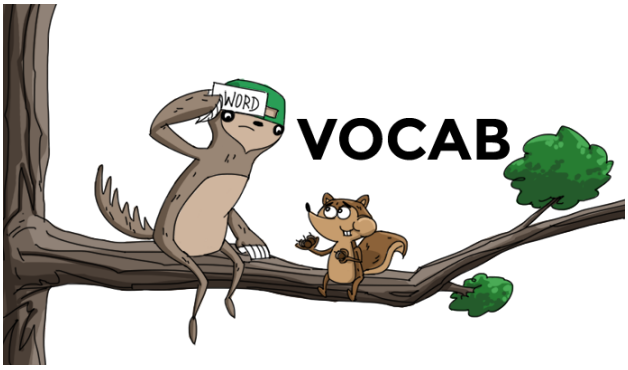
Solar System Lesson 1: *The Solve*

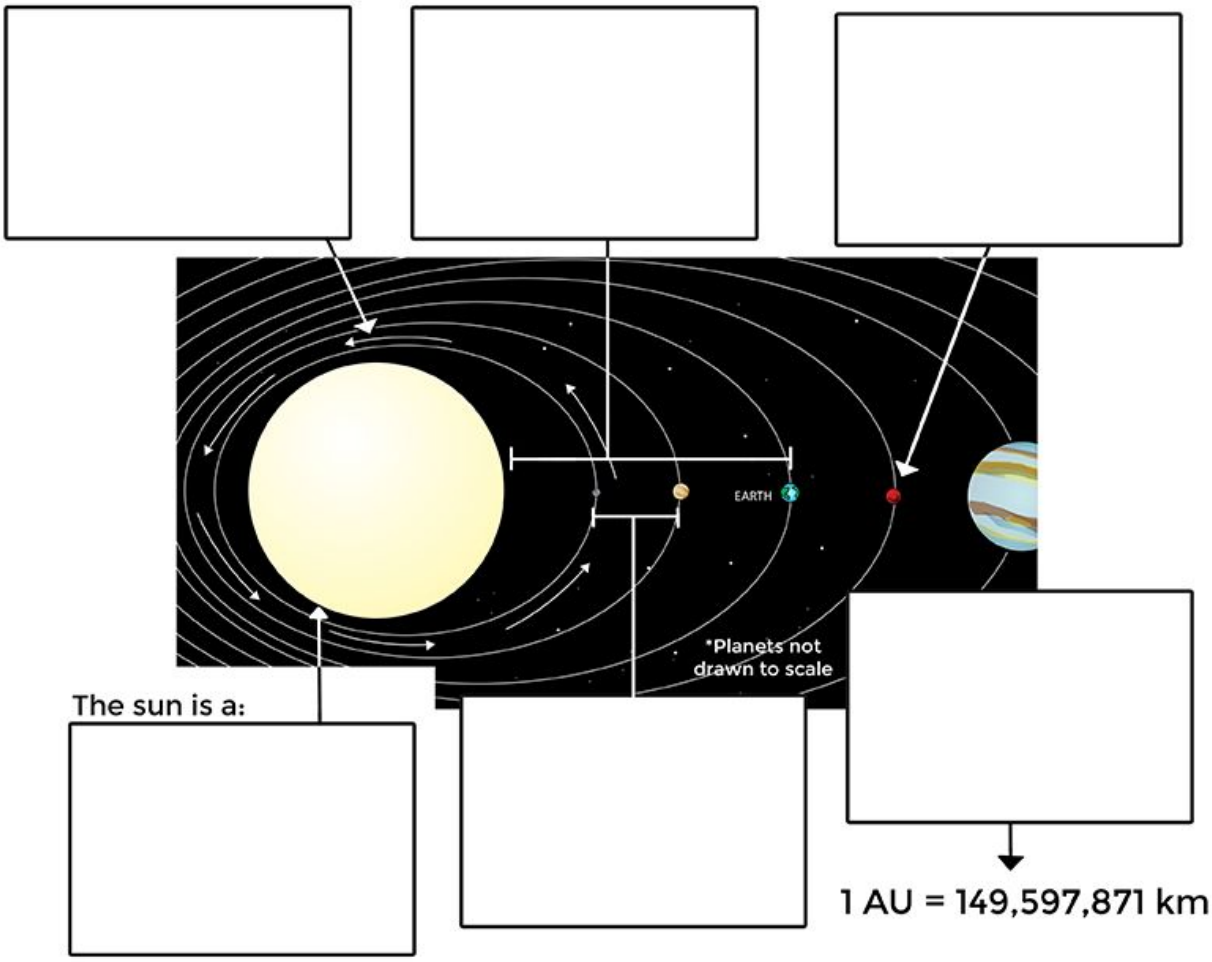
Student Handout

I. Vocabulary Warm-up



1. Using the materials at your table, cut out your vocabulary cards along the **solid lines**.
2. Write the definitions on the back of the cards. Then, match the vocabulary word with the correct picture on the **Solar System Mind Map**. When you're ready to glue, raise your hand so you can check your Mind Map with your teacher.
3. Fold along the dotted line on each vocabulary card to create a flap. Put glue **ONLY** on the hinge of your vocabulary cards (the word should be on top). **You should be able to open the flap to see the definition and the picture underneath.**
4. Discuss with your group:
    a. How do we measure distance in the solar system?
    b. What are examples of stars you already know of?
    c. How have you used the word ratio before in other subjects?

Mind Map



Orbit	Mars	Distance
AU	Star	Scale

Vocabulary

- Distance: an amount of space between two objects
- Astronomical Unit (AU): a unit of length equal to the distance between Earth and the sun
- Mars: fourth planet from the sun
- Star: a fixed luminous point in the night sky that is made of a mass of burning gas
- Orbit: the curved path of an object around a star, planet, or moon.
- Scale: the ratio of the length in a drawing or model to the length of the object in real life.

II. Read/Watch Mosa Mack

Either on your own, in a small group, or as a class (your teacher will let you know), read or watch Mosa Mack's Comic Mystery on the Solar System. Then, fill out the questions below. Include a page number in your answer as evidence of where you found your answer.

Name: _____ **Date: _____**

Episode Questions

1. Why did Marsha and Wes fail in their mission?

2. Marsha and Wes are trying to create an amusement park on Mars. What dimensions do they need to create their first attraction?

3. What feature did Marsha study in order to help her design the Crater Craze Climber attraction?

4. What did Mosa and her team look at to gather information about the Mars canyon?

5. Why were the models, drawings and photographs helpful?

6. Practice: If 1 cm on a model is equivalent to 2 km on Mars, how tall would a Mars mountain be if it measured 2 cm on the model?

7. Why was it a bad idea for Marsha and Wes to use the Grand Canyon as a point of comparison when designing the Crater Craze Climber on Mars?

8. How did Mosa determine the width of the crater?

III. Exit Ticket: Check for Understanding

Complete the exit ticket below or you can take the quiz online!

Name: _____ **Date: _____**

1. The Crater Craze Climber was originally built 16 km wide and 2 km deep. Why was this incorrect?
    a. The Crater Craze Climber was too large for the canyon found on Mars
    b. The depth of the crater on Mars is only 1 cm in depth
    c. The Crater Craze Climber was built according to the dimensions of the Grand Canyon on Earth, which was much smaller than the canyon found on Mars
    d. The width of the crater on Mars was smaller than Marsha realized

2. What information did Mosa need in order to calculate the dimensions of the canyon on Mars?
    a. The depth of the canyon on Mars
    b. The width of the canyon on Mars
    c. A key showing the size of the drawing compared to the size of the actual canyon
    d. All of the above

3. True or false: A kilometer (km) is larger than a centimeter (cm) in metric measurement.
    a. True
    b. False

4. What type of data **cannot** be obtained from studying a scale model of a planet?
    a. The relative size of the planet
    b. The temperature of the planet
    c. The depth of a canyon on the planet
    d. The width of a canyon on the planet

5. What materials did Mosa Mack and her crew study at the science museum in order to learn more about the canyon on Mars?
    a. Photographs (taken from a telescope) of the canyon on Mars
    b. Scaled drawings of the canyon on Mars
    c. A scaled model of Mars
    d. All of the above