

# B

- 1. Define Reflection:
- Claim:
- Reflection is when a wave meets a change in medium and bounces back into its original medium.
- Evidence: page 579

- 2. Define Refraction"
- Claim:
- Refraction is the bending of a wave as it crosses a boundary, changes medium at an angle and changes speed.
- Evidence: page 585

# B

3. What direction does a wave bend when it changes mediums and speeds up?

Claim:

If wave speed increases, then it bends away from the normal.

Evidence: page 585,587

4. What direction does a wave bend when it changes mediums and slows down?

Claim:

If wave speed decreases, then it bends toward from the normal.

Evidence: page 585,587

# B

- 5. What causes sound waves to refract in air? Do sound waves travel faster in hot air or cold air?
- Claim:
- Sound wave refract in air when there is uneven winds or when sound is traveling through air of uneven temperature.
- Sound waves travel faster in hot air and slower in cold air
- Evidence: page 586
- 6. Give 2 examples of refraction of light?
- Claim:
- Example 1: Ponds or swimming pools appear shallower than they actually are.
- Example 2: A pencil in a glass of water appears bent.
- Evidence: page 587

# B

- 7. What conditions cause a mirage? What is a mirage?
- Claim:
- A mirage is caused by refraction of light in earth's atmosphere due to the heated air.
- It is an optical illusion NOT hallucinations (i.e. the appearance of a sheet of water in a desert or on a hot road)
- Evidence: page 589
- 8. What is dispersion?
- Claim:
- Dispersion is the idea that when visible light is forced to bend, visible light will spread into different colors according to their frequency.
- (i.e. rainbows and prisms)
- Evidence: page 590.

# B

9. How are colors separated to form a rainbow? Why do the colors appear in a specific order?

Claim:

A rainbow forms through the dispersion of sunlight by a water droplet because each color has a different wavelength and refracted at a slightly different angle when they exit the water droplet than when they entered it.

FYI: red 42° angle, violet 40° angle.

Evidence: page 591-592