-12
CC5793	Daily Life Skills Big Book Gr. 6-12
	21ST CENTURY SKILLS SERIES
CC5794	Learning Problem Solving Gr. 3-8
CC5795	Learning Communication & Teamwork Gr. 3-8
CC5796	Learning Skills for Global Competency Gr. 3-8
CC5797	Learning to Learn Big Book Gr. 3-8
	MAPPING SKILLS SERIES
CC5786	Gr. PK-2 Mapping Skills with Google Earth
CC5787	Gr. 3-5 Mapping Skills with Google Earth
CC5788	Gr. 6-8 Mapping Skills with Google Earth
CC5789	Gr. PK-8 Mapping Skills with Google Earth Big Book
	NORTH AMERICAN GOVERNMENTS SERIES
CC5757	American Government Gr. 5-8
CC5758	Canadian Government Gr. 5-8
CC5759	Mexican Government Gr. 5-8
CC5760	Governments of North America Big Book Gr. 5-8
	WORLD GOVERNMENTS SERIES
CC5761	World Political Leaders Gr. 5-8
CC5762	World Electoral Processes Gr. 5-8
CC5763	Capitalism vs. Communism Gr. 5-8
CC5777	World Politics Big Book Gr. 5-8
	WORLD CONFLICT SERIES
CC5511	American Revolutionary War Gr. 5-8
CC5500	American Civil War Gr. 5-8
CC5512	American Wars Big Book Gr. 5-8
CC5501	World War I Gr. 5-8
CC5502	World War II Gr. 5-8
CC5503	World Wars I & II Big Book Gr. 5-8
CC5505	Korean War Gr. 5-8
CC5506	Vietnam War Gr. 5-8
CC5507	Korean & Vietnam Wars Big Book Gr. 5-8
CC5508	Persian Gulf War (1990-1991) Gr. 5-8
CC5509	Iraq War (2003-2010) Gr. 5-8
CC5510	Gulf Wars Big Book Gr. 5-8
	WORLD CONTINENTS SERIES
CC5750	North America Gr. 5-8
CC5751	South America Gr. 5-8
CC5768	The Americas Big Book Gr. 5-8
CC5752	Europe Gr. 5-8
CC5753	Africa Gr. 5-8
CC5754	Asia Gr. 5-8
CC5755	Australia Gr. 5-8
CC5756	Antarctica Gr. 5-8
	WORLD CONNECTIONS SERIES
CC5782	Culture, Society & Globalization Gr. 5-8
CC5783	Economy & Globalization Gr. 5-8
CC5784	Technology & Globalization Gr. 5-8
CC5785	Globalization Big Book Gr. 5-8

SOCIAL STUDIES - Software

ITEM #	TITLE
	MAPPING SKILLS SERIES
CC7770	Gr. PK-2 Mapping Skills with Google Earth
CC7771	Gr. 3-5 Mapping Skills with Google Earth
CC7772	Gr. 6-8 Mapping Skills with Google Earth
CC7773	Gr. PK-8 Mapping Skills with Google Earth Big Box

SCIENCE - Software

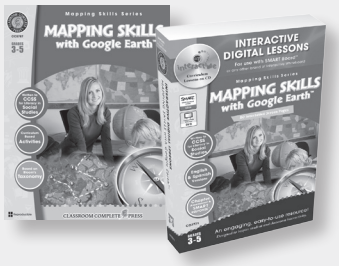
	SPACE AND BEYOND SERIES
CC7557	Solar System Gr. 5-8
CC7558	Galaxies & the Universe Gr. 5-8
CC7559	Travel & Technology Gr. 5-8
CC7560	Space Big Box Gr. 5-8
	HUMAN BODY SERIES
CC7549	Cells, Skeletal & Muscular Systems Gr. 5-8
CC7550	Senses, Nervous & Respiratory Systems Gr. 5-8
CC7551	Circulatory, Digestive & Reproductive Systems Gr. 5-8
CC7552	Human Body Big Box Gr. 5-8
	FORCE, MOTION & SIMPLE MACHINES SERIES
CC7553	Force Gr. 3-8
CC7554	Motion Gr. 3-8
CC7555	Simple Machines Gr. 3-8
CC7556	Force, Motion & Simple Machines Big Box Gr. 3-8

ENVIRONMENTAL STUDIES - Software

	CLIMATE CHANGE SERIES
CC7747	Global Warming: Causes Gr. 3-8
CC7748	Global Warming: Effects Gr. 3-8
CC7749	Global Warming: Reduction Gr. 3-8
CC7750	Global Warming Big Box Gr. 3-8

LANGUAGE ARTS - Software

CC7112	Word Families - Short Vowels Gr. PK-2
CC7113	Word Families - Long Vowels Gr. PK-2
CC7114	Word Families - Vowels Big Box Gr. PK-2
CC7100	High Frequency Sight Words Gr. PK-2
CC7101	High Frequency Picture Words Gr. PK-2
CC7102	Sight & Picture Words Big Box Gr. PK-2
CC7104	How to Write a Paragraph Gr. 3-8
CC7105	How to Write a Book Report Gr. 3-8
CC7106	How to Write an Essay Gr. 3-8
CC7107	Master Writing Big Box Gr. 3-8
CC7108	Reading Comprehension Gr. 5-8
CC7109	Literary Devices Gr. 5-8
CC7110	Critical Thinking Gr. 5-8
CC7111	Master Reading Big Box Gr. 5-8



SCIENCE - Books

ITEM #	TITLE
	HANDS-ON STEAM SCIENCE SERIES
CC4100	Physical Science Gr. 1-5
CC4101	Life Science Gr. 1-5
CC4102	Earth & Space Science Gr. 1-5
CC4103	Hands-On Science Big Book Gr. 1-5
	ECOLOGY & THE ENVIRONMENT SERIES
CC4500	Ecosystems Gr. 5-8
CC4501	Classification & Adaptation Gr. 5-8
CC4502	Cells Gr. 5-8
CC4503	Ecology & The Environment Big Book Gr. 5-8
	MATTER & ENERGY SERIES
CC4504	Properties of Matter Gr. 5-8
CC4505	Atoms, Molecules & Elements Gr. 5-8
CC4506	Energy Gr. 5-8
CC4507	The Nature of Matter Big Book Gr. 5-8
	FORCE & MOTION SERIES
CC4508	Force Gr. 5-8
CC4509	Motion Gr. 5-8
CC4510	Simple Machines Gr. 5-8
CC4511	Force, Motion & Simple Machines Big Book Gr. 5-8
	SPACE & BEYOND SERIES
CC4512	Solar System Gr. 5-8
CC4513	Galaxies & The Universe Gr. 5-8
CC4514	Travel & Technology Gr. 5-8
CC4515	Space Big Book Gr. 5-8
	HUMAN BODY SERIES
CC4516	Cells, Skeletal & Muscular Systems Gr. 5-8
CC4517	Senses, Nervous & Respiratory Systems Gr. 5-8
CC4518	Circulatory, Digestive & Reproductive Systems Gr. 5-8
CC4519	Human Body Big Book Gr. 5-8

ENVIRONMENTAL STUDIES - Books

	MANAGING OUR WASTE SERIES
CC5764	Waste: At the Source Gr. 5-8
CC5765	Prevention, Recycling & Conservation Gr. 5-8
CC5766	Waste: The Global View Gr. 5-8
CC5767	Waste Management Big Book Gr. 5-8
	CLIMATE CHANGE SERIES
CC5769	Global Warming: Causes Gr. 5-8
CC5770	Global Warming: Effects Gr. 5-8
CC5771	Global Warming: Reduction Gr. 5-8
CC5772	Global Warming Big Book Gr. 5-8
	GLOBAL WATER SERIES
CC5773	Conservation: Fresh Water Resources Gr. 5-8
CC5774	Conservation: Ocean Water Resources Gr. 5-8
CC5775	Conservation: Waterway Habitat Resources Gr. 5-8
CC5776	Water Conservation Big Book Gr. 5-8
	CARBON FOOTPRINT SERIES
CC5778	Reducing Your Own Carbon Footprint Gr. 5-8
CC5779	Reducing Your School's Carbon Footprint Gr. 5-8
CC5780	Reducing Your Community's Carbon Footprint Gr. 5-8
CC5781	Carbon Footprint Big Book Gr. 5-8

LITERATURE KITS™ - Books

ITEM #	TITLE
	GRADES 1-2
CC2100	Curious George (H. A. Rey)
CC2101	Paper Bag Princess (Robert N. Munsch)
CC2102	Stone Soup (Marcia Brown)
CC2103	The Very Hungry Caterpillar (Eric Carle)
CC2104	Where the Wild Things Are (Maurice Sendak)
	GRADES 3-4
CC2300	Babe: The Gallant Pig (Dick King-Smith)
CC2301	Because of Winn-Dixie (Kate DiCamillo)
CC2302	The Tale of Despereaux (Kate DiCamillo)
CC2303	James and the Giant Peach (Roald Dahl)
CC2304	Ramona Quimby, Age 8 (Beverly Cleary)
CC2305	The Mouse and the Motorcycle (Beverly Cleary)
CC2306	Charlotte's Web (E.B. White)
CC2307	Owls in the Family (Farley Mowat)
CC2308	Sarah, Plain and Tall (Patricia MacLachlan)
CC2309	Matilda (Roald Dahl)
CC2310	Charlie & The Chocolate Factory (Roald Dahl)
CC2311	Frindle (Andrew Clements)
CC2312	M.C. Higgins, the Great (Virginia Hamilton)
CC2313	The Family Under The Bridge (N.S. Carlson)
CC2314	The Hundred Penny Box (Sharon Mathis)
CC2315	Cricket in Times Square (George Selden)
CC2316	Fantastic Mr Fox (Roald Dahl)
CC2317	The Hundred Dresses (Eleanor Estes)
CC2318	The War with Grandpa (Robert Kimmel Smith)
CC2320	The Chocolate Touch (Patrick Skene Catling)
	GRADES 5-6
CC2500	Black Beauty (Anna Sewell)
CC2501	Bridge to Terabithia (Katherine Paterson)
CC2502	Bud, Not Buddy (Christopher Paul Curtis)
CC2503	The Egypt Game (Zilpha Keatley Snyder)
CC2504	The Great Gilly Hopkins (Katherine Paterson)
CC2505	Holes (Louis Sachar)
CC2506	Number the Stars (Lois Lowry)
CC2507	The Sign of the Beaver (E.G. Speare)
CC2508	The Whipping Boy (Sid Fleischman)
CC2509	Island of the Blue Dolphins (Scott O'Dell)
CC2510	Underground to Canada (Barbara Smucker)
CC2511	Loser (Jerry Spinelli)
CC2512	The Higher Power of Lucky (Susan Patron)
CC2513	Kira-Kira (Cynthia Kadohata)
CC2514	Dear Mr. Henshaw (Beverly Cleary)
CC2515	The Summer of the Swans (Betsy Byars)
CC2516	Shiloh (Phyllis Reynolds Naylor)
CC2517	A Single Shard (Linda Sue Park)
CC2518	Hoot (Carl Hiaasen)
CC2519	Hatchet (Gary Paulsen)
CC2520	The Giver (Lois Lowry)
CC2521	The Graveyard Book (Neil Gaiman)
CC2522	The View From Saturday (E.L. Konigsburg)
CC2523	Hattie Big Sky (Kirby Larson)
CC2524	When You Reach Me (Rebecca Stead)
CC2525	Criss Cross (Lynne Rae Perkins)
CC2526	A Year Down Yonder (Richard Peck)
CC2527	Maniac Magee (Jerry Spinelli)

LITERATURE KITS™ - Books

ITEM #	TITLE
CC2528	From the Mixed-Up Files of Mrs. Basil E. Frankweiler (E.L. Konigsburg)
CC2529	Sing Down the Moon (Scott O'Dell)
CC2530	The Phantom Tollbooth (Norton Juster)
CC2531	Gregor the Overlander (Suzanne Collins)
CC2532	Through the Looking-Glass (Lewis Carroll)
CC2533	Wonder (R.J. Palacio)
CC2534	Freak the Mighty (Rodman Philbrick)
CC2535	Tuck Everlasting (Natalie Babbitt)
	GRADES 7-8
CC2700	Cheaper by the Dozen (Frank B. Gilbreth)
CC2701	The Miracle Worker (William Gibson)
CC2702	The Red Pony (John Steinbeck)
CC2703	Treasure Island (Robert Louis Stevenson)
CC2704	Romeo & Juliet (William Shakespeare)
CC2705	Crispin: The Cross of Lead (Avi)
CC2706	Call It Courage (Armstrong Sperry)
CC2707	The Boy in the Striped Pajamas (John Boyne)
CC2708	The Westing Game (Ellen Raskin)
CC2709	The Cay (Theodore Taylor)
CC2710	The Hunger Games (Suzanne Collins)
CC2712	The Pearl (John Steinbeck)
	GRADES 9-12
CC2001	To Kill A Mockingbird (Harper Lee)
CC2002	Angela's Ashes (Frank McCourt)
CC2003	The Grapes of Wrath (John Steinbeck)
CC2004	The Good Earth (Pearl S. Buck)
CC2005	The Road (Cormac McCarthy)
CC2006	The Old Man and the Sea (Ernest Hemingway)
CC2007	Lord of the Flies (William Golding)
CC2008	The Color Purple (Alice Walker)
CC2009	The Outsiders (S.E. Hinton)
CC2010	Hamlet (William Shakespeare)
CC2011	The Great Gatsby (F. Scott Fitzgerald)
CC2012	The Adventures of Huckleberry Finn (Mark Twain)
CC2013	Macbeth (William Shakespeare)
CC2014	Fahrenheit 451 (Ray Bradbury)
CC2015	The Crucible (Arthur Miller)
CC2016	Of Mice and Men (John Steinbeck)
CC2017	Divergent (Veronica Roth)

LANGUAGE ARTS - Books

CC1110	Word Families - Short Vowels Gr. K-1
CC1111	Word Families - Long Vowels Gr. K-1
CC1112	Word Families - Vowels Big Book Gr. K-1
CC1113	High Frequency Sight Words Gr. K-1
CC1114	High Frequency Picture Words Gr. K-1
CC1115	Sight & Picture Words Big Book Gr. K-1
CC1100	How to Write a Paragraph Gr. 5-8
CC1101	How to Write a Book Report Gr. 5-8
CC1102	How to Write an Essay Gr. 5-8
CC1103	Master Writing Big Book Gr. 5-8
CC1116	Reading Comprehension Gr. 5-8
CC1117	Literary Devices Gr. 5-8
CC1118	Critical Thinking Gr. 5-8
CC1119	Master Reading Big Book Gr. 5-8
CC1106	Reading Response Forms: Gr. 1-2
CC1107	Reading Response Forms: Gr. 3-4
CC1108	Reading Response Forms: Gr. 5-6
CC1109	Reading Response Forms Big Book: Gr. 1-6

MATHEMATICS - Software

ITEM #	TITLE
	PRINCIPLES & STANDARDS OF MATH SERIES
CC7315	Gr. PK-2 Five Strands of Math Big Box
CC7316	Gr. 3-5 Five Strands of Math Big Box
CC7317	Gr. 6-8 Five Strands of Math Big Box

MATHEMATICS - Books

	TASK SHEETS
CC3100	Gr. PK-2 Number & Operations Task Sheets
CC3101	Gr. PK-2 Algebra Task Sheets
CC3102	Gr. PK-2 Geometry Task Sheets
CC3103	Gr. PK-2 Measurement Task Sheets
CC3104	Gr. PK-2 Data Analysis & Probability Task Sheets
CC3105	Gr. PK-2 Five Strands of Math Big Book Task Sheets
CC3106	Gr. 3-5 Number & Operations Task Sheets
CC3107	Gr. 3-5 Algebra Task Sheets
CC3108	Gr. 3-5 Geometry Task Sheets
CC3109	Gr. 3-5 Measurement Task Sheets
CC3110	Gr. 3-5 Data Analysis & Probability Task Sheets
CC3111	Gr. 3-5 Five Strands of Math Big Book Task Sheets
CC3112	Gr. 6-8 Number & Operations Task Sheets
CC3113	Gr. 6-8 Algebra Task Sheets
CC3114	Gr. 6-8 Geometry Task Sheets
CC3115	Gr. 6-8 Measurement Task Sheets
CC3116	Gr. 6-8 Data Analysis & Probability Task Sheets
CC3117	Gr. 6-8 Five Strands of Math Big Book Task Sheets
	DRILL SHEETS
CC3200	Gr. PK-2 Number & Operations Drill Sheets
CC3201	Gr. PK-2 Algebra Drill Sheets
CC3202	Gr. PK-2 Geometry Drill Sheets
CC3203	Gr. PK-2 Measurement Drill Sheets
CC3204	Gr. PK-2 Data Analysis & Probability Drill Sheets
CC3205	Gr. PK-2 Five Strands of Math Big Book Drill Sheets
CC3206	Gr. 3-5 Number & Operations Drill Sheets
CC3207	Gr. 3-5 Algebra Drill Sheets
CC3208	Gr. 3-5 Geometry Drill Sheets
CC3209	Gr. 3-5 Measurement Drill Sheets
CC3210	Gr. 3-5 Data Analysis & Probability Drill Sheets
CC3211	Gr. 3-5 Five Strands of Math Big Book Drill Sheets
CC3212	Gr. 6-8 Number & Operations Drill Sheets
CC3213	Gr. 6-8 Algebra Drill Sheets
CC3214	Gr. 6-8 Geometry Drill Sheets
CC3215	Gr. 6-8 Measurement Drill Sheets
CC3216	Gr. 6-8 Data Analysis & Probability Drill Sheets
CC3217	Gr. 6-8 Five Strands of Math Big Book Drill Sheets
	TASK & DRILL SHEETS
CC3300	Gr. PK-2 Number & Operations Task & Drill Sheets
CC3301	Gr. PK-2 Algebra Task & Drill Sheets
CC3302	Gr. PK-2 Geometry Task & Drill Sheets
CC3303	Gr. PK-2 Measurement Task & Drill Sheets
CC3304	Gr. PK-2 Data Analysis & Probability Task & Drills
CC3306	Gr. 3-5 Number & Operations Task & Drill Sheets
CC3307	Gr. 3-5 Algebra Task & Drill Sheets
CC3308	Gr. 3-5 Geometry Task & Drill Sheets
CC3309	Gr. 3-5 Measurement Task & Drill Sheets
CC3310	Gr. 3-5 Data Analysis & Probability Task & Drills
CC3312	Gr. 6-8 Number & Operations Task & Drill Sheets
CC3313	Gr. 6-8 Algebra Task & Drill Sheets
CC3314	Gr. 6-8 Geometry Task & Drill Sheets
CC3315	Gr. 6-8 Measurement Task & Drill Sheets
CC3316	Gr. 6-8 Data Analysis & Probability Task & Drills