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SCIENCE PARENT GUIDE – UNIT 1

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| ***IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME*** | |
| **SOLAR SYSTEM: Planets and Stars** | |
| **DESCRIPTION** | |
| In this unit, fourth grade students will compare and contrast the physical attributes of stars and planets. Students will be able to ask and answer questions to compare and contrast information about distant objects in the sky. Students will construct and explain the differences between stars and planets and evaluate models of the solar system describing the size, order, appearance, and composition of planets and sun. Students will also conduct scientific investigations, utilize technology to increase their power to observe distant objects in the sky, and measure and compare information for accuracy. | |
| **KEY WORDS TO KNOW** | |
| * Stars- A huge, burning sphere of gases; for example, the sun * Planets- A large object that moves around a star * Galaxy- a group of stars * Universe- made up of all the celestial bodies in space * Constellation- The pattern formed by a group of stars in the sky * Celestial- pertaining to the sky or outer space * Solar System- the Sun, planets, moons, and stars that orbit the Sun * Solar System- all celestial bodies (planets, comets, moons, asteroids, dwarf planets) that orbit the sun, Earth’s closest star. * Telescope- A device people use to observe distant objects with their eyes. * Comet- A ball of rock, ice, and frozen gases that revolves around the sun | * Constellation- The pattern formed by a group of stars in the sky * Celestial- pertaining to the sky or outer space * Technology: the practical application of knowledge, especially in a particular area * Advance: to move forward or get better at something * Astronomy: the study of everything outside our atmosphere * Revolve- to travel in a closed path * Rotation- to spin around an axis * Relative size: how an object appears next to another object * Order: the arrangement of objects * Appearance: how something looks * Composition: what something is made of   **AT HOME VOCABULRY STRATEGIES**  **1**. Read aloud with your child.  **2**. Use vocabulary words in daily conversations.  **3**. Build a word wall or window.  **4**. Play simple vocabulary games.  **5.** Relate words to real life experiences.  http://1.bp.blogspot.com/-QOn2S_p5PU8/Vg5eWgC54BI/AAAAAAAAPuU/lQnA-gp1UkM/s640/vocabulary.png |

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| C:\Users\KENNEDY\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\QH0NFGU2\idea-azione-motivazione[1].png**Recommended Children’s Literature (Available at your local public library or Amazon).**  *Good Night Galaxy* by Gamble, Adam  *Look Inside Space* by Rob Lloyd Jones  *The Planets in Our Solar System* by Franklyn M. Branley  *There’s No place Like Space: All About Our Solar System* by Tish Rabe  *What’s Out There?: A Book about Space* by Lynn Wilson  *The Planets* by Gail Gibbons  *How Many Planets Circle the Sun?: And Other Questions about Our Solar System* by Mary Kay Carson  *The Magic School Bus Lost in the Solar System* by Joanne Cole  *What We See in the Stars: An Illustrated Tour of the Night Sky* by Kelsey Oseid | | | |
| **SOLAR SYSTEM: PLANETS AND STARS** | | | |
| **Important Concepts**  **Addressed in this Unit** | **Sample Problems** | | **How You Can Help Your Student** |
| S4E1. Obtain, evaluate, and communicate information to compare and contrast the physical attributes of stars and planets.   1. **Ask questions** to compare and contrast technological advances that have changed the amount and type of information on distant objects in the sky. 2. **Construct an argument** on why some stars (including the Earth’s sun) appear to be larger or brighter than others. (Clarification statement: Differences are limited to distance and size, not age or stage of evolution.) 3. **Construct an explanation** of the differences between stars and planets. 4. **Evaluate** strengths and limitations of **models** of our solar system in describing relative size, order, appearance and composition of planets and the sun. (Clarification statement: Composition of planets is limited to rocky vs. gaseous.) | 1. What is a star? 2. How are stars alike and different from each other? 3. How does the sun compare to other stars in the night sky? 4. How are planets and stars alike and different in relation to appearance, position, and number in the night sky? 5. Why are planets seen in different locations in the night sky throughout the year? 6. How can technology be used to observe distant objects in the sky? 7. What are the relative sizes of the planets in our solar system? 8. What is the relative order of the planets from the sun in our solar system. 9. How can technology be used to observe distant objects in the sky? | | Digital Resources  Science Curriculum: STEMscopes via MyBackpack <https://launchpad.classlink.com/atlanta>  Supplemental Resource  Freckle (available via MyBackpack in August)  NASA [www.nasakids.com](http://www.nasakids.com)  Astronomy <http://www.kidsastronomy.com/stars.htm>  Study Jams Videos  [Seasons](http://studyjams.scholastic.com/studyjams/jams/science/weather-and-climate/seasons.htm)  [A Day on Earth](http://studyjams.scholastic.com/studyjams/jams/science/solar-system/day-on-earth.htm)  Day/Night Cycle Facts: <http://www.theschoolrun.com/homework-help/day-and-night> |
| **Changes to Science Standards: Students are expected to perform the practices while learning the content and understanding the crosscutting concepts.** | | | |
| **Science and Engineering Practices**  Students can use their understanding to investigate the natural world through the practices of science inquiry, or solve meaningful problems through the practices of engineering design.  **Crosscutting Concepts**  Provide students with connections and intellectual tools that are related across the differing areas of disciplinary content and can enrich their application of practices and their understanding of core ideas  **Core Ideas**  Core ideas cover the four domains: physical sciences, earth and space sciences, life science, and engineering and technology. | |  | |