



Properties of Light

❖ **Light travels in a straight line:** Light coming out from its source travels in a straight line. If we are behind a wall, we cannot see what is on the other side of the wall. Light can not bend over the wall to enable us to see the objects behind the wall.



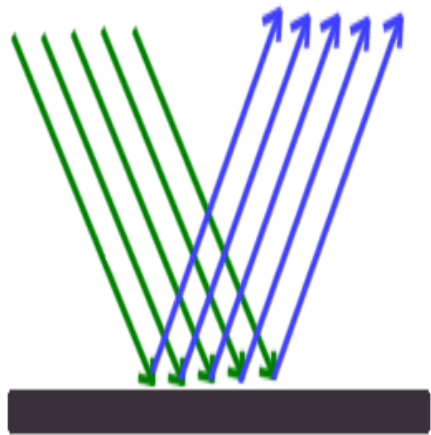
❖ **Light can be reflected from surfaces:**

Many objects around us are not sources of light, however we are able to see them because they reflect light into our eyes.

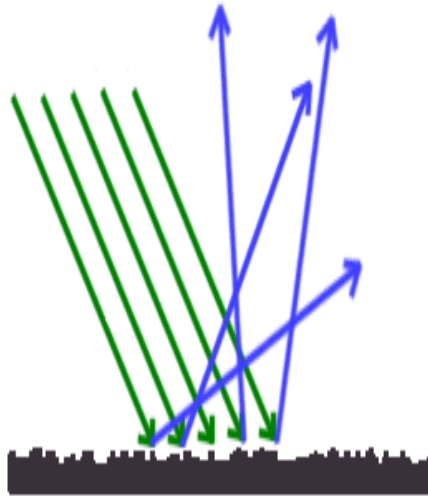
We are able to read a book when there is enough light bouncing off the pages of the book.



- Light reflected from different surfaces: Sources that can reflect light in the same direction appears shiny. A mirror is very shiny because it can reflect most light that falls on it the same direction.
- Reflection of light from a mirror:



specular reflection



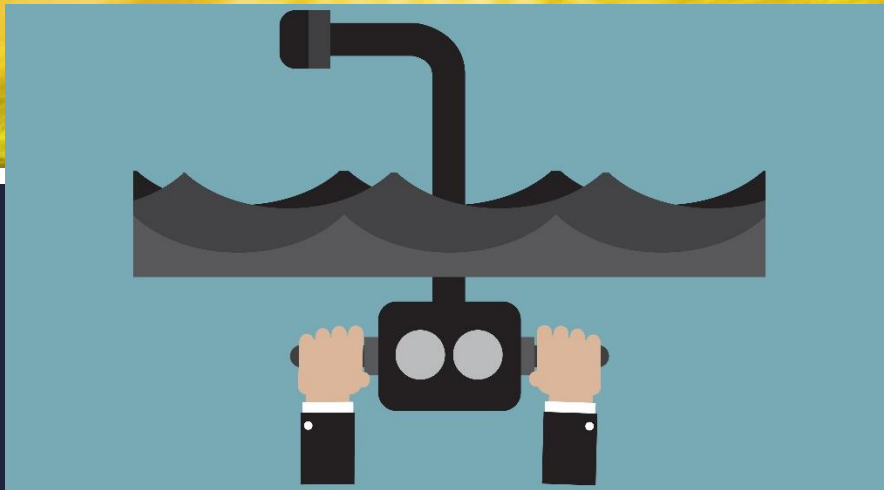
diffuse reflection



Using the mirror, Laura is able to see Pam standing behind her.

- Periscope: A periscope allow us to see objects that cannot be seen directly from where we are.

A periscope is an instrument that uses mirrors to reflect a light around corners. In a simple periscope, two mirrors reflect light so that we can see over walls and around corners.



- ❖ **Transparent, translucent and opaque materials.** We can see through some materials, but not others.

MATERIALS

TRANSPARENT

Glass and some plastics appear clear and allow light to pass through them. We can see objects clearly through these materials.

TRANSLUCENT

Some paper, plastic, cloth and frosted glass allow only some light to pass through them. We cannot see objects clearly through these materials.

OPAQUE

Wood, metal, some plastics, cardboard and clay are some materials that do not allow light to pass through them at all. We cannot see objects through these materials.

❖ **SHADOWS:** A shadow is formed because light travels in a straight line. It cannot bend to move around objects. So, a shadow always falls on the opposite side of a light source.

An object with straight edges will cast a shadow with straight edges. For example, a ruler will cast a shadow with straight edges.

An object that does not allow any light to pass through it casts a dark shadow. An object that blocks off some light casts a lighter shadow.



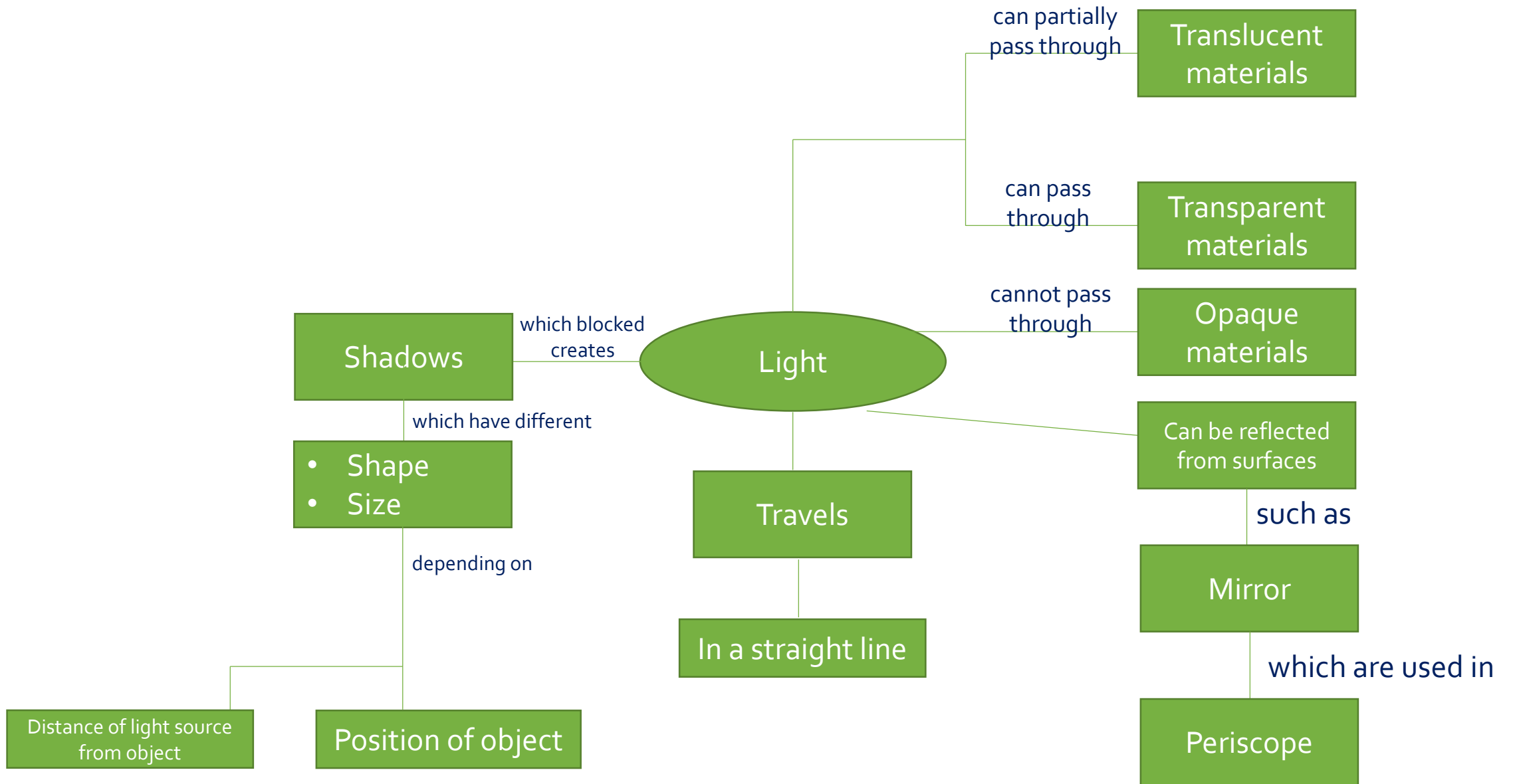
SHAPES AND SIZES OF SHADOWS

An object can cast shadows of different shapes and sizes, depending on the position of the object and the position of the light source

When an object is placed in different positions, it can form shadows of different shapes.

When the light source is closer to the object, the shadow of the object is bigger. When the light source is further from the object, the shadow of the object is smaller.







1. Light travels from a _____, and travels in a straight line.
2. We are able to see objects around us because they _____ light into our eyes.
3. More light can be reflected in the same direction from a _____ surface, which makes it appear shinier.
4. A _____ allows us to see objects behind us.
5. A _____ allows us to see objects that cannot be seen directly from where we are.
6. A simple _____ is a tube made up of two mirrors which reflect light and enables us to see over walls and around corners.
7. Glass and some plastics that allow light to pass through them are called _____ materials.
8. Paper, plastic, cloth and frosted glass that allow some light to pass through them are called _____ materials.
9. Wood, metal, some plastics, cardboard and clay that do not allow any light to pass through them are called _____ materials.
10. An object can cast shadows of different _____ and _____, depending on the position of the object and the position of the light source.