



## First Earth Space

1. Question and Observation – Learn about the Scientific Method, how it is a tool like the alphabet, with practice you can approach science in very creative ways

Discuss the Scientific Method and all of the steps. Give examples of how we make observations and ask questions all day long. Scientist write it down and take it further. The students will write in their science notebooks as they make observations and ask questions about things in the room and outside.

2. Rock properties – Practice your observation skills by examining rock with a magnifying glass. Classify the rocks based on their properties

Using many different types of rocks students will identify the rocks properties, classify the rock, and conduct a hardness test to classify each rock.

3. The Earth – Observe different Earth models to identify the location of different land forms

Using a globe, a map, and a clay model will identify different land masses and land forms and where they are located

4. Explain the Equinox – Using of the Earth and Sun Model develop and share a demonstration that explains the equinox

Explain the equinox and how twice a year the day and night are both almost 12 hours each. The students will use models and drawing to develop their hypothesis as to the reason that happens. As a class review what we have discovered and see who had ideas that matched.

5. The reason for the season – Make a model of the Earth and Sun that clearly defines the reason for the changing of the season

Demonstrate using a globe and a model of the sun how the earth orbits the sun. Students will be asked to make a hypothesis as to why the season change. They will then discuss the two most common answers and debate which one appears to be the most accurate. Explain what the tilt is the reason for the changing of the season.

6. View from Earth – Observe pictures taken of objects in outer space taken throughout the years. Identify patterns and try to predict when these phenomenon will happen again



Students will look at Halley's comet, annual meteor showers, and moon phases and make predictions based on evidence (patterns) as to when they will return or what will happen next.

7. Science Focus: Astronomy discuss what is astronomy and what astronomers have learned by looking at the stars

Discuss famous astronomers; Galileo Galilei, Edwin Hubble, Carl Sagan, Neil deGrasse Tyson and discuss their contributions to astronomy.

8. Myth of the Bear – American Indian tribes used stories to teach their children and tribal members about patterns in the night sky that often applied to events that happened on earth.

Students will learn about and perform different myth based on the stars and star patterns throughout history with a focus on the Big Dipper. They will learn; The Great Bear (Greek), Bear and the Three Hunters (Musquakie, Iroquois Tribes) Shou Lao on the heavenly mountain of Tien Shan (China) The Homes of the 7 Sages (Hindu) Charles' Wain (Europe).

### Physics

9. Science Focus – What is Physics and what have physicist learned by studying energy and motion

Physics is the study of matter (anything that takes up space and has mass) and energy (the ability to do work or make things move). Students the different types of energy and how matter is made or atoms.

10. Solids, Liquids and Gas – Define Chemistry and explain how it's a part of physics. Use water to demonstrate the three states of matter

Using their science notebook students will draw a chart with three column, solid liquid and gas. Students will draw things that fit into each category.

11. What is a wave – Define the properties of a wave and use models to demonstrate different waves

Define a wave and how it describes the movement of energy. Using a slinky and a rope demonstrate, sound and light waves.

12. Sound – Develop an experiment that demonstrates that sounds waves can moves objects and can be created by moving objects



Students will demonstrate their knowledge of sound waves by creating experiments that show how sound is created by things that vibrate and how things that vibrate and move objects. Some of the materials students can use are rubber bands, Slinkys, string, drums, paper, rice kipsies, etc.

13. Make an Instrument – Using your knowledge of sound waves create different instruments

Sound is created by vibrating objects. Vibrating objects can include rubber band

14. Light – Study the properties of light by conducting experiments with objects that are transparent, reflective, and opaque. Use your instruments and knowledge of light to put on a show

15. Glow Sticks – Observe glow sticks and discuss their propose. Look at images and explore how some animals benefit from glowing

16. Sun light – Use solar beads to conduct an experiment showing the effectiveness of different brands of sun block

17. Electromagnetic Spectrum – Observe a phenomenon using a plasma ball and develop hypotheses as to how it works

18. Fun with Physics – Using a pile of junk create a game that is fun The fridge has been cleared of all old stuff, the inventory has been checked, dishes are done, trash and recycling has been removed, laundry is drying, dog has been walked, we are headed to the water park

19. Fun with Physics – The fridge has been cleared of all old stuff, the inventory has been checked, dishes are done, trash and recycling has been removed, laundry is drying, dog has been walked, we are headed to the water park. Using the game created in the last class explain how forces help to make the game fun

20. Hovercraft – Use a hovercraft to explore the ideas of force and motion

21. Science Focus – Biology and what Biologists have learned by studying life

22. Organize your room– Have fun making a mess understanding that we will use the properties of the objects to get everything organized again

23. Animal Adaptations – Select an animal to research and discuss how its specific traits improve the animals ability to do different things



24. Inventions from life – Examine a number of different inventions and match the invention with the living things that inspired or influenced its development
25. Bugs – Look at images different living things and determine if it can be classified as a bug
26. Living things safari – Use a camera to take pictures of living things that live around your area
27. Parent patterns – Watch short videos on how animals and their offspring interact to observe patterns in their behavior
28. Traits – Analyze different images of plants and animals. Use their specific traits to create a family tree
29. Trait Toss – Make a creature by defining traits and flipping coins to determine what traits they will have
30. Plant seeds – Look at different plant seeds and discuss how their form might help with their survival
31. Parts of Plants – Identify the different parts of plants and how each part of the plant is a resource
32. Ecosystems – Study different ecosystems and explore how each have similarities but are also different
33. Business and the Environment – Learn how businesses are changing some of their practices to reduce their effect on the environment. Discuss ways we can reduce our impact
34. Exercise and you – Research the benefits of exercise on the human body and measure what changes in your body when you exercise
35. New Technology – Examine different technologies that are being developed and discuss the pros and cons of having that technology
36. Share what you know – Share your favorite moments during science class and what you have learned