5th Grade – Earth Science: Earth and Space Systems

- Week 1
  - **Exploring Space Careers** – Research careers that help to explore the universe, such as astronauts, engineers, or astronomers. Create a visual of your research.
  - **Solar System Walk-** Create a scale model that is one 10-billionth of our solar systems' actual size to take a solar system walk. You will need a large area outside that is 600 meters long, 9 pieces of cardstock, a marker, and a measuring tape. Write the name of each planet on a piece of cardstock. (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune) Label one piece of cardstock Sun, and place it at the one end of the outdoor area. Use the chart below to step off the location of each planet in your model, and place the cardstock label for each planet at the correct location.
    - A pace is equal to two steps! Calculate the number of steps needed for each planet, and record on the back of the cardstock for each planet.

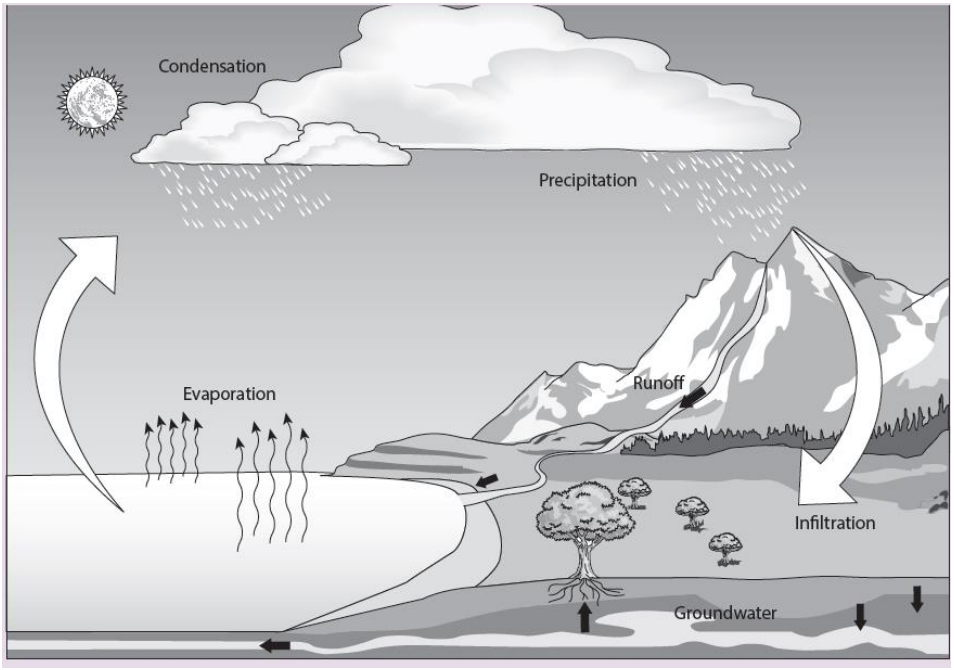
Sun to Mercury	Mercury to Venus	Venus to Earth	Earth to Mars
About 6 paces	About 5 paces	About 4 paces	About 8 paces

Mars to Jupiter	Jupiter to Saturn	Saturn to Uranus	Uranus to Neptune
About 55 paces	About 65 paces	About 144 paces	About 163 paces

- Week 2
  - **Read literacy Article 2A: Speeding in Space** (link). Answer the questions to help understand the movement of the planets around the Sun.
  - **Life Cycles and Star Colors:** Research the life cycle of a star as well as how surface temperature and the color of stars are related. Describe how a Hertzsprung-Russell Diagram is used to classify the brightness and temperature of stars.
  - Explore patterns in stars by using an interactive online sky map. (**In the Sky** and **Neave's Interactive Planetarium**) Trace the apparent movement of a constellation for your location to study how the constellation changes hourly, monthly, and annually. Draw the changes in the position of the constellation.

- Week 3
  - **Take Home Science: Observing Patterns of Day and Night (link):** Observe and record the sunrise, sunset, and Moon phase in the sky over your home for 14 days.
  - **Read literacy Article 3A: Land of the Midnight Sun (link):** Answer the questions to help understand how the Earth's revolution and the tilt of its axis affect the amount of sunlight that falls on Alaska.

- Week 4
  - **Water Cycle Art or Storytelling:** Create a collage, video, poem or short story about the water cycle diagram below.



  - **Read Literacy Article 4B: California's Water Shortage (link):** Answer the questions to understand why some areas of the Earth do not have fresh water available.

- Week 5
  - **Citizen Science :** Humans depend on and benefit from Earth systems, and human actions also influence these systems. Visit the SciStarter and Journey North websites for ideas on how to collect and share data on your local environment, such as monitoring streams, observing bird migration, and reporting cloud and weather patterns.
  - **Conserving Water Math Challenge:** Dentists advise you to brush your teeth for

about two minutes each time you brush. Follow the steps below to calculate the amount of water used if you leave the water running while you brush your teeth.

- Place a large bucket under the faucet and turn it on. Begin timing, and turn off the faucet when two minutes have passed.
- Using a beaker or measuring cup and a second bucket, measure approximately how much water was collected in two minutes in mL. (One cup = 237 mL)
- Calculate how much water is used if you brush your teeth twice a day and leave the water running.
- Calculate how much water is used if every person in your family brushes their teeth twice a day and leaves the water running.
- Calculate how much water is used in a month if every person in your family brushes their teeth twice a day and leaves the water running.
- Convert each of the above answers to liters. (1,000 mL = 1 L)

- **Innovators in Science –** Pick a person below, research and write about why they can be called an "innovator in science."
  - Deepika Kurup - http://www.rsc.org/diversity/175-faces/all-faces/deepika-kurup/
  - Shawn Urbanski - https://www.fs.usda.gov/rmrs/people/surbanski