

Title: Solar Observation with a Telescope  
Student Handout, Science

Name \_\_\_\_\_ Period \_\_\_\_

Objective: To safely observe the sun and learn about solar features using a solar filter and telescope.

**Safety Precautions:**

**Do not look directly at the sun without a solar filter.**

**Do not use damaged or old solar filters.**

**Do not leave the telescope unattended while observing the sun.**

**Do not touch the telescope or solar filter while observing the sun.**

**Stop observing if you experience eye discomfort or fatigue.**

Instructions:

1. Follow all safety instructions for solar viewing.
2. Set up the telescope with the solar filter attached.
3. Use the solar viewing guide to aim the telescope at the sun.
4. Look through the eyepiece and adjust the focus to see solar features.
5. Observe the sun for a few minutes at a time to avoid eye strain.
6. Record observations of solar features, such as sunspots or prominences.

Observations (write what you see)	Draw a picture of what you see
Sun	
Scoreboard	
Tree/Telephone pole	

7. Take a photo of the sun with a solar spot. Email yourself the photo.
8. Share observations with the class during the discussion.

Analysis Questions:

1. Print out your sun photo. Measure the diameter of the sun \_\_\_\_\_(cm)
2. Measure the diameter of the sunspot \_\_\_\_\_(cm)
3. If the diameter of the sun is 1,392,000 km, calculate how large the sunspot is.
  
4. How many earths could fit across it? Earth has a diameter of 12,742 km.
  
5. Extension: How many earths could fit inside it? Think volume.

Discussion Questions:

1. What did you observe through the telescope?
- 2.
3. What solar features did you identify?
- 4.
5. What did you learn about the importance of solar observation?
  
6. How can solar telescopes be used in scientific research?

Extension Activities:

Research and write a report on a specific solar feature observed through the telescope, such as sunspots or prominences.

Create a presentation on the importance of solar telescopes in scientific research.

Note: Proper supervision is required when using the telescope for solar observation. Do not attempt solar observation without proper safety precautions and training.