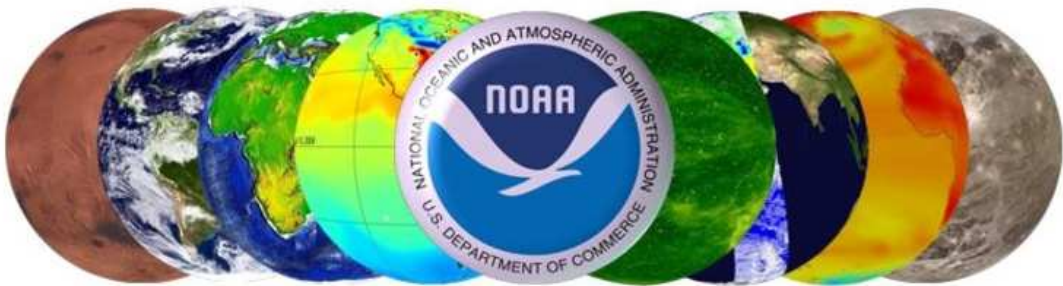


Science on a Sphere



South Florida Science Museum's Field Trip Guide



Fellow Educators,

Thank you for your interest in the South Florida Science Museum (SFSM). We look forward to meeting with you and your class while you explore our exciting new permanent exhibition *Science on a Sphere*.

This Field Trip Guide is designed to enhance your Museum experience by helping you and your students to best prepare for your visit. This guide will answer questions such as: how long you can expect to spend at the museum and where you can eat your lunch. As you know, by preparing students in advance for their trip, they will better focus on the science content.

Additionally, our Education Team has created pre- and post-visit activities perfect for use in the classroom to introduce the content they will experience at the Museum, and then follow-up their experience in hopes of extending the experience and enhancing retention. These activities are also contained in this guide. Have additional questions? Please call our Group Sales office at (561) 832-2026. It is our sincere hope that your experience embodies our mission of “exciting curiosity and furthering the understanding and appreciation of science and technology.” We’ll see you at the Museum!

Sincerely,

The Education Team
South Florida Science Museum

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Field Trip Planner

If you would like to schedule a trip to the South Florida Science Museum, please call our Group Sales Office at 561-832-2026. Field trips may be scheduled at any time during the year. Also, when you call be sure to ask how you can order Subway boxed lunches for your group, including a sub, juice, and chips or cookie for only \$5.00. *Science on a Sphere* will be one of our new permanent exhibits as of February 2nd, 2013!

Pricing

Pricing for groups scheduled in advance

Boxed lunch from Subway per student.....	\$5.00
Self-guided visit admission per student.....	\$6.00
Visit plus an additional educational program per student.....	\$7.50
Visit plus a laboratory program per student.....	\$9.00-\$12.00

*One chaperone is required per 5 students at \$6.00 per chaperone

Policies

- A 20% non-refundable deposit is due within 14 days of confirming your reservation.
- Final payment and headcount are due 14 days prior to your scheduled visit.
- No refunds will be made for no-shows the day of visit.
- If final payment has not been received by the indicated day, reservations are subject to cancellation. **NO REFUNDS WILL BE GRANTED.** A \$25 fee will apply to any cancellations and rescheduling. Cancellations made seven (7) or more days prior to scheduled visits will be refunded less the 20% deposit. Rescheduling cannot be guaranteed due to limited availability.
- Reservations will be made when final payment is received. All reservations are nonrefundable and non-exchangeable (if applicable).
- On the day of your scheduled visit, check in for your group at the Front Desk under your group/contact name. Additional tickets may be purchased at the group rate, on the day of your scheduled visit, providing space is available.
- Increase in headcount should be called in as soon as possible to ensure availability.
- Acceptable forms of payment are check, money order, or credit card (Visa, American Express or Master Card).
- Please make checks or money orders payable to the *South Florida Science Museum* and mail to:
 - *South Florida Science Museum*
 - 4801 Dreher Trail North
 - West Palm Beach, FL 33405
 - Attention: Group Sales
- Surcharges may apply for special event days and holidays.
- Museum Memberships, coupons and other discounts are not applicable with school group rates.

- Teacher Members receive \$25 off the total cost of educational programs on their first visit.

Directions and Map

The South Florida Science Museum is located at:

4801 Dreher Trail North,
West Palm Beach, FL 33405.
Phone: (561) 832-1988

From the Florida Turnpike:

Take the Southern Boulevard exit 97 east, and continue just past I-95. Make a right into Dreher Park. Follow Dreher Trail to the South Florida Science Museum.

From I-95, heading south:

Take exit 68, Southern Boulevard and head east. Immediately over the I-95 bridge, make a right into Dreher Park. Follow Dreher Trail to the South Florida Science Museum.

From I-95, heading north:

Take exit 68, Forest Hill Boulevard east to Parker Avenue. Turn left on Parker Avenue (north) to Summit Boulevard. Turn right on Summit (west). At the first light (Dreher Trail North), turn right and continue around to the Museum.



Museum Manners

PLEASE REVIEW THESE GUIDELINES WITH YOUR STUDENTS BEFORE YOU ARRIVE AT THE MUSEUM.

- Please walk, do not run, while in the museum. This is for your safety, as well as the safety of other visitors.
- Please do not touch the glass on any exhibits, including the aquarium, as fingerprints and smudges can make it hard for everyone to see.
- Please enjoy yourselves and the hands-on exhibits, but leave them the way you found them.
- Please keep eating and drinking to the vending machine area and outdoors only.
- Please have students remain with their chaperone at all times.
- Violation of the rules could result in your group being asked to leave the museum.
- No refunds will be given.

Museum Store Rules

- Please do not allow more than 5 children per chaperone in the store at one time.
- All sales are final, so please choose carefully.

Most importantly, enjoy your visit!

What to Do at the Museum

Arrival

Welcome! Once you arrive at the museum, have students either remain on the bus or sit on the benches leading up to the front doors. Have your group leader check in at the front desk and get directions on where to go first. One of our SFSM staff members will welcome and orient your group as a whole.

Programs

Favorite programs such as planetarium shows, Nitromania, or Touch Tanks can be scheduled for a small fee to be added in with your field trip. Call (561) 832-2026 in advance to schedule. Continue below to find a list of programs that specifically relate to our *Science on a Sphere* Exhibit.

Lunch



Make lunch easy, fresh, and healthy for your students by ordering Subway boxed lunches in advance. This \$5 boxed lunch includes one turkey, ham, veggie, or Italian sub, juice box, and chips or cookies. If you order more than 15 boxed lunches, an adult's lunch is FREE. Call our Subway store at (561) 370-7741 to order your Subway boxed lunches.

You could also pack a lunch and store it on the bus until you are ready to eat. Picnic tables are available on the Science Trail or you can eat within Dreher Park, surrounding the Museum.

Exhibits

There are lots of exciting things to see at the SFSM.

Science on a Sphere

The South Florida Science Museum is pleased to announce this award-winning exhibit, developed by NOAA and generously funded by the Quantum Foundation, as part of our 2013 expansion project. *Science on a Sphere (SOS)* is a room-sized, globe that uses computers and video projectors to display animated images of atmospheric storms, climate change, and ocean temperature. Come observe hurricanes, earthquakes, and tsunamis happening around the globe this very minute!

Ancient Egypt: A Celebration of Life

View authentic artifacts from Ancient Egypt from the Early to Roman Period (ca. 625BC to 600AD). Ancient Egypt: A Celebration of Life features an authentic mummy from the Michael C. Carlos Museum at Emory University in Atlanta, GA. The mummy and artifacts show the unique ways Egyptians celebrated life through the funeral process.

States of Matter

Explore the basic principles of science with hands-on displays representing the states of matter, including solid, liquid, gas, and plasma displays. Continue through the gallery for more basic principles of electricity revealed through conversion machines and Jacob's Ladder.

Apollo 14 Moon Rock

Part of the Ambassadors of Space Exploration, the Museum was honored by Apollo 14 Astronaut Dr. Edgar Mitchell with a long-term loan of an authentic Moon rock collected during the Fra Mauro expedition. Mitchell was the Lunar Module Pilot on NASA's 3rd Moon expedition where Mitchell became the 6th man to walk on the Moon. Authentic mission footage accompanies this rare display.

McGinty Aquariums

See ocean life from around the world in over 5,000 gallons of salt-water sea life. A living coral reef, sharks, eels, mangrove sea life and a "touch tank" create this wonderful undersea room.

Marvin Dekelboun Planetarium

Sit back and be transported through the Universe with daily star shows, weekend laser concerts and interactive astronomy shows. It's only \$2.50 more per adult/child visitor to book as a group.

WS4FSM Ham Radio Center (days and hours of operation vary)

Welcome to WS4FSM, the museum's exciting new Ham Radio Station, where you can broadcast to others in Argentina, Amsterdam, St. Kitts, or one of two million amateur radio operators around the world! The West Palm Beach Amateur Radio Club will assist visitors in writing their name in Morse code and in making contacts with other "hams" worldwide.

Science Trail

Enjoy a walk around a winding trail of interactive exhibits. This outdoor trail features parabolic whisper dishes, a fossil dig with authentic Florida fossils, dinosaur tracks which tell a story and even an all original turtle-hop game! Along the way, enjoy the flora and fauna while gazing through our Nature's Kaleidoscopes. There's a surprise around every corner of our trail, with new exhibits opening throughout the year.

Related Books & Websites

Here is a list of books and websites to bring into your classroom to incorporate the topic of *Science on a Sphere* before or after your visit to the museum.

Books:

Ages 5+

The Best Book of Weather by Simon Adams

Clouds (Let's-Read-and-Find... Science 1) by Anne Rockwell and Frane Lessac

Eye Wonder: Weather by DK Publishing

Hurricanes! by Gail Gibbons

The Magic School Bus And The Climate Challenge by Joanna Cole

Oh Say Can You Say What's the Weather Today?: All About Weather (Cat in the Hat's Learning Library) by Tish Rabe and Aristides Ruiz

Weather by Seymour Simon

Weather Words and What They Mean by Gail Gibbons

What's Up? (Wonderwise) by Mick Manning, Brita G. Om, and Brita Granstrom

Ages 8+

Changing Climate (Earth Watch) by Sally Morgan

DK Eyewitness Books: Hurricane and Tornado by Jack Challoner

Fever in the Oceans (Climate Change) by Stephen Aitken

Fever at the Poles (Climate Change) by Stephen Aitken

Gases, Pressure, and Wind: The Science of the Atmosphere (Weatherwise) by Paul Fleisher

How the Weather Works: A Hands-on Guide to Our Changing Climate (Explore the Earth) by Christiane Dorion

Hurricanes by Seymour Simon

Oceans of the Future (The Library of Future Weather and Climate) by Paul Stein

Storms of the Past and the Future (Earth's Changing Weather and Climate) by Karen Donnelly

Weather and Climate: Geography Facts and Experiments (Young Discoverers Series) by Barbara Taylor

Weird But True Weather (*Weird But True Science*) by Carmen Bredeson

Ages 12+

The AMS Weather Book: The Ultimate Guide to America's Weather by Jack Williams, Rick Anthes and Stephanie Abrams

Doppler Radar, Satellites, and Computer Models: The Science of Weather Forecasting (Weatherwise) by Paul Fleisher

A Field Guide to the Atmosphere (Peterson Field Guide) by Jay Pasachoff and Vincent J. Schaefer

Hurricane Watch: Forecasting the Deadliest Storms on Earth by Jack Williams and Bob Sheets

Ocean currents: marine science activities for grades 5-8 by Catherine Halversen, Kevin Beals, and Craig Strang

Weather Whys: Facts, Myths, and Oddities by Paul Yeager

Relate Websites:

- *National Oceanic and Atmospheric Administration* <http://www.noaa.gov/>
Use this website as a resource to learn more about what NOAA does, for weather-related current events and weather warnings, and access real-time oceanographic data for sea level trends to oxygen levels.
- *Science on a Sphere* <http://www.sos.noaa.gov>
This is a great teacher resource to find out more about the Science on a Sphere, access lesson plans, find examples of the Data Sets we can offer on your visit.

Also Try These Apps!

- Earth Observer (\$0.99)
Created by the Earth Institute at Columbia University and can be used with the iPhone, iPod touch, and iPad. Users can interact with visual data ranging from floods to earthquakes to arctic melt.
- Moon
Moon updates a panel of information that tells you everything you want to know about the moon. It will also mark your calendar with the new moon and full moon.
- Go Sky Watch Planetarium for iPad
Easily and quickly identify and locate stars, planets, constellations and more by simply pointing to the sky. This app is your personal telescope to the wonders in the night sky.

Related Educational Programs

NOAA's Science on a Sphere offers an amazing opportunity to observe and analyze real-time data on a room-sized globe. Using computers and video projectors, this exhibit displays animated images of atmospheric storms, climate change, and ocean temperature. Come observe hurricanes, earthquakes, and tsunamis happening around the globe this very minute! Enhance your students' experience of *Science on a Sphere* by also booking one of our educational programs that relate to this fascinating exhibit.

Kaluoka 'hina (grades K-5)

The *Science on a Sphere* illustrates important events happening in our ocean from sea level rise and sea currents to ocean acidification and reefs at risk. A great introduction to these topics can be viewed in this animated full-dome planetarium show. This film transports students to a tropical reef full of adventure, danger, and old legends.

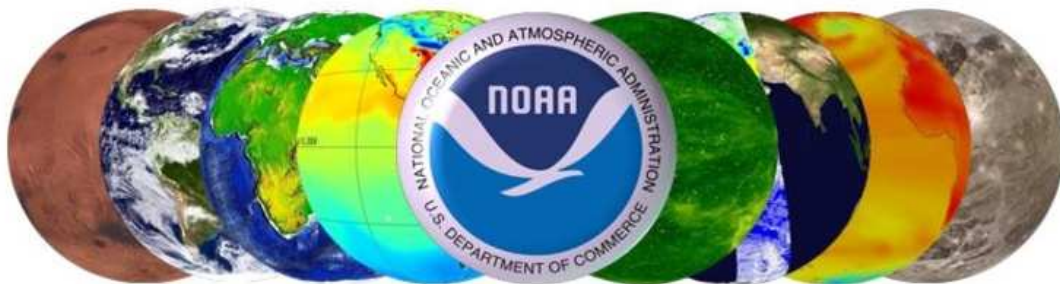
To Other Worlds (grades 2-8)

After using the *Science on a Sphere* to view Jupiter's red storm or comparing the different planets' moons, head over to our planetarium and join us on a fantastic adventure through space conducted by our science educator. Learn the cool characteristics about planets and other objects in the solar system. Students will also observe how stars will look that particular night with our 360° traditional planetarium experience.

Cosmic Collisions (grades 3-12)

Use the *Science on a Sphere* to view real-time images of our sun and moon. Then come to the planetarium and learn how these miraculous objects were formed through cosmic collisions. Narrated by Robert Redford, the show illustrates how cosmic collisions have created many things we take for granted – the glowing Moon, the sun's warmth and light, our changing seasons and waves, and even giving birth to new stars and new worlds.

For more information on these programs, check out our Educator Guide or call our Group Sales office at (561)832-2026.



Related Sunshine State Standards

Not only will your students have an amazing time exploring our new exhibit, but they will be learning as well! Here are many of the Sunshine State Standards that relate to the exhibit.

Kindergarten:

SC.K.E.5.3 Recognize that the Sun can only be seen in the daytime

SC.K.E.5.4 Observe that sometimes the Moon can be seen at night and sometimes during the day.

1st Grade:

SC.1.E.5.1 Observe and discuss that there are more stars in the sky than anyone can easily count and that they are not scattered evenly in the sky.

SC.1.E.6.1 Recognize that water, rocks, soil, and living organisms are found on Earth's surface.

SC.1.E.6.3 Students are expected to recognize that some events on Earth happen fast, while others occur slowly.

2nd Grade:

SC.2.E.6.2 Describe how small pieces of rock and dead plant and animal parts can be the basis of soil and explain the process by which soil is formed.

SC.2.E.7.1 Compare and describe changing patterns in nature that repeat themselves, such as weather conditions including temperature and precipitation, day to day and season to season

3rd Grade:

SC.3.E.5.1 Explain that stars can be different; some are smaller, some are larger, and some appear brighter than others; all except the Sun are so far away that they look like points of light.

SC.3.E.5.2 Identify the Sun as a star that emits energy; some of it in the form of light.

SC.3.N.1.6 Infer based on observation.

SS.3.G.1.2: Review basic map elements (coordinate grid, cardinal and intermediate directions, title, compass rose, scale, key/legend with symbols)

SS.3.G.1.1: Use thematic maps, tables, charts, graphs, and photos to analyze geographic information.

4th Grade:

SC.4.E.5.1 Observe that the patterns of stars in the sky stay the same although they appear to shift across the sky nightly and different stars can be seen in different seasons.

SC.4.E.5.2 Describe the changes in the observable shape of the moon over the course of about a month.

SC.4.L.17.4 Recognize ways plants and animals, including humans, can impact the environment.

SS.4.G.1.4: Interpret political and physical maps using map elements (title, compass rose, cardinal directions, intermediate directions, symbols, legend, scale, longitude, latitude).

5th Grade:

SC.5.E.5.1 Recognize that a galaxy consists of gas, dust, and many stars, including any objects orbiting the stars. Identify our home galaxy as the Milky Way.

SC.E.5.2 Describe the changes in the observable shape of the moon over the course of about a month.

SC.E.5.3 Distinguish among the following objects of the Solar System Sun, planets, moons, asteroids, comets and identify Earth's position in it.

SC.5.E.7.2 Recognize that the ocean is an integral part of the water cycle and is connected to all of Earth's water reservoirs via evaporation and precipitation processes.

SC.5.E.7.3 Recognize how air temperature, barometric pressure, humidity, wind speed and direction, and precipitation determine the weather in a particular place and time.

SC.5.E.7.4 Distinguish among the various forms of precipitation (rain, snow, sleet, and hail), making connections to the weather in a particular place and time.

SC.5.E.7.5 Recognize that some of the weather-related differences, such as temperature and humidity, are found among different environments, such as swamps, deserts, and mountains.

SC.5.E.7.6 Describe characteristics (temperature and precipitation) of different climate zones as they relate to latitude, elevation, and proximity to bodies of water.

SS.5.G.1.2: Use latitude and longitude to locate places.

6th Grade:

SC.6.E.7.2 Investigate and apply how the cycling of water between the atmosphere and hydrosphere has an effect on weather patterns and climate.

SC.6.E.7.3 Describe how global patterns such as the jet stream and ocean currents influence local weather in measurable terms such as temperature, air pressure, wind direction and speed, and humidity and precipitation.

SC.6.E.7.4 Differentiate and show interactions among the geosphere, hydrosphere, cryosphere, atmosphere, and biosphere.

SC.6.E.7.6 Differentiate between weather and climate.

SC.6.E.7.9 Describe how the composition and structure of the atmosphere protects life and insulates the planet.

SS.6.G.1.1: Use latitude and longitude coordinates to understand the relationship between people and places on the Earth.

7th Grade:

SC.7.E.6.2 Identify the patterns within the rock cycle and relate them to surface events (weathering and erosion) and sub-surface events (plate tectonics and mountain building).

SC.7.E.6.5 Explore the scientific theory of plate tectonics by describing how the movement of Earth's crustal plates causes both slow and rapid changes in Earth's surface, including volcanic eruptions, earthquakes, and mountain building.

SC.7.E.6.7 Recognize that heat flow and movement of material within Earth causes earthquakes and volcanic eruptions, and creates mountains and ocean basins.

SC.7.N.1.5: Describe the methods used in the pursuit of a scientific explanation as seen in different fields of science such as biology, geology, and physics.

SC.7.N.3.2 Identify the benefits and limitations of the use of scientific models.

SC.7.P.10.1 Illustrate that the sun's energy arrives as radiation with a wide range of wavelengths, including infrared, visible, and ultraviolet, and that white light is made up of a spectrum of many different colors.

8th Grade:

SC.8.E.5.1 Recognize that there are enormous distances between objects in space and apply our knowledge of light and space travel to understand this distance.

SC.8.E.5.2 Recognize that the universe contains many billions of galaxies and that each galaxy contains many billions of stars.

SC.8.E.5.3 Distinguish the hierarchical relationships between planets and other astronomical bodies relative to solar system, galaxy, and universe, including distance, size, and composition.

SC.8.E.5.7 Compare and contrast the properties of objects in the Solar System including the Sun, planets, and moons to those of Earth, such as gravitational force, distance from the Sun, speed, movement, temperature, and atmospheric conditions.

SC.8.E.5.9 Explain the impacts of objects in space on each other including:

1. the Sun on the Earth including seasons and gravitational attraction
2. the Moon on the Earth including phases, tides, and eclipses and the relative position of each body

SC.8.E.5.10 Assess how technology is essential to science for such purposes as access to outer space and other remote locations, sample collection, measurement, data collection and storage, computation, and communication of information.

Grades 9-12:

SC.912.E.5.4 Explain the physical properties of the Sun and its dynamic nature and connect them to conditions and events on Earth.

SC.912.E.5.5 Explain the formation of planetary systems based on our knowledge of our Solar System and apply this knowledge to newly discovered planetary systems.

SC.912.E.6.1 Describe and differentiate the layers of Earth and the interactions among them.

SC.912.E.6.2 Connect surface features to surface processes that are responsible for their formation.

SC.912.E.6.3 Analyze the scientific theory of plate tectonics and identify related major processes and features as a result of moving plates.

SC.912.E.7.3 Differentiate and describe the various interactions among Earth systems, including: atmosphere, hydrosphere, cryosphere, geosphere, and biosphere.

SC.912.E.7.4 Summarize the conditions that contribute to the climate of a geographic area, including the relationships to lakes and oceans.

SC.912.E.7.5 Predict future weather conditions based on present observations and conceptual models and recognize limitations and uncertainties of such predictions.

SC.912.E.7.6 Relate the formation of severe weather to the various physical factors.

SC.912.E.7.7 Identify, analyze, and relate the internal (Earth system) and external (astronomical) conditions that contribute to global climate change.

SC.912.E.7.9 Cite evidence that the ocean has had a significant influence on climate change by absorbing, storing, and moving heat, carbon, and water.

SC.912.L.17.3 Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms.

SC.912.L.17.4 Describe changes in ecosystems resulting from seasonal variations, climate change and succession.

SC.912.L.17.8 Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

SS.912.G.3.1: Use geographic terms to locate and describe major ecosystems of Earth.

Pre Activity: Moon Phases

Purpose: Students will learn why the moon appears to go through different phases.

Suggested Grade Level: 3-6

Material List:

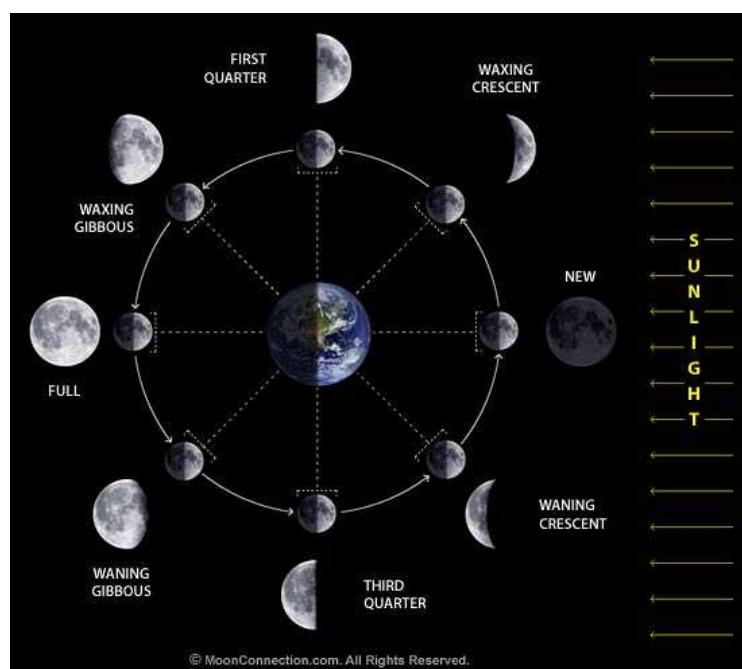
- Lamp or other light source
- Large round object like a beach ball or basketball
- Smaller round object like a softball or Styrofoam craft ball

Introduction-

The most visible change in the appearance of the Moon is its monthly cycle of phases. Every 29.5 days, the Moon changes from a thin crescent low in the western sky in early evening, to a full disk that rises at sunset and is up all night, back to a thin crescent rising just before sunrise. The Moon's phases are caused by its orbit around the Earth. As the Moon circles us, different parts of it face the sun. When the side of the Moon facing the Earth is sunlit, we see a full Moon. When the sun is up on the far side of the Moon, we see a thin crescent or nothing at all.

Activity –

Set up the lamp on a desk or table. This will represent the sun. A few feet away, place the large round object at the same height as the lamp. This will be the earth. The smaller round object represents the moon. Move the moon slowly around the earth to simulate its orbit and observe the way the sunlight reflects off the moon. Have the students take turns doing this and let them stand in between the earth and the moon so they can see what the phases look like when viewed from the earth's perspective.





Pre Activity: Water Cycle

Purpose: Students will learn about the water cycle

Suggested Grade Level: 3-6

Material List:

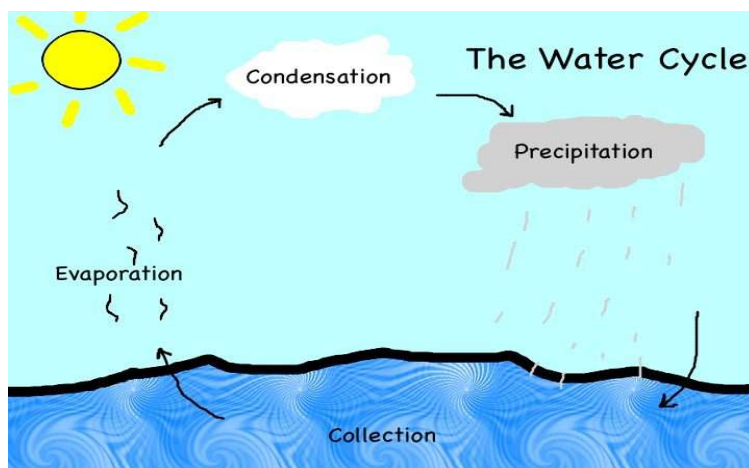
- Large glass bottle or jar
- Plastic wrap
- Rubber band

Introduction - Discuss and draw a simple illustration on a board or chart to demonstrate to students the steps of the water cycle: (1.) Energy from the sun changes water to water vapor. (2.) Water vapor rises. It cools and condenses to form clouds. (3.) Winds blow the clouds over land. (4.) Clouds meet cool air, and rain or snow falls to the ground. (5.) Most of the water returns to large lakes and oceans. Next, invite students to demonstrate the water cycle:

Activity -

1. Fill a large, glass bottle or jar half full of water.
2. Cover the jar with plastic wrap and secure the plastic wrap in place with a rubber band.
3. Place the jar in a sunny window.
4. Observe for a few hours. What happens? Why did it happen? (*Water drops form on the underside of the plastic wrap. Energy from the sun turned the water into water vapor (evaporation) which caused water drops to form (condensation) on the plastic wrap.*)

Invite students to compare what happened in the jar to the way the water cycle works? Talk about ways they might speed up the process of evaporation and condensation? How would that compare to a hurricane?





Post Activity: Ocean Commotion

Purpose: Students will learn about the circulation of ocean waters.

Suggested Grade Level: 3-6

Material List:

- Large see-through container like a fish tank or large plastic storage container
- Salt
- Water
- Food coloring
- Ice

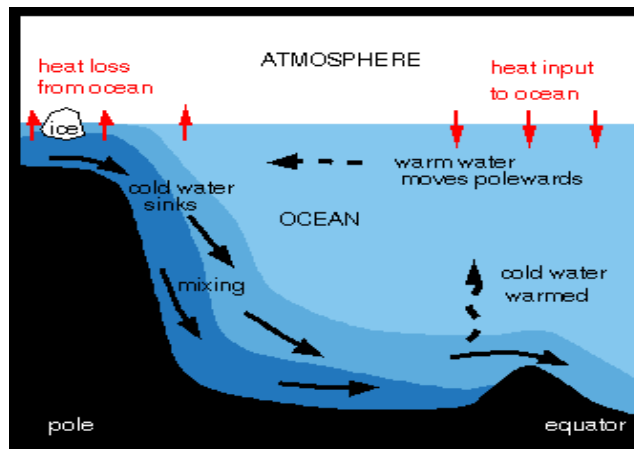
Introduction -

The ocean is not a still body of water. There is constant motion in the ocean in the form of a global ocean conveyor belt due to thermohaline currents. These currents are density driven, which are affected by both temperature and salinity. Cold, salty water is dense and sinks to the bottom of the ocean while warm water is less dense and rises to the surface. The "start" of the ocean conveyor belt is in the Norwegian Sea. Warm water is transported to the Norwegian Sea by the Gulf Stream. The warm water provides heat for the atmosphere in the northern latitudes that gets particularly cold during the winter. This loss of heat to the atmosphere makes the water cooler and denser, causing it to sink to the bottom of the ocean. As more warm water is transported north, the cooler water sinks and moves south to make room for the incoming warm water. This cold bottom water flows south of the equator all the way down to Antarctica. Eventually, the cold bottom waters are able to warm and rise to the surface, continuing the conveyor belt that encircles the globe.. It takes water almost 1000 years to move through the whole conveyor belt.

Activity –

Fill the large container halfway with lukewarm water. In a separate container, dissolve some salt in water. Mix in a few drops of food coloring and chill with some ice. Slowly pour the cold salty mixture into the larger container of lukewarm water. The cold salty water will sink and slowly spread across the bottom of the larger container forming a second layer.

For further exploration, you can repeat the demonstration and change the variables each time - use cold water with no salt, use room temperature water mixed with salt, etc. Be sure to use the food coloring in each instance so you can track the circulation of the different layers.



Ocean Circulation Conveyor Belt



The ocean plays a major role in the distribution of the planet's heat through deep sea circulation. This simplified illustration shows this "conveyor belt" circulation which is driven by differences in heat and salinity. Records of past climate suggest that there is some chance that this circulation could be altered by the changes projected in many climate models, with impacts to climate throughout lands bordering the North Atlantic.



Post Activity: Hurricane Hunters



Purpose: Students will take a detailed look into hurricanes and learn how to track them.

Suggested Grade Level: K - 5

Material List: Hurricane Tracking Maps

Introduction:

Hurricanes are severe tropical storms that form in the southern Atlantic Ocean, Caribbean Sea, Gulf of Mexico and in the eastern Pacific Ocean. Hurricanes gather heat and energy through contact with warm ocean waters.

Evaporation from the seawater increases their power. Hurricanes rotate in a counter-clockwise direction around an "eye." Hurricanes have winds at least 74 miles per hour. When hurricanes come onto land, their heavy rain, strong winds and large waves can damage buildings, trees and cars. The heavy waves are called a storm surge. Storm surges are very dangerous and it is important to take shelter during a hurricane and listen to the television or radio for instructions.

What's the difference between a hurricane, a cyclone, and a typhoon? *(They are all the same kind of storm but hurricanes develop in the Atlantic Ocean, cyclones develop in the Indian Ocean, and typhoons develop in the China Sea.)*

Hurricane Season is June 1st – November 30th.

Activity:

1. Give every child a hurricane tracker map.
2. Track the storm.
3. Label the cities and towns that are along the hurricane's path and the date and time when the hurricane hit those locations.





Name _____ Date _____

Museum Scavenger Hunt – Elementary School

Directions: Answer the following questions by exploring the Museum and reading signs and exhibit information.

1. Breeding season of the American Alligator lasts from _____ to _____ . The female will lay _____ - _____ eggs. They will hatch in _____ weeks.
2. Gar Fish are the _____ living bony fish around today. They emerged from an ancestor in the Cretaceous period over _____ million years ago.
3. Invasive Species are those not from the local environment. Often competing with native plants and animals can change and destroy the balance of the natural _____ .
4. The largest shell in the Museum _____ .
5. The four states of matter are _____ , _____ , _____ , and _____ .
6. The bicycle changes mechanical energy to _____ energy.
7. Microscopes – What are the Latin words on the one dollar coin?

8. What materials is the Museum’s meteorite made from? _____
9. On which mission was the Moon Rock collected? _____ What year was this? _____

10. Suzie the Mastodon was discovered by_____.

Museum Scavenger Hunt – Elementary School

Answer Key

1. Breeding season of the American Alligator lasts from April to May.
The female will lay 25-60 eggs. They will hatch in 9 weeks.
2. Gar Fish are the oldest living bony fish around today. They emerged from an ancestor in the Cretaceous period over 144 million years ago.
3. Invasive Species are those not from the local environment. Often competing with native plants and animals can change and destroy the balance of the natural ecosystem.
4. The largest shell in the Museum is Giant Clam (Tridacna Gigas).
5. The four states of matter are solid, liquid, gas, and plasma.
6. The bicycle changes mechanical energy to electrical energy.
7. Microscopes – What are the Latin words on the one dollar coin?
E Pluribus Unum
8. What materials is the Museum's meteorite made from? Nickel-iron.
9. On which mission was the Moon Rock collected? Apollo 14 What year was this? 1971
10. Suzie the Mastodon was discovered by a thirteen year old boy named Charlie Wilkins



Name _____ Date _____

Museum Scavenger Hunt – Middle School

Directions: Answer the following questions by exploring the Museum and reading signs and exhibit information.

1. _____ gators face many challenges once they leave the protection of their mother. They are eaten by a variety of predators including _____, _____, _____, _____, and other _____. Out of an average 36 baby alligators born, only _____ will see their first birthday and only _____ will reach sexual maturity.
2. _____ are the oldest living bony fish around today. They emerged from a primal ancestor in the _____ period over _____ years ago.
3. _____ are those not natural to the native environment. They often _____ the native plants and animals thus changing and destroying the balance of the natural _____.
4. The largest shell in the Museum is _____.
5. The bicycle changes mechanical energy to _____ energy.
6. Microscopes – What are the Latin words on the one dollar coin? _____
7. What chemicals is the Museum's meteorite made from? _____
When and where did it fall to Earth? _____ in _____
8. On which mission was the Moon Rock collected? _____ What year was this? _____
9. Huge Mastodons like Suzie are collectively referred to as _____
10. The god _____ would judge the weight of the _____ against the weight of a feather, which represented “_____” and/or “_____.”



Name _____ Date _____

Museum Scavenger Hunt – Middle School

Answer Key

1. Juvenile gators face many challenges once they leave the protection of their mother. They are eaten by a variety of predators including raccoons , otters , birds , fish , and other alligators . Out of an average 36 baby alligators born, only 6 will see their first birthday and only 4 will reach sexual maturity.
2. Gar Fish is the oldest living bony fish around today. They emerged from a primal ancestor in the Cretaceous period over 144 million years ago.
3. Invasive Species are those not natural to the native environment. They often compete with the native plants and animals thus changing and destroying the balance of the natural ecosystem .
4. The largest shell in the Museum is Giant clam (Tridacna Gigas) .
5. The bicycle changes mechanical energy to electrical energy .
6. Microscopes – What are the Latin words on the one dollar coin?
E Pluribus Unum
7. What chemicals is the Museum’s meteorite made from? Nickel-iron
When and where did it fall to Earth? 22, 0000 in Winslow, AZ
8. On which mission was the Moon Rock collected? Apollo 14 . What year was this? 1971
9. Huge Mastodons like Suzie are collectively referred to as mega fauna or very large animals
10. The god Osiris would judge the weight of the heart against the weight of a feather, which represented “ truth ” and/or “ order .”