Student Name	Date	
Stautil Haire		

As a team, decide who will take each of the following roles. Read through this page and discuss what must be done.

- Leader—keeps the group on task.
- Material Specialist—collects items on the Materials List.
- Recorder—writes down group answers.
- Reporter—speaks for the team.

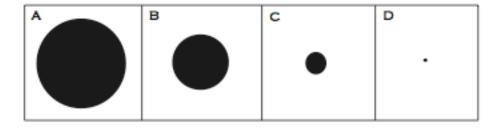
Materials List

Metric ruler
Balloon
Miniature marshmallows
Poppy seeds
Mustard seeds
Kix cereal and Crunchberries
Popcorn kernels
Dried peas
1-cent gum balls
Black Pepper
Glue

Part 1: Exploring the Planet Sizes

Directions. Blow the balloon to 15 centimeters in diameter. This balloon is a model Sun that is approximately one ten-billionth (10,000,000,000) the size of the real Sun. The questions below show planets that use the balloon as the scale model for the Sun.

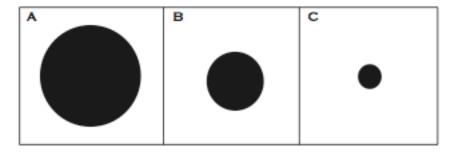
1. Predict which circle below you think represents the model Earth, if the balloon is the model Sun.



2. Which planet is the biggest? (Circle One)

Earth Jupiter Mars Mercury Neptune Saturn Uranus Venus

3. Which circle below do you think represents the biggest planet?



- 4. Look at the Model Planet Cards. What are the three smallest planets?
- 5. What are the four largest planets? Hint: These are called the gas giants.
- 6. Using the items on the Materials List, match them to the size of the planets on the cards, and glue them to the right card.
- 7. Find your model Sun and model Earth. How far do you think the model Earth should be from the model Sun? State your answer in meters.
- 8. Walk the distances between the planets with your class and complete the chart below with your teacher's help.

Walking from:	Paces (or meters) between models:	Total distance from model Sun to each Planet
Sun to Mercury		
Mercury to Venus		
Venus to Earth		
Earth to Mars		
Mars to Jupiter		
Jupiter to Saturn		
Saturn to Uranus		
Uranus to Neptune		
Neptune to Pluto		

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WARNING: The planets never actually all line up to one side of the Sun. They orbit the Sun on different paths at different speeds. So interplanetary distances are actually greater than what we are walking. Also some planets orbit in different planes.

- 9. What were you surprised to learn about the size of the planets?
- 10. What were you surprised to learn about the distances between the planets?
- 11. Draw and label a picture of your model Solar System that shows the distances of the planets on a sheet of paper. (You will need more than one.) Use a millimeter as your "ruler" instead of a "pace."

Add the following to your picture:

- A scale of 1mm = 1 model meter = 10 billion real meters
- A note saying, "The sizes of the planets are NOT drawn to scale.
- A note saying, "Remember: The planets never actually line up on one side of the Sun."

Student Name	 Date	
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Model Planet Cards

MERCURY

MERCORI

VENUS

EARTH

•

MARS

.

JUPITER



SATURN



URANUS



NEPTUNE



PLUTO