

Name: _____

UV Detectives

WHICH MATERIAL PROTECTS THE BEST?

Problem

Which material blocks the most ultraviolet light: cloth, roofing shingle, UV protective lens, non-UV protective lens, SPF 4 sunscreen or SPF 45 sunblock?

Research

Answer the following True or False questions:

True/False Ultraviolet light has a shorter wavelength than visible light.

True/False Ultraviolet light and visible light are both forms of radiation.

True/False Since I can't see ultraviolet light, it can't hurt me.

True/False Ultraviolet light can easily pass through any material.

True/False Ultraviolet radiation can cause sunburns.

Identification of Variables

Identify the **Independent Variable**, **Dependent Variable**, **Constants** and **Control** of this experiment:

Independent Variable	
Dependent Variable	
Constants	
Control	

Hypothesis

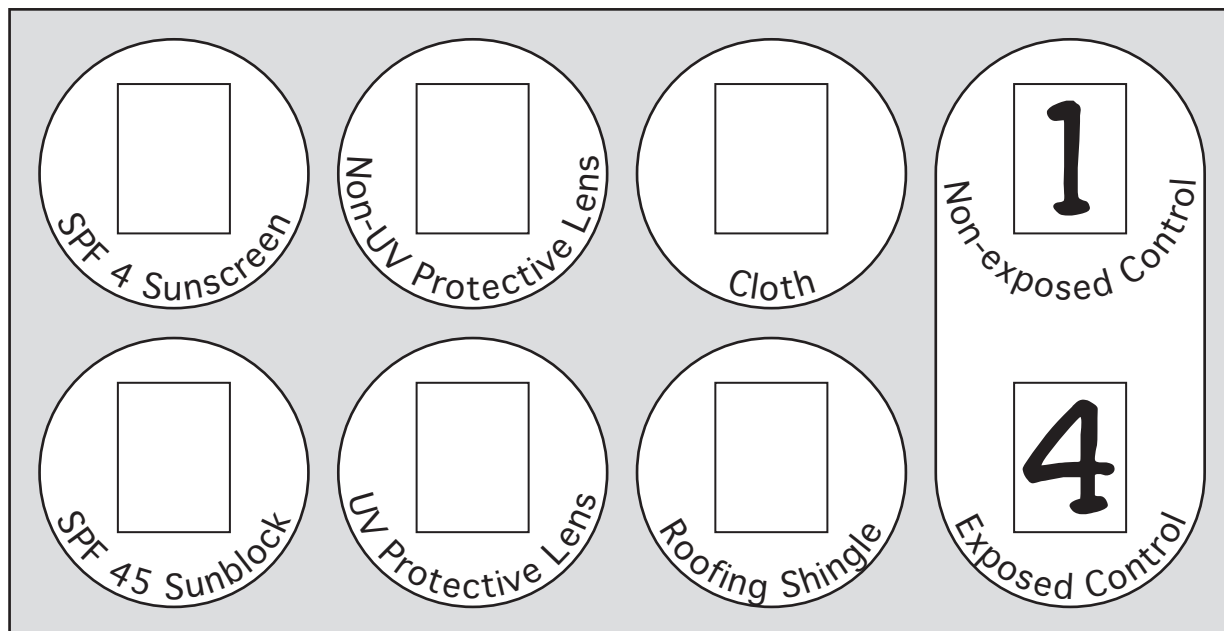
If cloth, roofing shingle, a UV protective lens, a non-UV protective lens, SPF 4 sunscreen and SPF 45 sunblock are exposed to ultraviolet light, then the _____ will block the most ultraviolet light.

*(cloth / roofing shingle / UV protective lens
non-UV protective lens / SPF 4 sunscreen / SPF 45 sunblock)*

Data Collection and Analysis

Directions: Place 10 ultraviolet sensitive beads into each test chamber and expose them to ultraviolet for **1 minute and 45 seconds**. On a scale of 1 to 4, quickly estimate and record how much the beads changed color on the chart below.

UV Detectives Data Chart



1 = No Change 2 = Little Change 3 = More Change 4 = Maximum Change

Conclusion

SPF 45 Sunblock APPEARS TO HAVE BLOCKED THE MOST ULTRAVIOLET LIGHT.

Questions to Think About

1. Which material or materials allowed the beads to change the most? The least?
2. What are some other materials that could protect you from ultraviolet radiation?
3. Why is the ozone layer important?
4. What is ultraviolet radiation?