

Sun Seekers

Purpose:

What a great day! It was your first day of summer vacation and you spent the entire day outside. You soaked up some sunshine. You played a great game of Frisbee. But now, on your way home, you begin to feel the effects of the long day in the sun. Your eyes begin to ache. Your skin feels tight, dry, and painful. You may feel dizzy and tired. How can the Sun's energy cause changes in your body's systems? In this investigation, you will explore possible answers to this question.

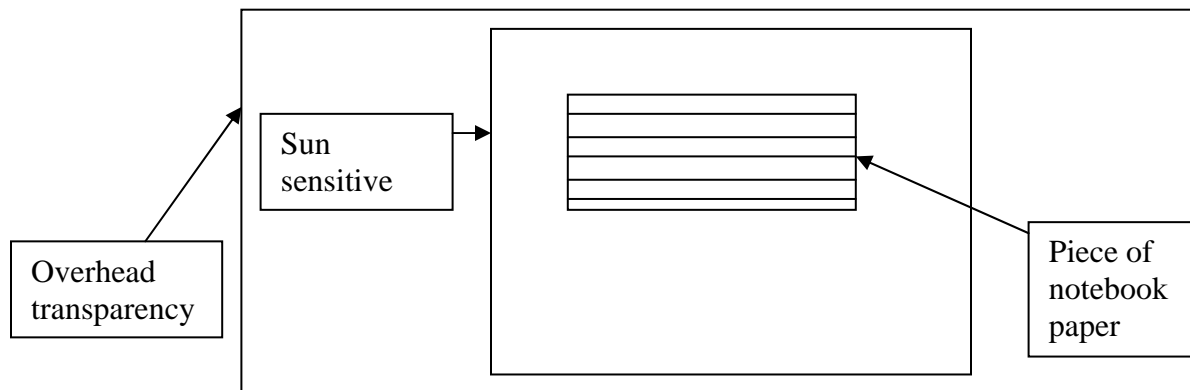
Materials:

- ☺ Sun sensitive paper
- ☺ 3 different SPF rated sunscreens
- ☺ Scotch tape
- ☺ Strip of overhead transparency sheet
- ☺ Clock or watch
- ☺ Water
- ☺ Blank paper
- ☺ Scrap notebook paper

Procedures:

Part A:

1. Make the sun detector as shown below in Figure 1.
→ You need to do these steps as quickly as possible to avoid exposing the sun-sensitive paper to any bright or direct sunlight.



- a. Tape 1 piece of sun-sensitive paper to your report page.
 - b. Tear a small scrap of paper from your notebook.
→ The scrap must be smaller in size than the sun-sensitive paper.
 - c. Place the scrap of notebook paper on top of the sun-sensitive paper and tape it down. Top with the piece of overhead transparency.
 - d. Conceal the sun detector in a book to protect it from the sun.
2. Take your sun detector outside and place it in direct sunlight when your teacher instructs you to do so.

→Record the time and note the weather conditions. You could use words and phrases like those you hear on the news, such as “partly cloudy” or “mostly sunny”.

3. Observe the sun detector for 5 minutes.
→Begin **Part B** while you are waiting and observing.
4. Develop the sun-sensitive paper by removing it from the blank sheet of paper and gently rinsing it in water.
→Before you rinse the paper, be sure that you remove the scrap of notebook paper and the overhead transparency sheet.
→Record your observations on a separate sheet of paper.

Part B:

5. Plan an experiment that will help you find out how 3 sunscreens with different SPF ratings can protect a person's skin from the Sun.
→Be sure that your experiment is a fair test of the sunscreens.
Remember to consider what variables you will need to control. For this test, you will not need to include the scrap paper in your sun detector. You will apply the sunscreen directly to the clear overhead projector sheet.
→Record your plans on a separate sheet of paper. (Be sure to include all of your steps.) Be prepared to show your teacher for approval.
6. Construct a data table for your experiment.
7. Perform your experiment on the day set aside for the experiment.
→Record the results in your data table.
→Tape your sun-sensitive paper to your report page.
8. Share your results with the rest of the class.
9. Turn in one written summary of your team's lab procedures, results, and conclusions with all team member's names on the report.

Day 2

10. Complete the Wrap Up on page 425 in the new books.
→ You are a dermatologist. A new patient has come to you with a severe sunburn. Write a summary that describes what you would advise the patient about skin care.

Part C:

11. Test the sunglasses your group brought in with the UV detector. Your group will design the experiment.
→ Record your results on your answer sheet in a data table designed by

your group.

12. Add to your letter to your patient and including new protective measures with evidence gathered from part C.

Lab Write-up

Name:

Period:

Part A:

2. Weather Conditions:

4.

Tape your sun sensitive paper here.

Part B:

5. Plan an experiment that will help you find out how 3 sunscreens with different SPF ratings can protect a person's skin from the Sun.

→Be sure that your experiment is a fair test of the sunscreens.

Remember to consider what variables you will need to control.

Step 1:

6. Construct a data table for your experiment.

7. Tape your sun-sensitive paper to your report page.

Tape your sun sensitive paper here.

Day 2

10. Complete the Wrap Up on page 425 in the new books.

→ You are a dermatologist. A new patient has come to you with a severe sunburn. Write a summary that describes what you would advise the patient about skin care.

Part B:

11. Test the sunglasses your group brought in with the UV detector.

→ Record your results on your answer sheet in a data table designed by your group.

12. Add to your letter to your patient and including new protective measures with evidence gathered from part C.
