Ready, Set, Go Mission Possible



Currículum and Instruction Division of Mathematics, Science, and Advanced Academics

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Administrative Director Division of Mathematics, Science, and Advanced Academic Program Welcome to the Miami-Dade County Public School's Summer Fun packets. These fun activities are designed to help promote learning throughout the summer break. The activities are divided by grade levels and curriculum content – Social Studies, Science, Mathematics, and Reading/Language Arts. Educational web-links are also included with all packets. Please be sure to supervise your child while they are using the internet.

In addition to the fun packets, it is strongly recommended that you encourage your child to continue to read at least 30 minutes each day. Support for reading includes: Barnes & Nobles' *Summer Reading Journal* <u>http://bn.com/summerreading</u> and Miami-Dade Public Library's *Wild About Reading Summer Reading Adventure* <u>http://www.mdpls.org</u>. In addition, *Ticket to Read* is available through the Student Portal: <u>http://www.dadeschools.net/students/students.htm</u>

In an attempt to conserve paper and ink, if you wish to print these activities, they are combined using a little space as possible and no color except for the links on this page and this note. If you wish to avoid printing in color, please select "Print in grayscale" on your printer's properties/color tab located on the "Print" screen. See the figures below.

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TITLE: Dig Into Sand

DESCRIPTION:

Fill a container with sand. You can even go to the beach or the sandbox for these explorations. Take a close look at the sand. Place a few pinches of the sand on white sheet of paper. Are all the pieces of sand alike? What colors do you see? Are there pieces of different kinds of rocks? Can you see tiny bits of seashells? Describe the shapes and sizes of these tiny particles. Rub some sand between your fingers and tell how it feels. Take a closer look using a hand lens. Are the grains rounded or do they have sharp points? Fill a pan with sand. Pour in cup of water. Lift the pan of sand and water and tilt it back and forth. What happened? That's right. The water runs right through the sand. Does the sand feel different wet from dry? Encourage your child to guess how the tiny grains of sand on the beach are formed.

If you go to the beach or the sandbox, you can build a sandcastle. Which is better dry or wet sand for your castle construction?

Grade Level	Big Idea	Your Mission
Kindergarten	The Practice of Science	Place a few pinches of sand on to a white sheet of paper. Take a close look at the sand. Work with a parent to record the color, size, shape and feel of the sand particles. Are all the pieces of sand alike? Name the senses that you used to observe the sand.
Grade 1	The Practice of Science Earth Structures	Place a pinch of sand onto a white sheet of paper. Take a close look at the sand. What senses will you use? Work with a parent to record the color, size, shape, texture and number of the grains of sand on your paper. Add a few more pinches of sand. Take a <i>closer look</i> using a hand lens. If you do not have one, you can pour a little water into a lunch size baggy, seal it and observe the sand looking through the water. How did looking at the sand change? The particles look bigger. Are the grains rounded or do they have sharp points? How do you know? The sand feels rough because of the grains of the sand's sharp edges. Mix some water and sand in a container. Does the sand feel different wet from, when it was dry?

TITLE: Animal Safari

DESCRIPTION:

Look through magazines, newspapers, and/or use internet sources to find pictures of different types of animals. Paste or glue each picture of the animals that you find on an index card or a piece of paper. After you paste the picture, write the name of the animal under the picture. If you are not sure what type of animal it is and/or you need help with spelling ask an adult to help you.

Grade Level	Big Idea	Your Mission
Kindergarten	The Practice of Science Organization and Development of Living Organisms	Observe all the animal pictures you have. Share with a parent how they are alike and how they are different in the way they look and the things they do. Then you can sort the animals according to ways they are alike. Then play <i>Guess My Animal</i> game with a partner. Place several animal cards on the tabletop. Player A tries to guess which animal Player B is thinking of by asking descriptive questions such as: Does it have fur? Does it swim? The partner guessing can remove the animal cards with characteristics mentioned in the questions that were answered, No.
Grade 1	Interdependence	Draw a picture of where you live. Include pictures of the things you need to live. Share your picture with a parent and discuss what your basic needs: air, water, food, space, and shelter (a home). Now look at your animal pictures. What are their basic needs? Do you share some of the same basic needs? Yes. One is a need for a home. A home for an animal is a bigger place and it's outdoors. An animal's home is its habitat. Take a walk near your home or visit a park to look for animal homes. Discuss how the homes (habitats) are different and alike. Name three reasons why animals need homes. Draw a picture of your animal's habitat including things it needs to stay alive.

Grade Level	Big Idea	Your Mission
Grade 2	The Practice of Science	Observe all the animal pictures you
	Interdependence	have. Share with a partner how they
		are alike and how they are different.
		I nen play <u>Guess My Animai</u> game
		with a partner. Place several animal
		to quess which animal Player B is
		thinking of by asking descriptive
		questions such as: Does it have fur?
		Is it little? Does it climb trees?
		Discuss with a partner your basic
		needs: air, water, food, space, and
		shelter (a home). Now look at your
		animal pictures. What are their basic
		needs? Do you share some of the
		same basic needs? Yes. One is a
		need for a home. A home for an
		animal is not just a "house", but a
		bigger place and it's the outdoors. An
		animal's nome is its nabitat. Take a
		look for animal homes. Discuss how
		the homes (habitats) are different and
		alike. Now do the <i>Who I ives Where</i> ?
		activity. Turn the shoeboxes into
		dioramas – one for each habitat:
		pond, forest, and desert. Use a color
		code for your habitats: blue for pond
		(or another water habitat such as a
		lake or the ocean), green for the
		forest, and yellow for the desert.
		Place each animal in its habitat.
	\sim	Discuss how its needs are met with
		an adult.
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TITLE: Let's Catch Some Air

DESCRIPTION:

It is always so much fun going outside and feeling the summer breeze blow against your body. Do you know you can capture the air that surrounds you? This is how you do it. Find a plastic grocery bag then tie the handles together. Toss the bag up as high as you can and you should see it float down to the ground. You have just made a mini parachute that captures the air and makes it float. You can attach objects to your parachute to make it heavier and see how the parachute floats when things are added to it.

Grade Level	Big Idea	Your Mission
Kindergarten	Practice of Science Earth in Space and Time	Get a plastic grocery bag and tie its handles together. Go outside with an adult. Toss the bag up as high as you can and you should see it float down to the ground. You have just made a mini parachute that captures the air. With the help of an adult, look for some ordinary items that you use in your daily lives (paper plate, paper napkin, book, hat, pencil, etc). Toss these items up one at a time and observe the effect wind has on them. Do they float like the bag parachute or fall down quickly? How are the ones that seem to float alike? How are the objects that drop quickly alike? Which ones are lighter? Which ones are heavier? Which ones caught the wind? Explain Earth's gravity pulls all objects to the ground unless something holds them up. The mass of an object affects how strong (how much force) the air pushing back can exert on an object. A parachute falls slowly because the air it captures pushing back on it.
Grade 1	Practice of Science Earth in Space and Time	Explore the Kindergarten activities from above. Then try attaching objects such as a small plastic toy figure to your plastic bag parachute to make it heavier and see how the parachute floats when things are attached to it. What happens?

Grade Level	Big Idea	Your Mission
Grade 2	Practice of Science Forces and Changes in Motion	Explore the previous Kindergarten and Grade 1 activities. Here is another way to make a mini parachute. With the help of an adult, get the following materials: 4 pieces of string (or yarn) 45 cm (18"), 4 adhesive dots (or tape), 2 jumbo paper clips, 1 paper napkin. To build your parachute you will fasten the four pieces of string to the corners of the napkin using the adhesive dots. Tie the four strings together. Attach one paper clip as a passenger. Brainstorm and try different ways to release your parachute. Add a second paper clip. Predict what difference it will make on how the parachute falls. Try it out. Why did the parachute fall faster? Explain. The mass of an object affects how strong (how much force) the air can push back on an object.



TITLE: Apple Stars

DESCRIPTION:

Get an apple to observe. Then have an adult cut it in half across the width of the apple. When the apple halves are revealed, where the seeds are located, will look like a star. Then, using different colors of finger-paints; place the apple halves in the different colors so that the face of the apple turns the color of the paint. Then press the apple half on to a blank sheet of paper/construction paper or even newspaper to make a print picture. Share your print picture and observations about apples with your family.

Grade Level	Big Idea	Your Mission
Kindergarten	Practice of Science	Draw a picture of the outside of an apple. Describe what you see. Then Have an adult cut the apple in half across the width of the apple. Draw the inside of the apple. Describe what you see. Take one of the halves and describe how the apple smells, and feels. Count the number of seeds. Use the apple halves to make prints following the instructions above.
Grade 1	Practice of Science Organization and Development of Living Organisms	Draw a picture of the outside of an apple. Describe what you see. Does your apple have a stem? If yes, measure how long it is in centimeters. Then have an adult cut the apple in half across the width of the apple. Draw the inside of the apple. Describe what you see. Count the number of seeds. An apple is a fruit because it contains seeds. Take one of the halves and describe how the apple smells, and feels. Use the apple halves to make prints following the instructions above.
Grade 2	Practice of Science Changes in Matter	Try the activities above. Did you ever wonder why the inside of an apple changes and turns brown after it was cut it up into pieces? The reason is oxygen – the air we breathe. When you cut into the apple, oxygen reacts with the inside of the apple to darken the fruit. However, you can slow down the process. Try this. You will need a lemon and another apple.

Grade Level	Big Idea	Your Mission
		Have an adult cut a slice from the
		lemon and cut the apple in half.
		Place each apple half on a different
		plate. Squeeze the juice from a
		wedge of lemon on one-half of the
		apple. Do nothing to the other half of
		apple. Let the apple halves stand for
		an hour and see what happens.
		Describe how the halves are alike
		and different. Why does the apple
		half treated with lemon juice look
		lighter? The lemon juice is a weak
		acid, which slows down the browning
		process.



TITLE: Leaf Art

DESCRIPTION:

Have you ever really looked at leaves? Leaves are the parts of plants that help them live and grow by making food for the plant. Go outside with an adult and go on a leaf hunt. Take a bag or a shoebox and collect different types of leaves. Look for leaves that are different sizes, different shapes, and different colors or even different shades of green. Once you have the leaf or leaves, look at it very carefully. Look at the lines (veins) found on the leaf. What do you think travels through the veins? That is right - water and other nutrients. You can try to make a rubbing of the leaf by placing the leaf between two pieces of paper and gently moving a pencil or roll a crayon without a wrapper across the top sheet. You can make a collage (one picture with all the different leaves on it) or you can use the leaves create an animal picture. Share your leaf art with your family.

Grade Level	Big Idea	Your Mission
Kindergarten	Practice of Science Organization and Development of Living Organisms	Take out 3 to 5 leaves from your leaf hunt collection. Look at them closely and describe how they are alike and how they are different. Choose one leaf and make a drawing of it. Use your senses to describe and write down with the help of an adult its shape, color, kind of edges, and its size compared to your other leaves. Think about how you can use these leaves to make leaf art. Use your leaves to make a picture of an animal.
Grade 1	Practice of Science Organization and Development of Living Organisms	Pick two leaves and observe them carefully. Make a drawing by tracing the outline of each of the leaves. Describe and record the properties of each leaf: shape, edges, texture, and color. Measure the length, and width in centimeters of both. Compare the properties of both. How are they alike? How are they different? Share your observations with your family. Now you can use your leaves to make a leaf picture.
Grade 2	Practice of Science	Pick a leaf and observe it carefully. Make a drawing by tracing the outline of the leaf. Describe the properties of your leaf: shape, edges, texture, and color. Measure its length, and width

Grade Level	Big Idea	Your Mission
		in centimeters. Choose 5 more
		leaves to study. Number your leaves
		1 – 6 and make a table with the
		following headings:
		Leaf # Color Edges Shape Text
		Record the properties of the leaves in
		your sample. Then group the leaves
		by one property or attributes. Repeat
		with other attributes. What was the
		most common kind of attribute in your
		sample? Share with your family.
		Now you can use your leaves to
		make a leaf picture.



TITLE: Bubbles, Bubbles Everywhere!

DESCRIPTION:

Who doesn't enjoy blowing bubble? To make the bubbles you will need: 4 ½ cups of water, ½ cup hand dishwashing detergent, 1 drinking straw, and a shallow tray. Have a parent help you with the following: Mix the dishwashing liquid with the water in pitcher. Stir well. Fill the shallow tray. Now you are ready to blow your own bubbles. Here is how:

- 1. Blow through your straw as you move it slowly across the surface of the bubble solution. What do you see? How big are your bubbles?
- 2. If you got a lot of small bubbles instead of one big one, you are probably blowing too hard. Try again, blowing softly.
- 3. Try <u>http://www.sdahq.org/new1198/kids/bubbles/Welcome.html</u> for more helpful tips.

What are bubbles? What did you blow into the bubble solution? That's right. You blew in air. Bubbles are bits of air a gas trapped inside a bubble solution ball.

Grade Level	Big Idea	Your Mission
Kindergarten	Practice of Science	Blow bubbles with you straw. Look closely at the bubbles. How many colors do you see? What shape are the bubbles? Try making bubbles using other objects. You can try an empty frozen juice container that has both ends opened, a wand from store bottle, or even your hands. Compare the bubbles. How are they alike? How are they different?
Grade 1	Practice of Science	Try making bubbles using different objects as wands. See Kindergarten above. What shape are you bubbles? Are bubbles always round in shape? Can you make a square bubble? Make a prediction. Then try this. Cut off both ends of a quart-size milk carton. This will be your bubble wand. Dip one end of the carton into the bubble solution, and gently blow into the other end. What do you see? Yes, you saw a round bubble. Here's why: All bubbles are round, regardless of the shape of the bubble maker. Bubbles try to pull themselves into the shape that has the smallest surface area, which is a sphere.

Grade Level	Big Idea	Your Mission
Grade 2	Practice of Science	After exploring bubble making, using
		the activities from the grade levels
		above, try this investigation. How
		does temperature affect the life of a
		bubble? Do you think a cup full of
		refrigerator or in direct sublight?
		Make a prediction. Materials needed
		are bubble solution, two clear cups or
		jars, drinking straws, and plastic
		wrap. Directions:
		1. Make sure the insides of the jar
		and rim are wet. Place a little
		the jar.
		2. With a wet straw just above the
		bubble solution, blow bubbles
		until the jar is filled. Cover with
		plastic wrap and place in the
		long your bubbles last.
		3. Repeat step 2, but this time put
		the cup of bubbles in direct
		sunlight. Time how long those
		DUDDIES IAST.
		What did you discover about the
		life of a bubble? Was your
		prediction correct?
		cool temperatures. Heat makes
		them evaporate faster.
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TITLE: Colorful Celery Stems

DESCRIPTION:

Have an adult help you with this activity. Get some celery and have the adult take off a stalk of the celery for you. The stalk is the stem of the celery plants. What is the job of a plant stem? That is right. It supports the leaves and the flowers. You should see some leaves attached to the stalk. It also acts as a transport system for water, nutrients, and food traveling between the roots and leaves. Look closely at the different parts of the celery. On a blank sheet of paper, draw what you see. Then get a clear container, preferably a plastic cup. Fill the cup half way with water. Then get some food coloring. Choose one color to mix with the water, and then add four drops of food coloring to the container. After the food coloring is in the water, place the celery stalk in the container and observe to see what happens. Leave the celery in the water for several hours, but watch for changes every half-hour or so. Have an adult cut a thin slice across the stalk so that you can look inside of it to see what is happening? Observe with your eyes and then a hands lens. What do you see? Where did the food coloring get to the leaves?

Grade Level	Big Idea	Your Mission
Kindergarten	Practice of Science	Get some celery and have an adult take off a stalk of the celery for you. Observe it closely. What part of a plant are you looking at? Yes. It is the stem. All plant stems carry water and food between the roots and leaves. Let us use the celery stalk to take a closer look. Get an adult to help you follow the directions above. How can you tell that water moves through the celery plant's stem?
Grade 1	Practice of Science Organization and Development of Living Things	Read and follow the activity description above. Then use both hands to break the celery in half. Remove the long, colored string like tubes. Observe the tubes and stalk with a hand lens. They are part of the transport system of the plant. What evidence do you see that the tubes have transported water through the stem to the leaves?
Grade 2	Practice of Science	Read and follow the activity description above. Then use both hands to break the celery in half. Remove the long, colored string like tubes. Observe the tubes and stalk with a hand lens. They are part of the

Grade Level	Big Idea	Your Mission
		transport system of the plant. What
		evidence do you see that the tubes
		have transported water through the
		stem to the leaves? Explain how the
		stem of a plant can help it survive.



TITLE: My Pet Potato

DESCRIPTION:

Have an adult get you a potato. Although the potato grows underground, it is not the root of the plant; in fact, it is an underground stem. The plant of the potato has stems, roots, leaves and flowers. There are growths on the underground parts of the stems. These growths are called tubers and are what we call potatoes. Look carefully at a potato. Do you see tiny buds with a small scale-like leaf? These are called "eyes". If you cut an "eye" from a potato and plant it in soil, the bud will grow into a new plant.

Grade Level	Big Idea	Your Mission
Kindergarten	Practice of Science	Take a close look at a potato. Draw a picture of your potato. Work with a parent to make a record of the color, shape, number of eyes, and the feel of the potato. Name the senses that you used to observe the potato. Use a ruler to measure its length. Share your favorite way to eat potatoes with a parent.
Grade 1	Practice of Science	Take a close look at a potato. What senses will you use? What tool will you need to measure its length? Work with a parent to make a record of its color, shape, number of eyes, texture and length. Draw its picture. Share your favorite way to eat potatoes with a parent. Then interview each member of your family to find out everyone's favorite way to eat potatoes.
Grade 2	Practice of Science Heredity and Reproduction	Take a close look at a potato. Draw a picture of your potato. Identify and record its properties: color, shape, number of eyes, texture and length. Look carefully at the "eyes". With the help of a parent, you can cut a piece of potato with an eye. This bud will grow into a new plant. See <u>http://www.wikihow.com/Plant-Potatoes</u> for growing instructions. Give your potato a name. If you would like to, you can write a story about your potato to introduce it to your family.



TITLE: Under the Ocean

DESCRIPTION:

Identify one or two ocean animals for each description.

- 1) No eyes
- 2) Outer shell
- 3) No tentacles
- 4) Tentacles point upward
- 5) Eight arms
- 6) Tentacles dangle downward from "umbrella" shaped body
- 7) No arms

	Grade Level	Big Idea	Your Mission
	Grade 3	Diversity and Evolution of Living Organisms	Classification makes things easier to find, identify and study. After identifying the ocean animals, classify each one as either vertebrate (have a backbone) or invertebrate (do not have a backbone).
			 Look at the list of ocean animals and identify them as the following: Crustacean – has a hard external skeleton (i.e. crabs, lobsters and shrimp) Mollusk - soft bodied animals. Some live in hard shells (i.e. octopus, squid, mussels, oysters, clams) Echinoderms – live in seawater and have external skeletons (starfish, sea urchins, sea cucumbers)
		\geq	Draw a picture of each of the ocean animals. Below the picture, give some additional information about the animal.
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Grade Level	Big Idea	Your Mission
Grade 4	Interdependence	<u>Guess my Ocean Animal</u> ! Take out a sheet of paper and on one side describe, in as much detail as possible, the features of one of the ocean animals that you chose. Read the description of the ocean animal to a parent, relative, or friend. They are to try to guess the ocean animal being described.
		On the other side, write a story about one of your animals explaining that this animal cannot make its own food but has to find a food source. This food source has stored energy. Also, explain how the energy in the food is passed on to this animal.
Grade 5	The Practice of Science	Living in Miami, we have the advantage of living near several beaches. Beyond the beaches is where the animals of the ocean live. Humans have affected the ocean animals that live off our shores in several negative ways, such as pollution.
		Create a poster to educate other people who live in Miami about human impact on marine life



TITLE: Hurricane Watch

DESCRIPTION:

Summer means hanging out with friends, going to the beach and having new and exciting adventures. However, to meteorologists, the summer means an adventure of another kind. Late summer is the peak of the Atlantic hurricane season. A hurricane is a powerful storm that measures several hundred miles in diameter. Hurricanes have two main parts. The first is the eye of the hurricane, which is a calm area in the center of the storm. Usually, the eye of a hurricane measures about 20 miles in diameter, and has very few clouds. The second part is the wall of clouds that surrounds the calm eye. This is where the hurricane's strongest winds and heaviest rain occur.



Grade Level	Big Idea	Your Mission
Grade 3	The Practice of Science	Hurricane season starts June 1 st
		and ends on November 30 th of each
		year. Meteorologists are scientists
		who study weather and climate.
		These scientists assign names of all
		hurricanes and tropical storms that
		form in the Western Atlantic Ocean,
		the Caribbean Sea and the Gulf of
		Mexico. These names are listed in
		alphabetical order. If you had the
		opportunity to come up with your
		own names for the tropical storms
		and hurricanes for a season, what
		names would you give them. Take a
		sneet of paper and think of names
		from A to w. we usually do not
		nave more than 23 tropical storms
Grada 4	The Practice of Science	Scientists develop explanations
Glade 4		about events that may bappen in
		order to be prepared to solve
		notential problems. Write a story
		describing how a burricane could
		possibly affect the Florida
		Everalades
Grade 5	The Practice of Science	Scientists developed Hurricane
		categories, which depend on the
		storm's wind speeds and overall
		effects. On five blank pieces of
		paper, draw a picture of the same
		house, in 5 different ways showing
		the damage to a building that might
		result from a hurricane. The first
		picture will be of what a house looks
		like after a category 1 hurricane, the
		second picture will be of the same
		house after a category 2 hurricane
		and so on until the fifth house has
		been drawn showing what it would
		look like after a category 5
		hurricane. Understand that a
		category 2 hurricane has 10 times
		the destructive power of a category
		1 hurricane, a category 3 hurricane
		has 50 times the destructive power

Grade Level	Big Idea	Your Mission
		of a category 1 hurricane, a category 4 has 100 times the power, and a category 5 has 250 times the destructive power. Then, write a brief description explaining what is taking place in each picture.

TITLE: Hurricane Hunters

DESCRIPTION:

Hurricanes rotate in a counter-clockwise direction around an "eye." They have winds of at least 74 miles per hour. When they come onto land, the heavy rain, strong winds and heavy waves can damage buildings, trees and cars. The 53rd Weather Reconnaissance Squadron, known at the Hurricane Hunters, is part of the Air Force Reserve. They fly right into the eye of the hurricane, not above it, to get information on the hurricane. This information is used by the National Hurricane Center.

Grade Level	Big Idea	Your Mission
Grade 3	The Practice of Science	Write a paragraph explaining why you think that the information that the 53rd Weather Reconnaissance Squadron gather for us is important.
Grade 4	The Practice of Science	The 53rd Weather Reconnaissance Squadron is the only Department of Defense organization that still flies into tropical storms and hurricanes – since 1944. Draw a picture of a
HURIN	ERS	Hurricane Hunter plane (They use a Lockheed-Martin WC-130J aircraft) and describe why there is a need for us to have them why each person in the squadron needs to understand aviation and weather.
Grade 5	The Practice of Science	Hurricane hunters fly into the middle of storms to provide information that can save thousands of lives.
Statistics RECO	MNAISSHIE	Investigate and research what hurricane hunters do. Explain who has the planes and the pilots to do this kind of dangerous work, and what makes it so dangerous. Write a one-paragraph summary of your research and mail it to the following:
		Miami-Dade County Public Schools Attention: Science Department 1500 Biscayne Blvd., Suite 326-P Miami, Florida 33132

TITLE: Vamos a la Playa (Let's go to the Beach)

DESCRIPTION:

The beaches of Florida are among some of the world's best. Our beaches are one of the most important natural resources that we have in the state. These beautiful beaches are sources of places to have fun, for animals to live, and they help to protect us from storms.

Grade Level	Big Idea	Your Mission
Grade 3	Earth Structures	During the summer, many families like to go to the beach. During the day, when you are at the beach, the sun is out. The energy from the sun will heat objects on the beach. Make a list of objects found on the beach that would be heated by the sun.
Grade 4	Earth Structures	We all have a need for resources that are either renewable or nonrenewable. A nonrenewable resource is a natural resource that there is a limited supply. Some resources will never run out so they are important sources of energy for the future. These are renewable resources. Fold a blank sheet of paper horizontally (hot dog fold), fold it in half, and label one-half <u>Nonrenewable</u> and the other half <u>Renewable</u> . Write about things that you would see, hear, feel, or smell while at the beach that would fit either one of those two categories.
Grade 5	The Practice of Science	Oil spills can come from a number of sources; including leaking tankers and most recently an explosion of ail rig in the Gulf of Mexico. Engineers (Environmental and Chemical Engineers) work hard to find speedy solutions to oil spills as well as other threats to our natural water resources. Write a letter to an engineer explaining how you feel the recent oil spill could possibly affect our local beaches. Send this letter to the following address:

Grade Level	Big Idea	Your Mission
		Miami-Dade County Public Schools
		Attention: Science Department
		1500 Biscayne Blvd., Suite 326-P
		Miami, Florida 33132



TITLE: Water Conservation and the Water Cycle

DESCRIPTION:

The water that is available to us is the same water that has always been available and the only water that will be available. About three-quarters (75%) of the surface of the Earth is covered by water. However, we have a limited amount of usable fresh water. The water cycle is the journey that water takes in order for it to be continuously reused and recycled.



Grade Level	Big Idea	Your Mission
Grade 3	Changes in Matter	Water exists in three states – solid, liquid and gas. Take a sheet of paper, title it <u>States of Water</u> and divided into three columns. Label the first column <u>Liquid Water</u> , the second column <u>Solid Water</u> , and the last column <u>Water as a Gas</u> . Give examples of each state in each column.
Grade 4	Earth Structure	Beach erosion caused by water is a natural process. Sand is generally moved offshore by high-energy waves during the winter and is returned by gentle waves during the summer. Create a simulation of beach erosion in a tray. Add a small sandy beach on one side of the tray and water on the other. Move the tray slightly to create wave-like motions in the water. Record the observations and draw conclusions on the water erosion of beaches.
Grade 5	Processes that Shape the Earth	A news article discusses various topics of interest and informs its readers. Create a news article explaining why it is important to not waste or pollute water. Share the article with family and friends and ask them for their opinions about what was written.

TITLE: The Science of Earthquakes

DESCRIPTION:

We have recently witnessed images of the results of earthquakes around the world that have reduced entire towns to rubble by the violent shaking of the Earth's plates. Although we cannot predict when an earthquake may occur, scientists have learned much about them as well as the Earth itself from studying them. They have learned how to find the locations of earthquakes, to measure their size with accuracy, which helps us, understand how to build flexible structures that can withstand the shaking that is produced by earthquakes.

Grade Level	Big Idea	Your Mission
Grade 3	The Practice of Science	Scientists use something called a Richter scale to communicate how bad an earthquake really is. Earthquakes that are below 2.0 are not felt. Small earthquakes are below 4.0. The 5.0 earthquakes can cause damage, 6.0 is a very dangerous and 7.0 is a major earthquake. A 7.0 earthquake hit Haiti. Create a poster illustrating some of the hazards that occurred in Haiti after the January 12 th earthquake.
Grade 4	The Practice of Science	Scientists base their explanations on evidence. Go to the library or the internet to research earthquake zones. Create a map showing earthquake zones in our region, include information about where major earthquakes have struck in the last 100 years, and include the date and Richter scale.
Grade 5	Processes that shape the Earth	The Earth is continuously changing due to the change in the shift of the land. This shift in the land causes damage to buildings and property. Imagine that the

Grade Level	Big Idea	Your Mission
		"Three Little Pigs" live in an
		earthquake zone and one
		hits your town. Draw
		pictures showing "The
		Three Little Pigs" how to
		prepare their homes and
		themselves for an
		earthquake.

TITLE: The Animals of the Everglades

DESCRIPTION:

The Everglades of Florida is a natural wetland and the only one of its kind in the world. It is over 4,500 miles of slow moving water. The vast wetland was formed thousands of years ago. It is home to animals, birds, and fish, many of which are now endangered.

Grade Level	Big Idea	Your Mission
Grade 3	Interdependence	In South Florida, we have two seasons: The Wet and Dry Seasons. In the wet season, there is plenty for animals to eat and drink. In the dry season, the water levels in the marshes and swamps are very low. How do you think the animals of the Everglades respond to the changing seasons? Write the description and share these thoughts with family and friends.
Grade 4	Heredity and Reproduction	The life cycle of the Florida apple snail is one of the most important parts of the Everglades food web. This snail is one of the largest fresh water snails in North America and is a major part of the diet of turtles, fish, alligators and wading birds. The Florida apple snail usually lays its eggs during the dry season. If the dry season is too dry for too long this effects the snail population. They must still have enough water and food to grow large enough to survive during the dry season. Scientists are studying to find out the relationship of the between the effect of a dry season that is too dry and too long on the other animals that depend on the Florida apple snail for food. Describe what you think will happen to the animals that depend on the Florida apple snail for food if the dry season is too dry for too long.

Grade Level	Big Idea	Your Mission
Grade 5	How Living Things Interact with Their Environment	Energy flows through the Everglades ecosystem. One animal eats another animal or plant. If an important animal is removed from the Everglades and no other animal takes it place, it can affect all the other animals in the food web. On one side of the paper draw and label an Everglades food web. Be sure to include the producers, consumers, and decomposers. On the back, describe what you think would happen in the food web if an important animal, like the American Alligator, was to be removed.



Curriculum and Instruction - Science

TITLE: When Lightning Roars, Go Indoors!

DESCRIPTION:

Lightning is the second most frequent cause of weather-related deaths in the United States. Floods are number one. Most lightening injuries occur in the summer. At the first clap of thunder, go inside.

Grade Level	Big Idea	Your Mission
Grade 3	The Practice of Science	Only scientists with sophisticated equipment can study lightning. Create a poem describing the sounds that are associated with a Thunderstorm – rain, thunder, lightning and dark clouds.
Grade 4	The Practice of Science	Florida has some of the strongest lightning activity in the country. Lightning is electricity that is caused when clouds and ground attract and repel during a storm. Static electricity attracts and repels. Pretend you are a scientist and are about to investigate static electricity. You will need a balloon and several pieces of puffed cereal. Blow up and tie the balloon. Rub the balloon against your clothes. Place the balloon against your hair. Draw a picture of what happened. Now scatter the cereal on the table and place the balloon against the cereal. Draw a picture of what happens. Wait a few minutes. What can you infer from the observations what happens to the pieces of cereal? (adapted from the American Red Cross) Scientists raise questions about the natural world all the time. Come up with questions about lightning and use appropriate research and reference materials to find the answers.
Grade 5	The Nature of Science	Create a lightning facts brochure for your family. Draw as many pictures as you can about the hazards of lightning and present it to your family. Some other topics you could

Grade Level	Big Idea	Your Mission
		include in your brochure are any of
		the following:
		a. Cloud formation
		 b. Lightning production
		c. Temperature of a lightning
		bolt
		d. Thunder
		e. Lightning safety



Federal and State Laws

The School Board of Miami-Dade County, Florida adheres to a policy of nondiscrimination in employment and educational programs/activities and strives affirmatively to provide equal opportunity for all as required by law:

Title VI of the Civil Rights Act of 1964 - prohibits discrimination on the basis of race, color, religion, or national origin.

Title VII of the Civil Rights Act of 1964, as amended - prohibits discrimination in employment on the basis of race, color, religion, gender, or national origin.

Title IX of the Educational Amendments of 1972 - prohibits discrimination on the basis of gender.

Age Discrimination in Employment Act of 1967 (ADEA), as amended - prohibits discrimination on the basis of age with respect to individuals who are at least 40.

The Equal Pay Act of 1963, as amended - prohibits gender discrimination in payment of wages to women and men performing substantially equal work in the same establishment.

Section 504 of the Rehabilitation Act of 1973 - prohibits discrimination against the disabled.

Americans with Disabilities Act of 1990 (ADA) - prohibits discrimination against individuals with disabilities in employment, public service, public accommodations and telecommunications.

The Family and Medical Leave Act of 1993 (FMLA) - requires covered employers to provide up to 12 weeks of unpaid, job-protected leave to "eligible" employees for certain family and medical reasons.

The Pregnancy Discrimination Act of 1978 - prohibits discrimination in employment on the basis of pregnancy, childbirth, or related medical conditions.

Florida Educational Equity Act (FEEA) - prohibits discrimination on the basis of race, gender, national origin, marital status, or handicap against a student or employee.

Florida Civil Rights Act of 1992 - secures for all individuals within the state freedom from discrimination because of race, color, religion, sex, national origin, age, handicap, or marital status.

Veterans are provided re-employment rights in accordance with P.L. 93-508 (Federal Law) and Section 295.07 (Florida Statutes), which stipulates categorical preferences for employment.

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