

Name: _____

Date: _____

● Optics Homework

 **Task 1**

Directions: Complete the sentences with terms from the word bank.

WORD BANK

Glass	Optics	Opaque	Paper	Shadow
Translucent	Transparent	Wood		

1. The science of light properties and behavior is called _____.
2. Matter that allows all light to pass through is _____. _____ is an example of this kind of matter.
3. Matter that allows some light to pass through is _____. _____ is an example of this kind of matter.
4. Matter that does not allow any light to pass through is _____. _____ is an example of this kind of matter.
5. An object that completely blocks light will produce a _____ where light is obstructed.

 **Task 2**

Compare and contrast a transparent, translucent and opaque material.

 **Task 3**

Draw diagrams that represent how light interacts with a transparent, translucent and opaque material.

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Wave Behavior Homework

Task 1

Directions: Describe the following wave behaviors.

Property	Definition
Reflection	
Refraction	
Diffraction	
Interference	

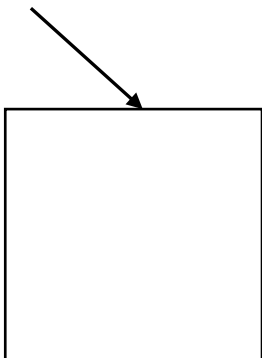
Task 2

Compare and contrast the bending of a wave with refraction and reflection.

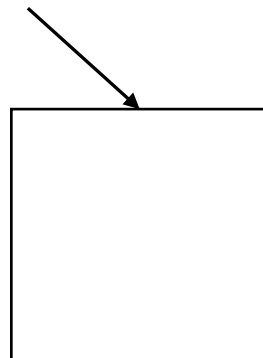
Task 3

Directions: Answer the following questions.

1. How would the wave behave if it reflected off the medium? Draw a picture of the wave.



2. How would the wave behave if it refracted in the medium? Draw a picture of the wave.



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◆ Doppler Effect (Light) Homework

 **Task 1**

Directions: Answer the following questions.

1. What is the Doppler Effect?

2. What happens to the frequency of light produced by an object that is moving towards you?

3. What happens to the frequency of light produced by an object that is moving away from you?

 **Task 2**

Compare and contrast redshift and blueshift. Explain why each phenomenon called so.

 **Task 3**

How is the Doppler Effect useful in studying distant stars in the universe? What would a blueshift or redshift of most distant stars tell us about the universe?
