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Education 323

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Earth and Space Science Resources

Websites:

1. Phases of the Moon Rap (Mr. Lee)
 - a. Description: This YouTube video is a song about the phases of the moon (all eight of them) and also explains how the moon orbits as well as reflects the light of the Sun. It is set to the tune of the song “Kill ‘Em” by Fabolous.
 - b. Link: <https://www.youtube.com/watch?v=79M2lSVZiY4>
2. Climate Kids: NASA’s Eyes on the Earth- What is the Greenhouse Effect?
 - a. Description: This website explains what the greenhouse effect is and how it works. This website is especially helpful because there are lots of pictures and diagrams.
 - b. Link: <http://climatekids.nasa.gov/greenhouse-effect/>
3. Climate Kids: NASA’s Eyes on the Earth: Greenhouse Effect; Keeping the Balance
 - a. Description: This site discusses the effect of carbon emissions as a waste product, specifically fossil fuels. However, it also teaches children that not all hope is lost, that planting trees can reverse the dangerous effects of excessive carbon emissions.
 - b. Link: <http://climatekids.nasa.gov/greenhouse-effect-and-carbon-cycle/>
4. Planets for Kids

- a. Description: This website is a free astronomy website for kids. It discusses stars, moons, and planets. It even includes a “Solar System Song” YouTube video on the site as well as coloring pages and quizzes.
 - b. Link: <http://www.planetsforkids.org/>
5. Earth Science: Rocks and the Rock Cycle
- a. Description: This website teaches kids about what makes up a rock and the different types of rock, as identified by different characteristics. It also discusses the rock cycle, space rocks, and interesting fun facts.
 - b. Link: <http://www.ducksters.com/science/rocks.php>

Apps/Virtual Labs:

1. Atmosphere Virtual Lab
 - a. Description: This virtual lab enables students to explore the structure of the Earth’s atmosphere. It even explores different weather patterns and phenomenon based on the layer in which it occurs.
 - b. Link: http://www.glencoe.com/sites/common_assets/science/virtual_labs/ES14/ES14.html
2. Offset Game- Keep Earth in Balance
 - a. Description: Students play a game to keep the earth’s atmosphere in balance based on carbon emissions. Students are able to “upgrade” as they earn points to swap out outdated technology with new renewable sources of energy, such as solar panels and windmills.
 - b. Link: <http://climatekids.nasa.gov/offset/>
3. NASA Space Place: “Missions to Planet Earth”
 - a. Description: Students play the "Missions to Planet Earth" online card game. The mission is to help to prepare five important NASA Earth missions. The

information from these missions will help scientists understand how to keep Earth in harmony and friendly to all its living things.

- b. Link: <http://spaceplace.nasa.gov/earth-card-game/en/>
4. NASA Solar System Explorer Game
 - a. Description: The Solar System Explorer game contains several mini-games. Students can explore the planets, moons, asteroids, and comets by clicking on them. Then, for some of the objects with NASA missions, students can play a game.
 - b. Link: <http://spaceplace.nasa.gov/solar-system-explorer/en/>
 5. The Four Seasons Matching Game
 - a. Description: Students identify all four seasons by dragging and dropping words onto corresponding images.
 - b. Link: <http://www.playkidsgames.com/games/seasons/#>

Lessons:

1. Exploring Stars Lesson
 - a. Description: Students will first watch a short documentary clip about the composition of stars. They will use this information to describe the life cycle of a small, medium, or large star using correct vocabulary for the stages in a star's life. Students will also compare the life cycles of small, medium, and large stars. To do so, students will create a "flip book."
 - b. Link: <http://school.discoveryeducation.com/lessonplans/programs/exploringstars/>
2. Classifying Rocks and Minerals Lesson

- a. Description: Students will identify basic properties of minerals and rocks using a magnifying glass and various samples of rock.
 - b. Link: <http://www.uen.org/Lessonplan/preview?LPid=2492>
3. Exploring the Seasons Lesson
 - a. Description: Students will participate in a discussion about their favorite season. They will describe their favorite season using different adjectives. Students will also listen to a read aloud story such as, “A Tree for All Seasons.”
 - b. Link: <http://www.uen.org/Lessonplan/preview.cgi?LPid=21402>
4. Phases of the Moon Lesson
 - a. Description: Students first review their previous understanding of the moon in its orbit around the earth. Then students will observe a demonstration by the teacher using a flash light, tennis ball and beach ball to model the reflection of the Sun. Finally, students will experiment themselves in groups of two, using cookies, a plastic knife, and a paper plate to create the different phases of the moon, from waxing, to waning, to full.
 - b. Link: <https://educators.brainpop.com/lesson-plan/phases-of-the-moon-lesson-plan-position-of-the-planets/>
5. Classroom Planetarium
 - a. Description: Students will understand the relationship of the nine planets in the solar system to the sun by creating a three dimension representation using items like balloons.
 - b. Link: <http://school.discoveryeducation.com/lessonplans/programs/classroomplanetarium/>

STEAM Lesson:

1. Create Your Own Rock!
 - a. Description: Students will engineer their very own rock using different paper minerals. This will help students to learn the basic properties of minerals and rocks.
 - b. Link: <http://www.uen.org/Lessonplan/preview?LPid=11491>