
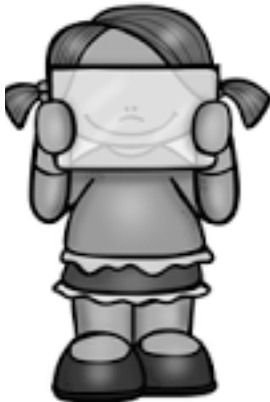

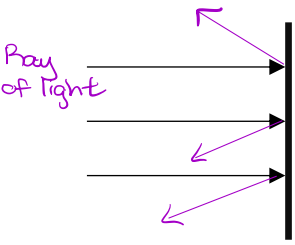
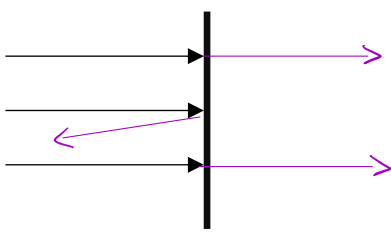
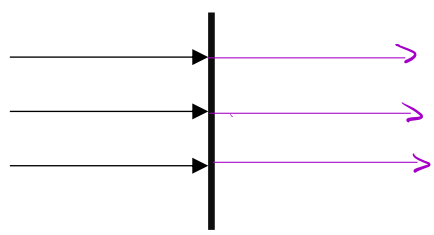


Optics 3

Name: Key
 Date:
 Block:

1. Opaque/Translucent/Transparent
2. Ray Model of Light
3. Shadows

Opaque/Translucent/Transparent

<p>An object that does not let any light pass through is called <u>opaque</u>.</p>	<p>An object that allows some light to pass through is called <u>translucent</u>.</p>	<p>An object that allows all light to pass through is called <u>transparent</u>.</p>
		
		

Can you think of other materials that are opaque, translucent and transparent?

- | | | |
|---|---|--|
| <p style="text-align: center;"><u>Opaque</u></p> <ul style="list-style-type: none"> - Table - Cardboard - Wall - Book - Ground | <p style="text-align: center;"><u>Translucent</u></p> <ul style="list-style-type: none"> - Fog / Steam . - Cloudy ice - Skin - Frost - Water
(because you can see a reflection) - Frosted glass | <p style="text-align: center;"><u>Transparent</u></p> <ul style="list-style-type: none"> - Clean water - Glass (window) - Glasses (glass or plastic) - Clear plastic |
|---|---|--|

(hits)

Three things happen when light strikes a material!

<u>Light may be...</u>	<u>Material</u>	<u>Examples:</u>
Absorbed	Opaque	1. Book 2. People
Scattered	Translucent	1. Tinted window 2. Skin
Transmitted	Transparent	1. Glass 2. Clear water

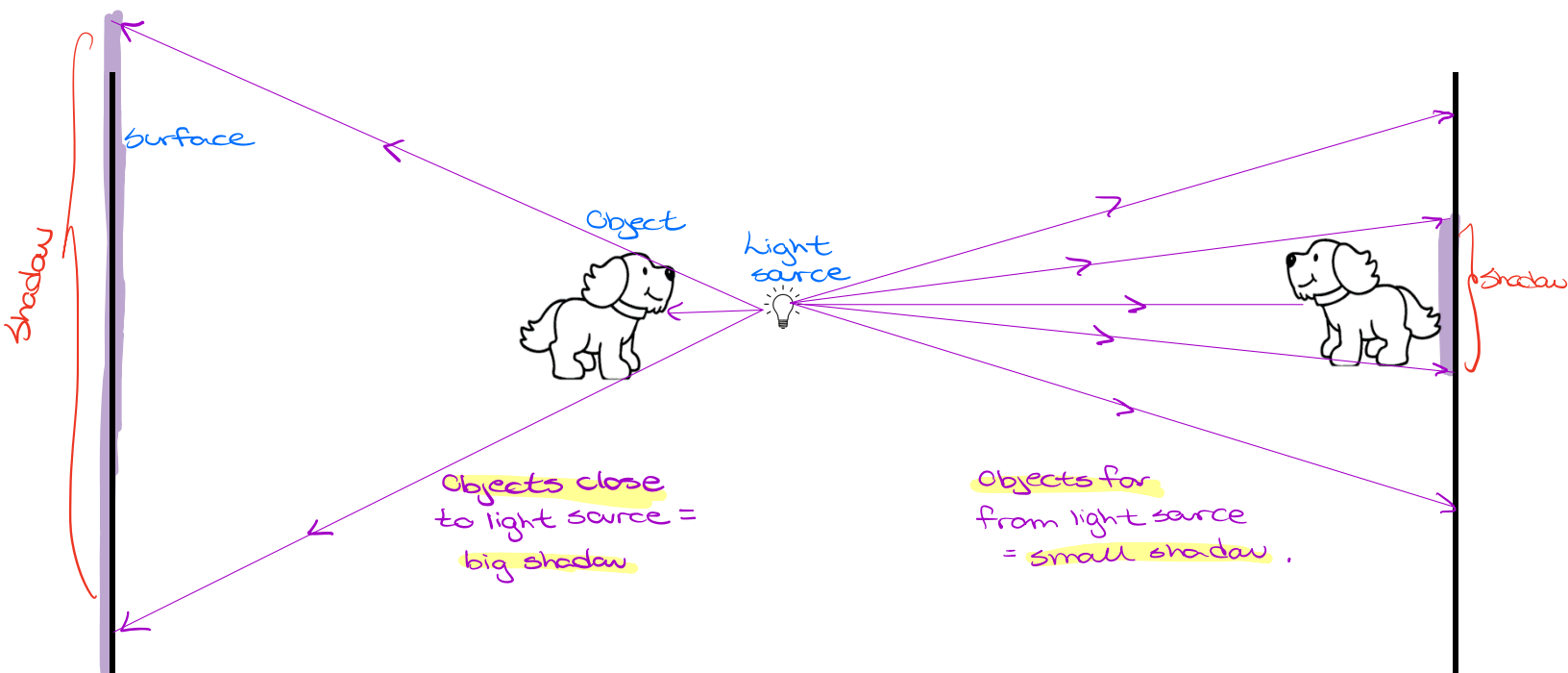
or reflected

Ray Model of Light

- Light is represented as a straight line, or rays that shows the direction the light wave is travelling.
- You can use this model to show what happens when light hits an object








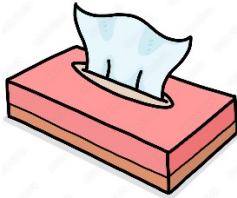

Shadows

- Light travels in straight lines from its source
- When light reaches a solid, the light cannot move through the object, which leaves an area of darkness that the light can't reach on the other side: a shadow!

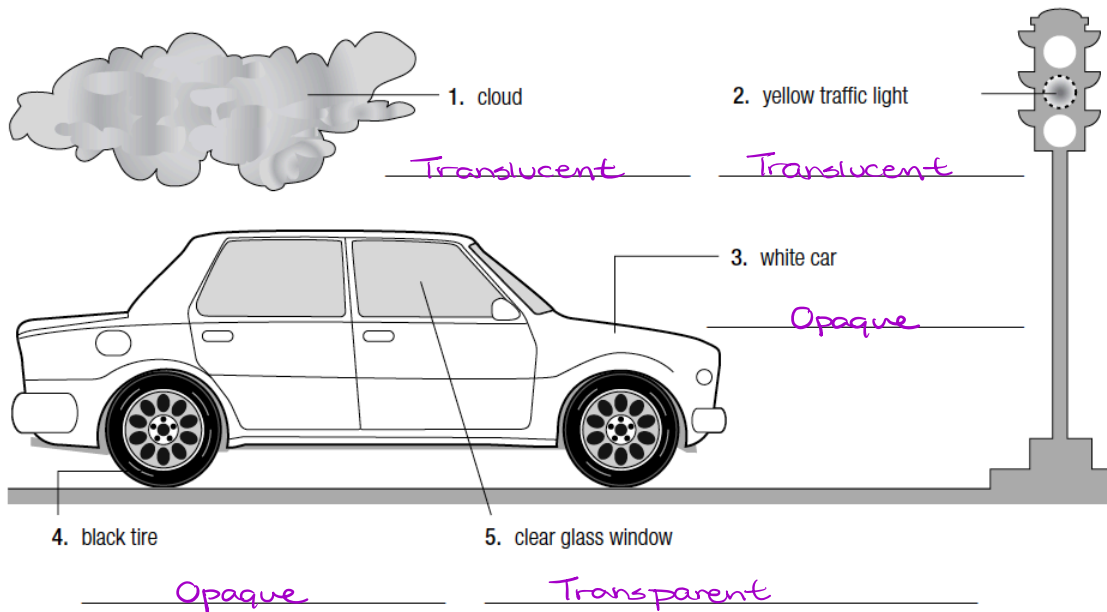


The closer the object to the light source, the larger the shadow.

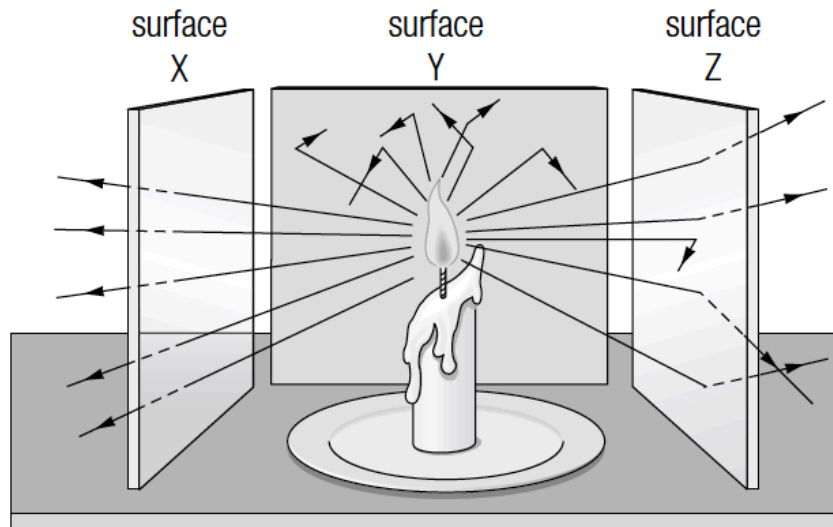
Practice: Label the following as opaque, transparent, or translucent

<p>Tin foil</p>  <p><i>Opaque</i></p>	<p>Wax paper</p>  <p><i>Translucent</i></p>	<p>Plastic wrap</p>  <p><i>Transparent</i></p>
<p>Frosted glass</p>  <p><i>Translucent</i></p>	<p>Dog</p>  <p><i>Opaque</i></p>	<p>Textured window</p>  <p><i>Translucent</i></p>
<p>Water</p>  <p><i>Transparent</i></p>	<p>Tissue</p>  <p><i>Translucent</i></p>	<p>Chair</p>  <p><i>Opaque</i></p>

State whether the following materials are opaque, translucent, or transparent.

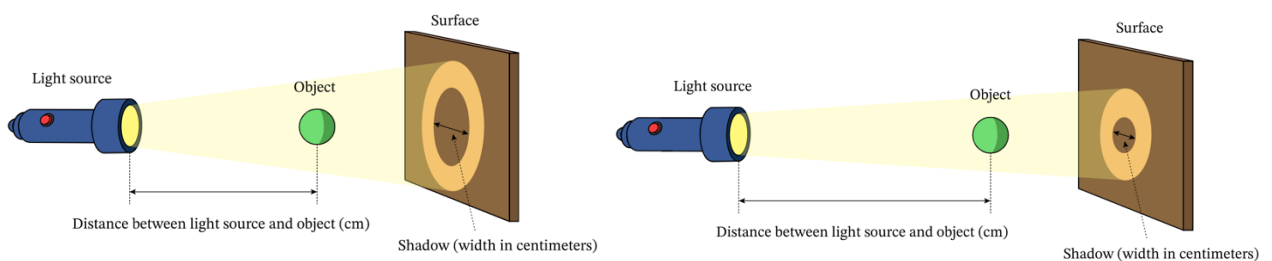


Consider the following diagram and fill in the blanks using the words from the word bank below.



Surface:	Descriptors:	Vocabulary
X	G, H	A. Absorbs light B. Reflects light C. Does not allow any light to pass through D. Scatters light E. Opaque F. Translucent G. Transparent H. Objects seen clearly on other side I. Objects not seen distinctly on other side J. Objects not viewable on other side
Y	A, B, C, E, J	
Z	D, F, I	

Consider the images below:



- Why does an opaque object cause a shadow? Opaque objects block the light rays from passing through
- If you move the light source farther away from the object, the shadow gets smaller.
- If you keep the light source and object in the same locations and move the surface farther away, the shadow gets bigger.