

# Sunspot Flip Book Journal

Elementary Grades

## Lesson Summary

Students use images of the Sun with sunspots to model movement of sunspots across the Sun's surface

## Prior Knowledge & Skills

Completed the lesson:

- *Making a Homemade Sunspot Viewer*

## AAAS Science Benchmarks

### **The Nature of Science★**

*Scientific Inquiry*

### **The Nature of Technology**

*Technology and Science*

## NSES Science Standards

### **Science as Inquiry★**

*Abilities to do Scientific Inquiry*

### **Physical Science★**

*Properties of Objects and Materials*

*Changes in the Earth and Sky*

### **Science and Technology**

*Understandings about science and technology*

### **History and Nature of Science**

*Science as a human endeavor*

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

## **Materials per Student**

- Student pages: *Sunspot Flip Book, Sunspot Flip Book Journal*
- Scissors
- Stapler

## **Advanced Planning**

**Preparation Time:** 10 minutes

1. Review lesson
2. Photocopy student pages

## **Classroom Resources:**

<http://sohowww.nascom.nasa.gov/sunspots/>

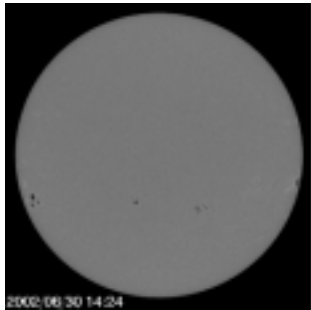
*Live from the Aurora*, pp. 13-14, NASA (2003)

[http://sunearth.gsfc.nasa.gov/sunearthday/2003/educators\\_guide2003/pdf/lfa\\_educators\\_guide.pdf](http://sunearth.gsfc.nasa.gov/sunearthday/2003/educators_guide2003/pdf/lfa_educators_guide.pdf)

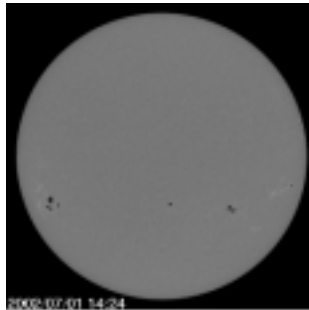
Name \_\_\_\_\_

**SUNSPOT FLIP BOOK**

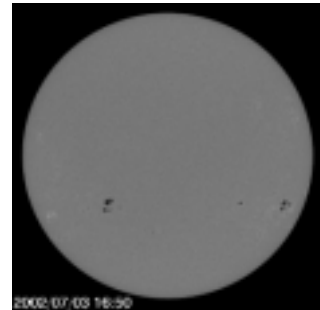
Cut out each picture. Arrange the pictures in order on top of each other. Staple into a flip book.



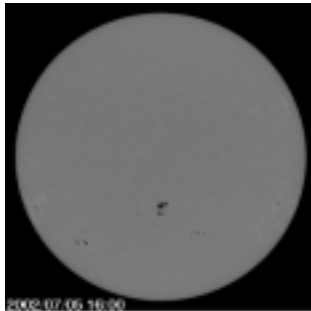
Picture 1



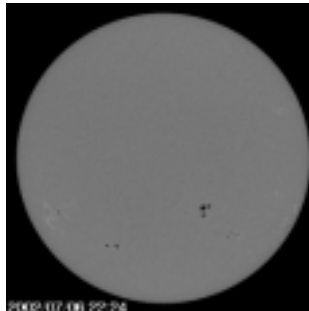
Picture 2



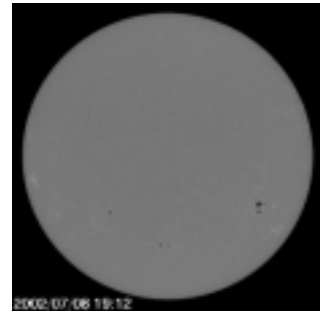
Picture 3



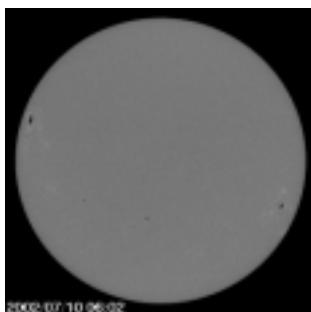
Picture 4



Picture 5



Picture 6



Picture 7



Picture 8



Picture 9

• • • **SUNSPOTS**

Name

## SUNSPOT Flip Book Journal

After making your sunspot flip book, flip the pages quickly. Do this several times. Observe the pictures of the Sun and the sunspots. Answer the following questions about your observations.

1. Does the Sun appear to change shape? What shape is it?
2. Do the sunspots appear to be moving?
3. Which direction are the sunspots moving—horizontal (across) or vertical (up and down)?
4. If the sunspots continue to follow the same pattern, draw what you think the next Sun and sunspots would look like.
5. Are all the sunspots the same shape? The same size?
6. Were any of your answers the same for the drawings that you made with the telescope and your answers using the flipbook? Why or Why not?

