

Name: _____

Date: _____

Light & Shadows

What Happens When Light Hits a Surface? (Absorbed, Reflected, or Refracted)



Discover: Refraction Action

Question

What happens when light passes through various materials?

Resources

Access the website links from the online course.

- [Bending Light \(website\)](#)
- [Refraction Action Worksheet](#)

Instructions - Step 1: Introduction

- 1 Go to the **Bending Light** website and click "Run Now" to start the simulation.
- 2 Under the "Intro" tab, you should see a laser with the "ray" option selected.
- 3 When you click the red button, you will see what happens when the laser passes from air into water.
- 4 Now, change the second material from "Water" to "Air" (by selecting it on the drop down menu in the lower half of the screen).
- 5 Now, change the second material to "Glass". Answer the questions on your **Refraction Action Worksheet** located on the following page, repeating any steps if necessary.

Instructions - Step 2: Prism Break

- 1 Click the "Prism Break" tab on the top of the screen to switch windows.
- 2 Answer the questions on the **Refraction Action Worksheet** as you change the settings as indicated.
- 3 Check your answers using the **Check Your Answers** on the following webpage in the course content.

Refraction Action Worksheet

Questions	Observations	Picture
	Need a Hint? Draw what you see and insert an image in the Picture column if you are not able to describe it in word.	To Insert an Image: Click on the pale grey space below, browse to the location of the file, click on the file name to select it, then, click Open.

Introduction

What happens when the laser is passing from air into air? Need a Hint? Is the laser beam still going straight?		
What happens when the laser passes from air into water? Need a Hint? Is the laser beam still going straight?		
Which material bends the light the most - water or glass?		

Prism Break

<p>What happens when you place the square prism in front of the laser?</p> <p>Need a Hint? Is the laser beam still going straight?</p>		
<p>How can you get the square prism to bend the light?</p> <p>Need a Hint? Try moving the prism around.</p>		
<p>What happens when you place a triangular prism in front of the laser?</p> <p>Need a Hint? Is the laser beam still going straight?</p>		
<p>Using the triangular prism, what happens when you change the environment to "glass"?</p> <p>Need a Hint? Is the laser beam still being bent?</p>		
<p>Click the "Reset All" button.</p> <p>Now, change the laser to "white light" by selecting it in the right hand box.</p> <p>What happens now with the triangular prism?</p> <p>Need a Hint? How is the effect different from a one-colour laser beam?</p>		