

HOW DO I LOOK?



BENCHMARKS and TASK

SC.E.1.2.4 The student knows that the planets differ in size, characteristics, and composition and that they orbit the Sun in our Solar System.

SC.E.1.2.5 The student understands the arrangement of planets in our Solar System.

- The student classifies the planets according to size, characteristics, and composition.

KEY QUESTION

How can you classify the planets in our solar system?

BACKGROUND INFORMATION

Our **solar system** consists of the **sun** and all the objects – nine **planets** and their moons, asteroids, meteoroids, thousands of comets, and particles of dust and gas – that revolve around the sun. Each of the nine planets spins around an **axis** and travels in a counterclockwise direction around the sun. The time it takes a planet to orbit around the sun is that planet's year. A planet's distance from the sun affects its climate and atmosphere.

Planetology is a field of science that unites the study of earth with the study of space. Planetologists try to explain why earth is so different from other planets.

MATERIALS

Per group

student activity sheets
crayons or markers

Teacher

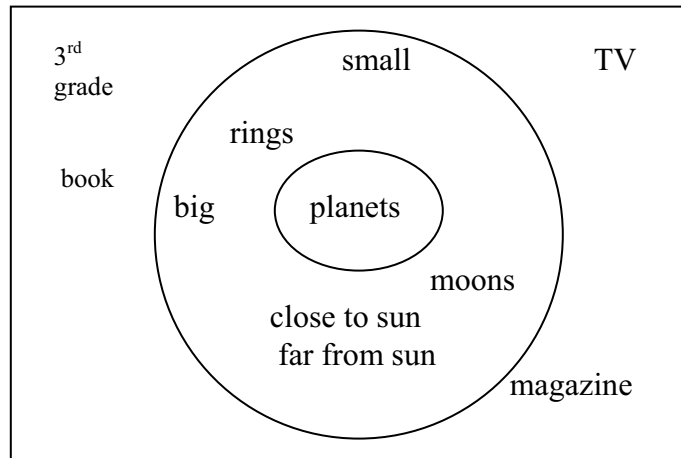
Our Solar System, Rachel Kranz, Benchmark Educ. Co.
A Tour of the Planets, Melvin Berger, Ranger Rick

TEACHING TIP

New information about our world is published on a daily basis. Students should be encouraged to look for information about our solar system on the Internet or in newspapers and magazines.

ENGAGE

Ask students what they know about the planets. As students share, record this information on a Circle Map. Use the frame around the circle to record where the students learned the information.



EXPLORE

1. Draw a Venn diagram on the board and discuss how it is used for comparing and contrasting information.
2. In small groups, students should use the *Planetary Facts Information Sheet* to determine which attributes to color in on the *Planetary Facts Sorting Table*. Ask students to choose three more attributes that they can use to classify the planets. Have them write the attributes at the top of the chart in the blank spaces on the *Planetary Facts Sorting Table* and then classify the planets accordingly.
3. Have the groups compare their results and discuss any differences.
4. Next, using the two-circle and three-circle Venn diagram activity sheets, have the groups write the names of the planets in the appropriate places. Once again as a whole class, discuss similarities and differences of the planets from information recorded by the groups on the Venn diagrams.

EXPLAIN

Using the Venn diagrams and Planetary Facts sheets, determine:

Which planets have moons?

Which planets have no moons?

Which planets have both moons and rings?

Which planets have the most moons?

What is the total number of moons?

What is the average number of moons?

Determine if there is a relationship between the size of a planet and the number of moons.

Which planets are larger/smaller than the earth?

Which planets have days longer than 24 hours?

Which planet fits the first three categories on the Planetary Facts table?

Which two planets are the closest in size?

EXTEND/APPLY

1. Hang a card with the name of a planet on the back of one student. Allow the student to ask the class questions in order to discover which planet, moon, or sun is on his back. (This is similar to the game Twenty Questions.) Students may use the *Planetary Facts Information Sheet* to help them ask questions.
Next, hang a card with the name of a planet on the back of each student and allow the students to circulate through the classroom asking yes/no questions that will help them identify their mystery planet. Students should sit down once they think they have determined the name of their planet.
2. Read *Our Solar System* by Rachel Kranz and/or *A Tour of the Planets* by Melvin Berger.

EXTENSION

Divide students into ten groups. Have students do research on individual planets and the sun. Have each group make a paper-mache' model of one of the planets. Ask one group to make a model of the sun. Summarize information learned about the planet on an index card and suspend it from the paper-mache' model. Display the models in the classroom as a representation of our solar system.

ASSESSMENT

Have students make a layered book. On each page, they should write the name of one planet along with other interesting facts and information learned.

HOW DO I LOOK? Planetary Facts

Names: _____



Planetary Facts Information Sheet

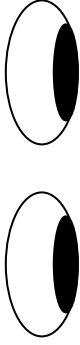
	Approximate Diameter	Approximate Period of Rotation	Moons	Rings
Mercury	4,900 km	59 days (176 days)*	0	No
Venus	12,100 km	243 days (117 days)*	0	No
Earth	12,800 km	23 hours, 56 minutes	1	No
Mars	6,800 km	24 hours, 37 minutes	2	No
Jupiter	143,000 km	9 hours, 55 minutes	16	Yes
Saturn	120,600 km	10 hours, 39 minutes	18	Yes
Uranus	51,100 km	17 hours, 14 minutes	15	Yes
Neptune	49,500 km	16 hours, 7 minutes	8	Yes
Pluto	2,300 km	6 days, 9 hours	1	No

*Length of day = sunrise to sunset

HOW DO I LOOK?

Names: _____

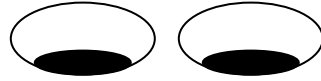
Sort the planets. Color in the spaces that are true next to each planet's name.
Use this information to place the planets on the Venn diagram.



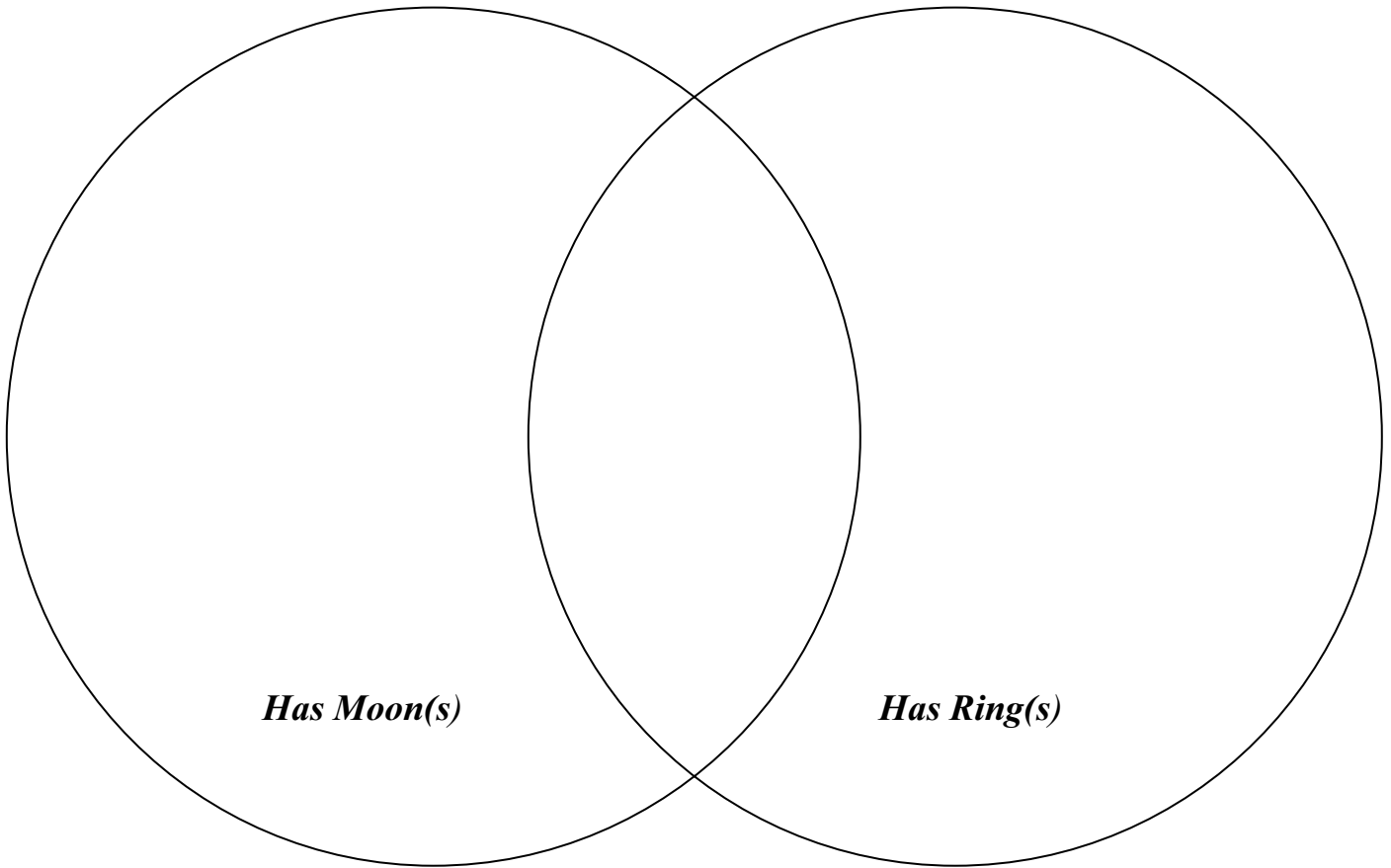
Planetary Facts Sorting Table

	Larger than Earth	Has Ring(s)	Has Moon(s)		
Mercury					
Venus					
Earth					
Mars					
Jupiter					
Saturn					
Uranus					
Neptune					
Pluto					

HOW DO I LOOK?



Use the information from the *Planetary Facts Sorting Table* to write the names of planets in the correct circle or intersection of circles.



HOW DO I LOOK?

Names: _____



Use the information from the *Planetary Facts Sorting Table* to write the names of planets in the correct circle or intersection of circles.

