

# *Alternative Pre- and Post-Assessment*

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## *Elementary Grades*

### **Lesson Summary**

Pre/post assessment of student knowledge and understanding of the Sun

### **Prior Knowledge & Skills**

Not applicable

### **Science Benchmarks & Standards**

Not applicable

**Teaching Time:** One 45-minute period

### **Materials per Student**

- Copy of the assessment
- Pencil/pen

### **Advanced Planning**

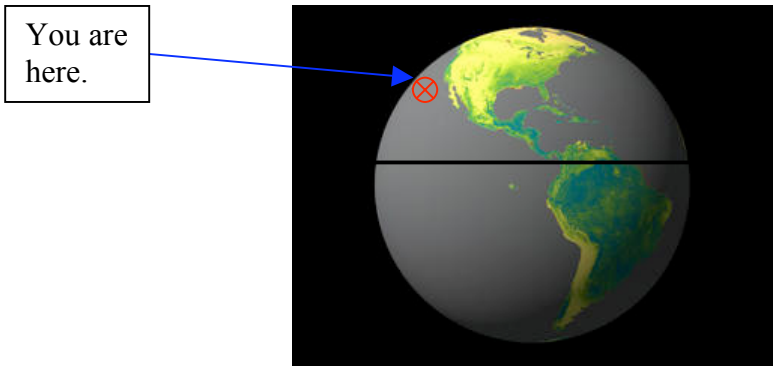
**Preparation Time:** 20 minutes

1. Review lesson plans
2. Copy student sheets

Name

## Pre- and Post-Assessment for Grades 3—5

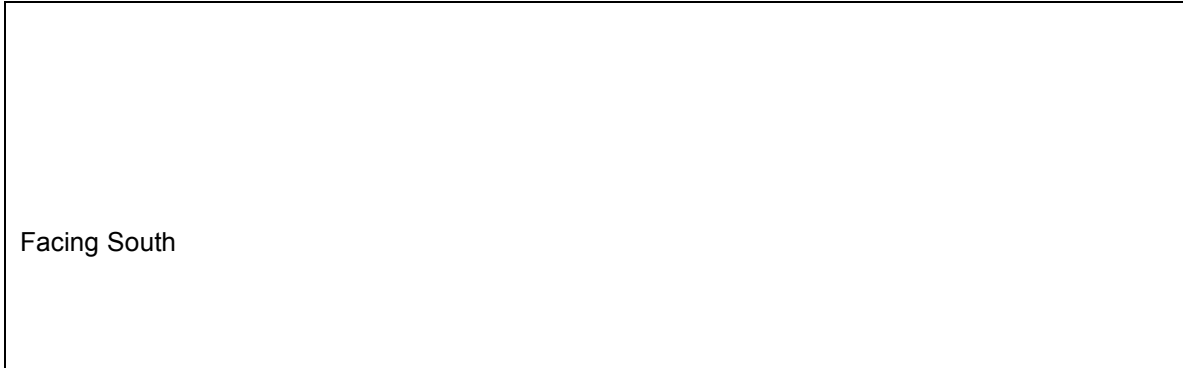
For the five questions that follow, pretend you have been stranded on a desert island with no watch or compass. The boat that you were on is part of a touring company and tours go past the south side of the island at 8 am and 3 pm. The boat sinks, and you are the only one to escape. It doesn't take you very long to swim to the island.



1. When you reach the island, it's 8:30 a.m. After you read your digital watch, it stops working. You want to know exactly which direction you are facing so that you can signal the next boat when it comes by at 3pm. Because you are really smart, you know that if you are facing south, east will be on the left. Draw a picture to show how you know which direction to face on the island. (hint: Think about what time it is and the location of the Sun).

Facing South

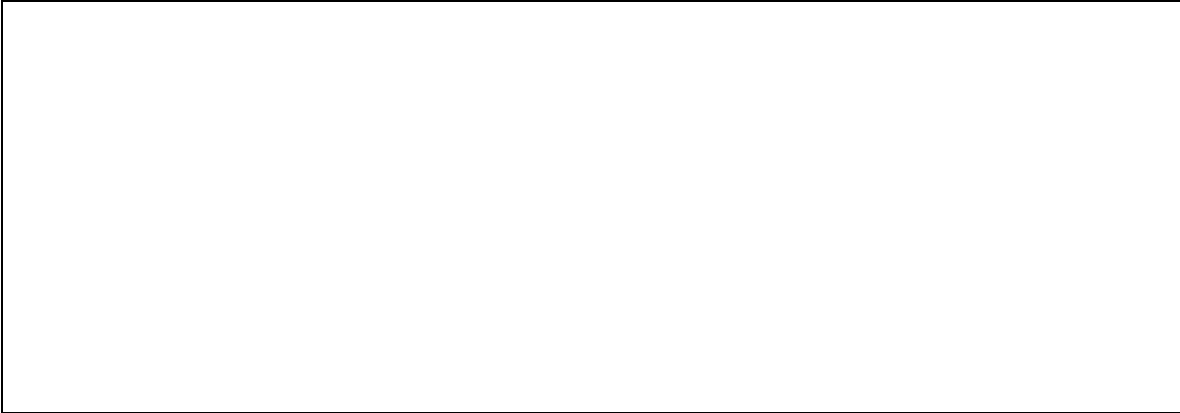
2. You start looking for food around the island, but you're worried... Without a watch, how will you know what time to go back to wait for the boat on the south side of the island? Using the hint from (1), draw a picture that shows what you will see when the boat comes.



3. Oh, no! The 3pm boat never comes by and you watch the Sun sink lower on the horizon and finally disappear. Is the Sun really moving, or is it the Earth? How do you know?

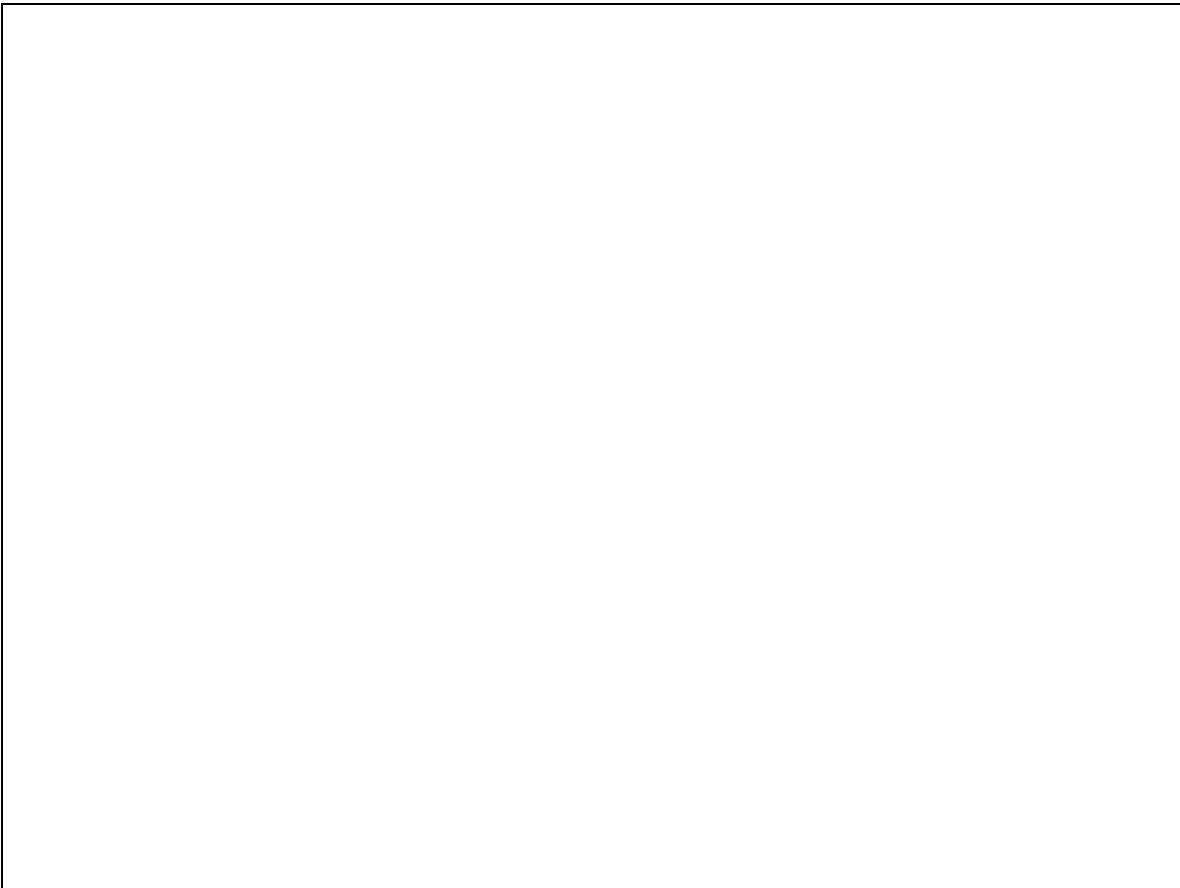
4. You remember that you were on the last tour boat of the year! The next tour will be in 9 months. A few days later, you discover a group of native people who want to help you. Luckily, they speak your language. You try to explain that the next boat will come in 9 months, but the people have never heard of months or years! The people do know a lot about astronomy, though. Try to explain what a year is to the native people:

5. Draw a picture of the Earth and the Sun today, and approximately where you think they will be in 9 months.



*Draw a picture*

Draw a detailed picture of what you think the Sun looks like up close. Label the picture as well as you can.



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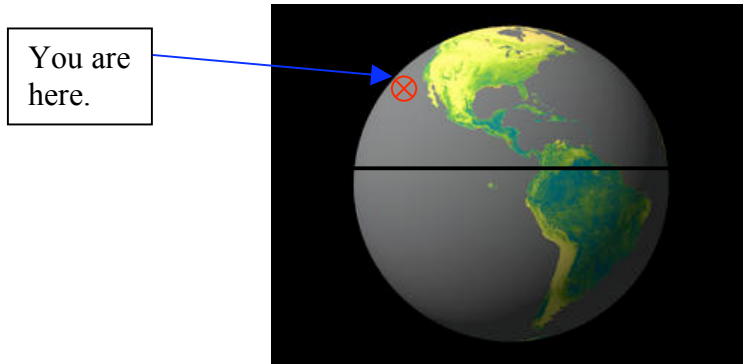
Fill in the blanks using the list below. Not every word will be used, but only use words one time.

Star Revolves Rotates Planet Sphere	Cube Moon Earth Sun Moves Jupiter
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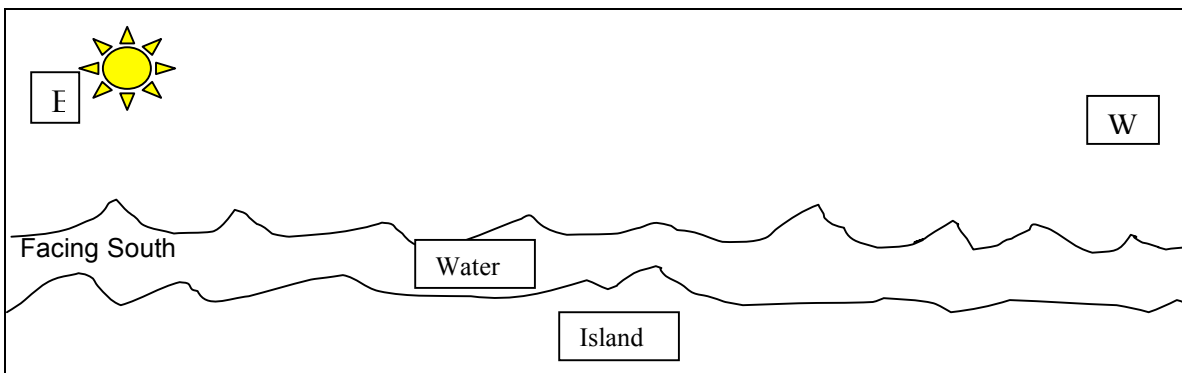
1. The Sun is our closest \_\_\_\_\_.
2. The Sun is shaped like a \_\_\_\_\_.
3. The Earth \_\_\_\_\_ around the Sun.
4. The Earth \_\_\_\_\_ on its axis.
5. The \_\_\_\_\_ revolves around the Earth.
6. The \_\_\_\_\_ is the largest object in our Solar System.

## Teacher's Answer Key

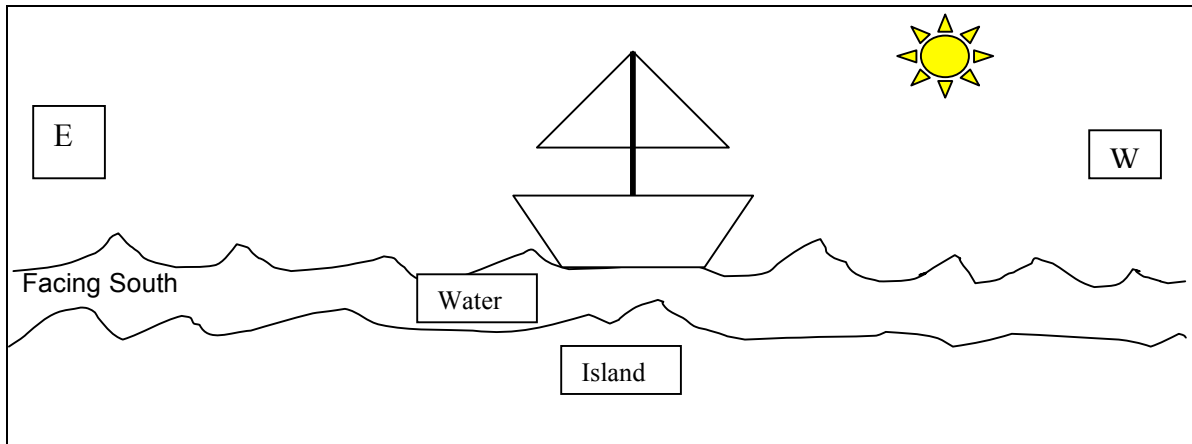
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2. You start looking for food around the island, but you're worried... Without a watch, how will you know what time to go back to wait for the boat on the south side of the island? Using the hint from (1), draw a picture that shows what you will see when the boat comes.



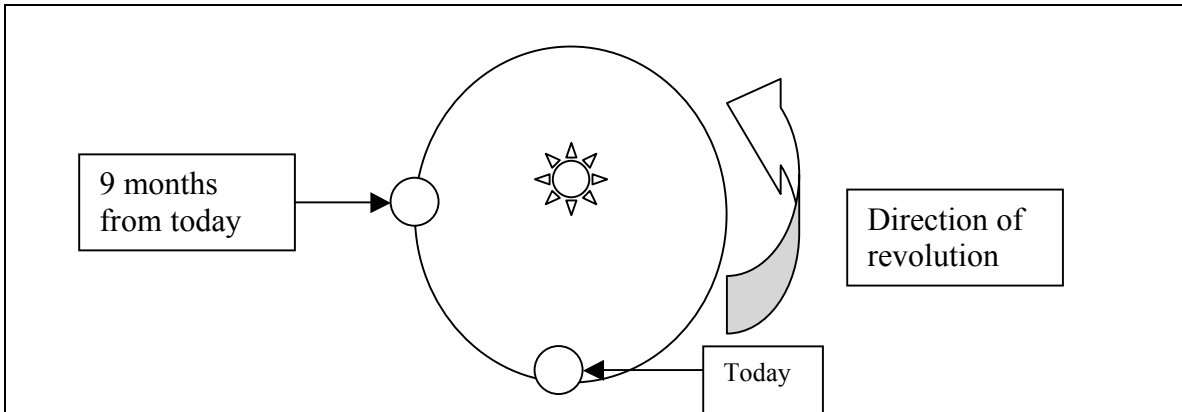
3. Oh, no! The 3pm boat never comes by and you watch the Sun sink lower on the horizon and finally disappear. Is the Sun really moving, or is it the Earth? How do you know?

*The Earth is moving because the Earth rotates on its axis, and that motion creates the illusion that the Sun is moving in the sky. The Sun is actually stationary in the sky, and the Earth is turning which is why the Sun rises and sets (entertain various answers that incorporate a rotation of the Earth).*

4. You remember that you were on the last tour boat of the year! The next tour will be in 9 months. A few days later, you discover a group of native people who want to help you. Luckily, they speak your language. You try to explain that the next boat will come in 9 months, but the people have never heard of months or years! The people do know a lot about astronomy, though. Try to explain what a year is to the native people:

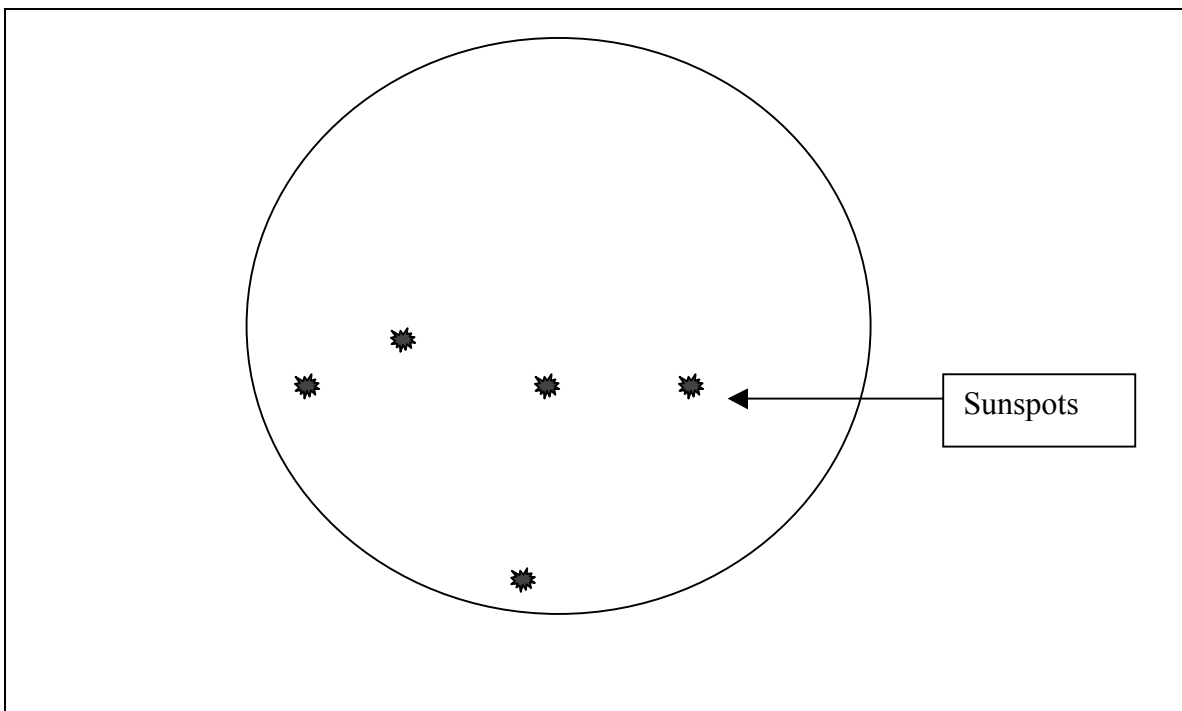
*A year is the amount of time it takes for the Earth to revolve around the Sun (entertain various answers that incorporate the Earth moving around the Sun).*

5. Draw a picture of the Earth and the Sun today, and approximately where you think they will be in 9 months. *The Earth will travel  $\frac{3}{4}$  of the way around the Sun in 9 months. 12 months = 1 year; 9 months / 12 months =  $\frac{3}{4}$ . Accept answers that demonstrate that the Earth has moved roughly  $\frac{3}{4}$  of the way around the Sun.*



*Draw a picture*

Draw a detailed picture of what you think the Sun looks like up close. Label the picture as well as you can. *At the end of the unit, students should understand that the Sun has spots that move across the surface of the Sun. There are other features of the Sun that are not covered in this unit.*





Fill in the blanks using the list below. Not every word will be used, but only use words one time.

Star	Cube
Revolves	Moon
Rotates	Earth
Planet	Sun
Sphere	Moves
	Jupiter

7. The Sun is our closest Star.
8. The Sun is shaped like a Sphere.
9. The Earth Revolves around the Sun.
10. The Earth Rotates on its axis.
11. The Moon revolves around the Earth.
12. The Sun is the largest object in our Solar System.