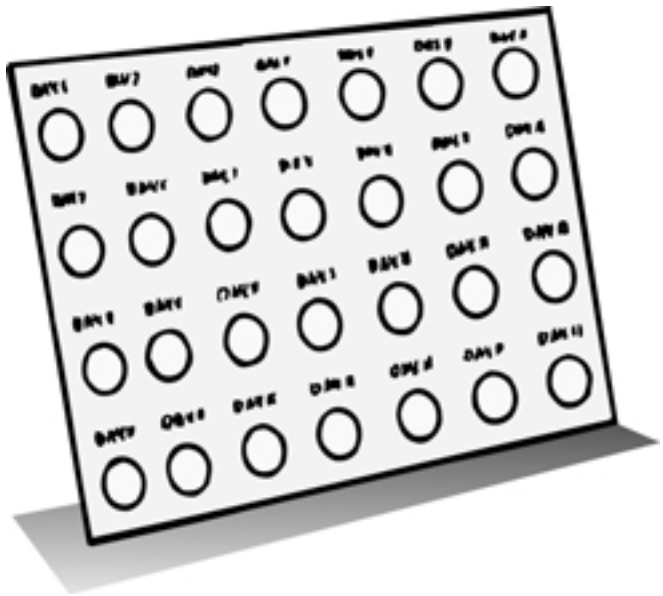
Chapter Science Investigation Name _____

Project Moon Watch

What You Need

moon calendar



Find Out
Do this activity to see how the moon's appearance changes during a 30-day period.

Process Skills
Observing
Communicating
Inferring

Time

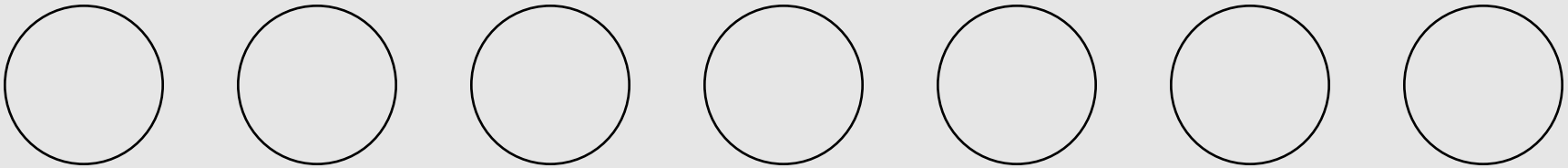
- 30 minutes for opening discussion
- 5 minutes of observation and drawing for 30 days
- 20 minutes of discussion time on the last day

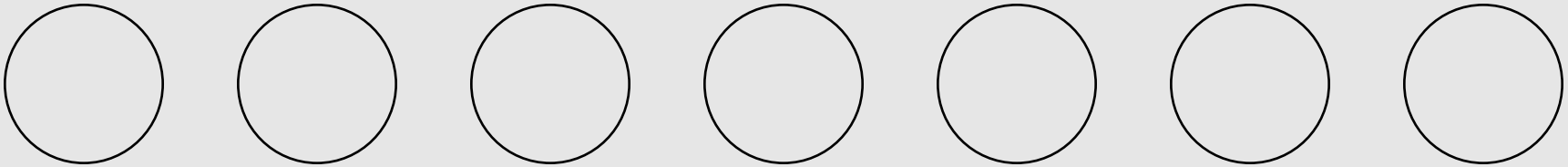
What to Do

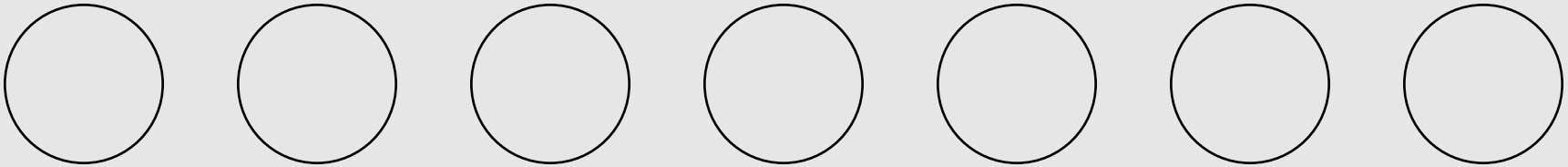
1. **Observe** the moon for 30 days. On your moon calendar, **color** any part of the moon that you cannot see.
2. At the end of 30 days, bring your moon calendar back to class. Compare your moons with others.
3. If there were clouds, complete the moons you left blank by **inferring** what each moon would look like if you had been able to see it.

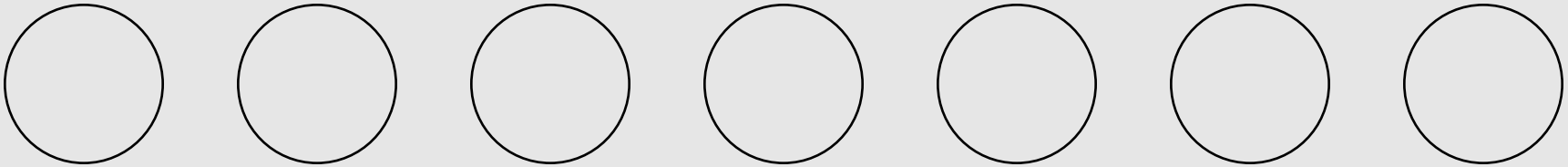
The moon's position changes over the course of one month. After the new moon phase, the moon rises and sets 52 minutes earlier each night. The moon cannot always be seen at night. During the new moon phase, the moon can be seen during the middle of the day and not at night. When the moon is between full and new, it is visible right after sunrise in the western sky. Consult a newspaper for additional help in tracking the moon's phases.

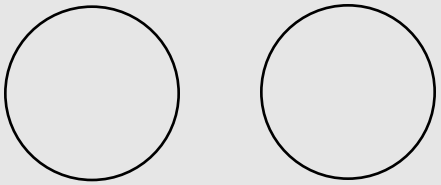
Color in the part of the moon that you cannot see.











Drawings will vary, but should show that the amount of the moon that we can see changes during the course of one month.

Conclusions

1. Did everyone's drawings show the moon in the same phases?

yes

2. Did the moon phases change in a regular pattern? Explain.

Yes. After the new moon phase, the lighted part of the moon that we can see gradually increases. After the full moon phase, the lighted part of the moon we can see gradually decreases until the new moon phase begins again.

New Questions

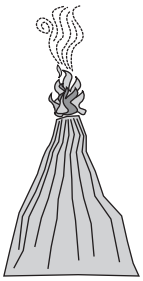
1. Was your neighborhood a good place to see the phases of the moon?

Answers will vary depending on student experiences.

2. Write a new question you have about moon phases.

Accept all questions.

Name _____



ACTIVITY

Modeling Day and Night

Predict what will happen when you spin the ball.

Accept all reasonable predictions.

Record what happens when you spin the ball.

When the dot faces away from the light, that side of the ball is dark.

Name _____

What Happened

1. What object in space is like the ball?
   What object in space is like the flashlight?

The ball is like Earth; the flashlight makes light, like the sun.

2. What happens when the dot faces away from the flashlight?

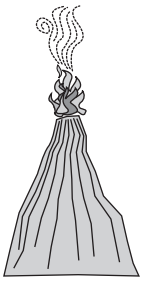
It is in darkness.

What If

What would happen if you did not spin the ball?

One side would always be dark and the other side would be light.

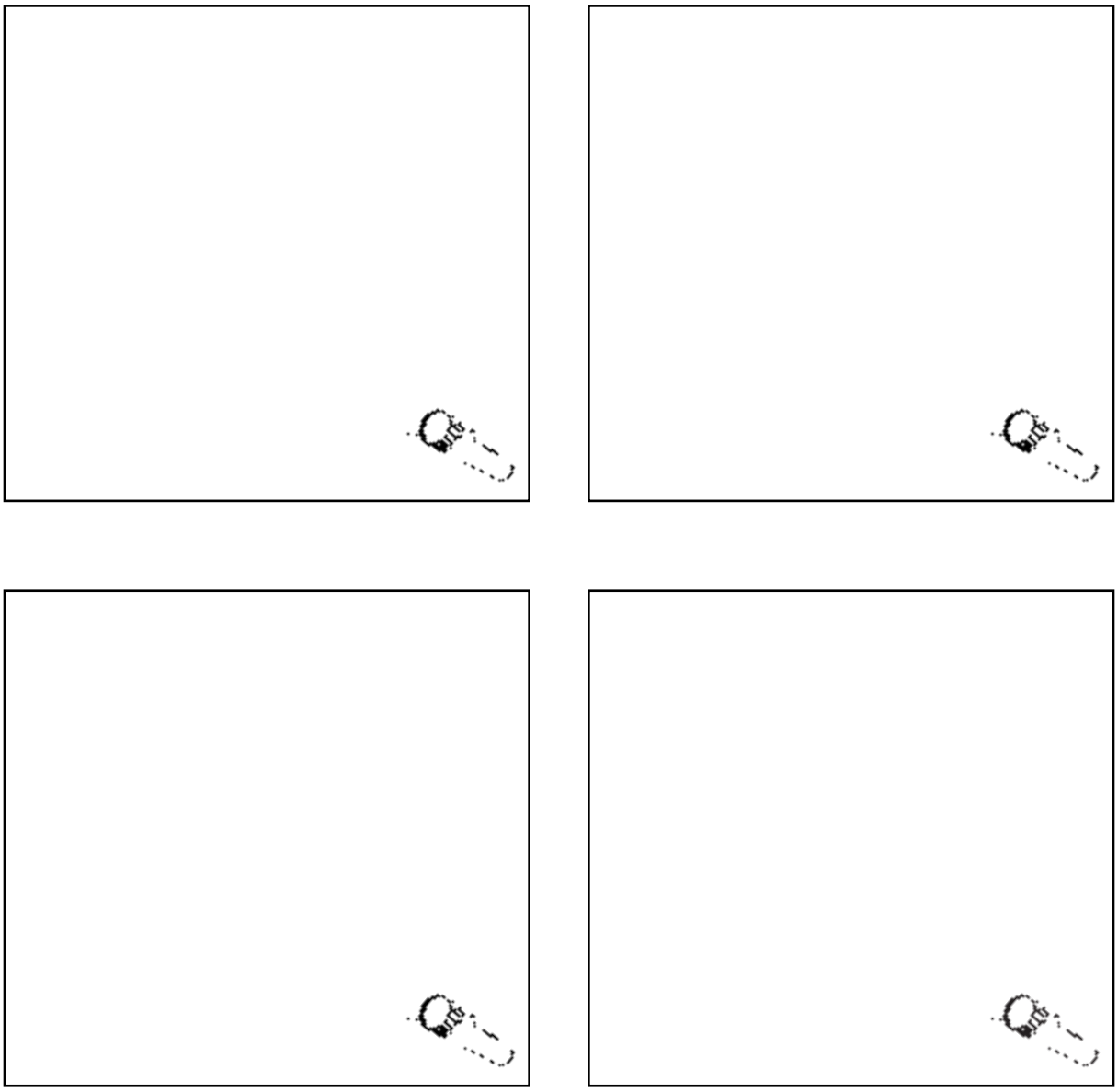
Name _____



ACTIVITY

Modeling the Moon

Draw how the ball changed when you turned.



Drawings will vary but should resemble the phases of the moon.

Name _____

What Happened

1. What object in space is like the ball? What object in space is like the flashlight?

The ball is like the moon. The flashlight is like the sun.

2. What happens to the ball when you are facing toward the flashlight? What happens when you are facing away from the flashlight?

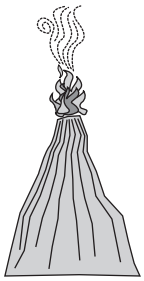
When you are facing toward the flashlight, the ball is dark. It starts to lighten as you turn. When you are facing away from the flashlight, the ball is light. It darkens as you turn toward the light.

What If

What would happen if you got between the light and the ball?

The ball would be dark.

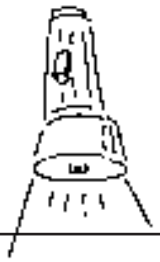
Name _____

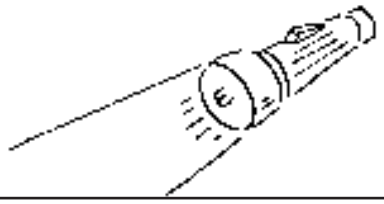


ACTIVITY

Shining Sunlight

Count the number of squares in the lighted area.
Write your answers in the boxes.





Flashlight Straight	Flashlight Tilted

Answers will vary. Students should find that there are more squares in the lighted area when the flashlight is tilted.

Name _____

What Happened

1. Imagine the flashlight is the sun and the light on the paper is sunlight as it hits Earth. Which try is like the sun and Earth in winter? Which try is like summer?

When the flashlight is held straight down, it is like summer.

When the flashlight is tilted, it is like winter.

2. Why did the outlines change?

The slant of the light hitting the paper changed.

What If

What would happen if the flashlight were always held straight down?

It would always be like summer.