

## Reflection & Color (p. 560 – 565)

### I. Reflection Of Light

1. Every object reflects some light and absorbs some light.

Circle One : True False

2. Define the term light ray.

Light Ray – narrow beam of light that travels in a straight line

3. The path of light can be traced using light rays in geometrical drawings called :

ray diagrams.

4. What is the difference between regular reflection and diffuse reflection?

Regular = Reflection off a smooth, even surface (Mirrors, Still Pond)

Diffuse = Reflection off a rough surface (Bricks, Rippled Lake)

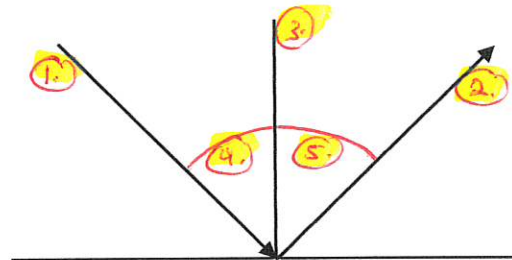
5. According to the Law of Reflection, the angle of incidence equals the angle of reflection.

Circle One : True False

(Ex) = Basketball against wall

6. Label the diagram with the following terms :

1. Incident Beam
2. Reflected Beam
3. Normal
4. Angle Of Incidence
5. Angle Of Reflection



### II. Mirrors

1. How far away does your reflection appear on a plane mirror?

As far away as you are from the mirror.

2. Define the term virtual image.

Virtual Image – an image from which light rays appear to diverge even though they are not actually focused there

3. No light waves pass through a virtual image.

Circle One : True False

4. How does a virtual image appear on a plane mirror?

1. Upright 2. Reversed 3. Same Size

Vader / Yoda Box

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Produce parallel light rays

Light waves in all directions

#### Uses

- Bathroom
- Rear view mirror
- Telescopes
- Kaleidoscopes
- Weight Room

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5. Differentiate between convex mirrors and concave mirrors.

Convex Mirror : Mirrors that curve outward

Concave Mirror : Mirrors that curve inward

6. Define the term real image.

Real Image – image that is formed by the intersection of light rays

- Uses
- 1. Security Mirrors
  - 2. Side Mirrors
  - 3. Sunglasses
  - 4. Christmas Bulbs

7. What type of image can form on a convex mirror? (Increase field of view)

Circle One :	Real	Virtual	<u>Diverge light rays</u>
Circle One :	Upright	Upside-down	
Circle One :	Smaller	Same Size	
		Larger	

- Uses
- ① Car Headlights
  - ② Flashlights
  - ③ Lighthouses
  - ④ Microscopes
  - ⑤ Dental Tools

8. Location of an object determines the type of concave mirror image formed. (Converge light rays)

Circle One : True      False

III. Seeing Colors

1. What needs to be present to see any object? light

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2. What produces white light?  
- Blending of all colors of visible light.

White vs. Black?

3. Why does a leaf appear green in color?  
- Green light reflected; All other colors absorbed

4. Why do green rose leaves appear black under red light and the rose petals are still red?  
- The red filter can only create red light.

5. What are the three (additive) primary & secondary colors of light?

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Phet Simulation

Primary	1. <u>Red</u>	Secondary	1. <u>Cyan (Green + Blue)</u>
	2. <u>Blue</u>		2. <u>Yellow (Red + Green)</u>
	3. <u>Green</u>		3. <u>Magenta (Red + Blue)</u>

6. List the (subtractive) primary colors of pigments.

1. Cyan (Green - Blue)    2. Magenta (Blue - Red)    3. Yellow

7. What colors are produced when primary colors are mixed using :

Light = White      Pigments = Black



Blue = (Cyan + Magenta); Green = (Cyan + Yellow); Red = (Yellow + Magenta)