Properties of Light Review Sheet

1. What is the difference between artificial and natural light sources?

An artificial light source is designed or invented by humans. A natural light source is created by God.

2. Fill in the chart with examples of artificial and natural light sources that **EMIT** their own light:

<table>
<thead>
<tr>
<th>NATURAL</th>
<th>ARTIFICIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Sun</td>
<td>• Light bulbs</td>
</tr>
<tr>
<td>• Stars</td>
<td>• Flashlight</td>
</tr>
<tr>
<td>• Meteors</td>
<td>• Fireworks</td>
</tr>
<tr>
<td>• Firefly</td>
<td>• Glow bracelets</td>
</tr>
<tr>
<td>• Firefly</td>
<td>• Stoplights</td>
</tr>
<tr>
<td>• Magma</td>
<td>• Projector</td>
</tr>
<tr>
<td>• Magma</td>
<td>• Lamps</td>
</tr>
<tr>
<td>• Light</td>
<td>• Laser</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. What are some artificial and natural objects that **REFLECT** light?

<table>
<thead>
<tr>
<th>NATURAL</th>
<th>ARTIFICIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Minerals</td>
<td>• Mirrors</td>
</tr>
<tr>
<td>• Moon</td>
<td>• Safety reflectors</td>
</tr>
<tr>
<td>• (Almost everything in creation can reflect light – this is how we can see things)</td>
<td>• Glass</td>
</tr>
<tr>
<td></td>
<td>• Tinfoil</td>
</tr>
</tbody>
</table>

4. What are the six properties of light?

1. Light travels in a straight path.
2. Light can be reflected.
3. Light can be absorbed.
4. Light refracts (bends) when passing from one medium into another.
5. White light is made up of many colours.

6. Light diffracts (bends and spreads out) when passing through an opening.

5. **What causes a shadow?**

Light travels in a straight path. When the light hits a person or an object, the light will stop and be bounced off in another direction which means that light does not reach the area behind a person or object, leaving a shadow.

6. **Why was it hard to see your reflection after you crumpled up the aluminum foil?**

The aluminum foil was smooth before we crumpled it and smooth surfaces reflect better than rough surfaces. The crumpled aluminum foil had a rough surface and light was reflecting in too many different directions for us to see ourselves.

7. **Why should we wear white in the summer instead of black or dark clothing?**

We should not wear black shirts in the summer because black absorbs more light and makes us feel warmer. Wearing white will make us cooler.

8. **Why are there usually black shingles on the roofs of houses?**

Black absorbs the sunlight to help keep our houses warm.

9. **Why is refraction important? Give some examples.**

   - It is important for fishermen because they must realize that things under water are not exactly where they appear.
   - Refraction is used in making eye glasses (light hits the glass, then travels at a different speed into your eye).
   - Refraction is used in telescopes to make things far away seem closer.

10. **What causes a rainbow? What is the correct order of the colours in a rainbow?**
Rainbows appear when the sun is behind us shining on water droplets ahead of us. The light is refracted in the droplets in different amounts allowing us to see the colours of the rainbow.

The order of colours in the rainbow is: red, orange, yellow, green, blue, indigo, violet (ROY G. BIV).

11. What has amazed you most about the way God created light to behave? Write 2-3 sentences.

_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

Important Vocabulary:

**Absorb**: to take in or soak up instead of reflect

**Diffract**: Light bends and spreads out when passing through an opening

**Reflect**: to send or bounce back

**Refract**: as light passes from one medium into another, its speed and direction changes, causing the light rays to bend.

**Artificial / Invented Light Source**: a light source designed or invented by humans

**Natural / Created Light Source**: a light source made by God
**Emit**: to produce or send out light