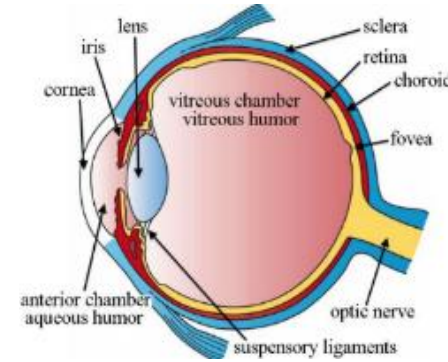


Year 6: Energy: Light and Reflection Knowledge Mat

Subject Specific Vocabulary

light ray	A narrow beam of light.
ray diagram	A scientific diagram to show the pathway of light.
light source	Where light comes from. Light, or illumination, is a form of energy that travels in waves, like sound. You can find different sources of light, such as a candle or the sun.
concave	Concave is a lens that curves inwards and reflects light differently, as a result.
convex	Convex, a lens that curves outwards and reflects light differently, as a result.
reflective	A surface that light bounces off.
opaque	A material that blocks or absorbs all light, preventing objects on the other side from being seen.
lens	A lens is a curved piece of glass or plastic designed to refract light in a specific way.
retina	The retina is at the back of your eye, and it has light-sensitive cells called rods and cones.
cornea	The cornea is thin, clear and covers your eye. It helps you see by focusing light as it enters the eye.
iris	By opening and closing the pupil, the iris can control the amount of light that enters the eye.
pupil	The pupil can be compared with the shutter of a camera. It is surrounded by the iris which is the coloured part of the eye.



Interesting facts about Light

- Light will travel in a completely straight line until it hits an object that will reflect it.
- Space does not have any light. We can see things in space due to light bouncing off of the objects in space.
- Light doesn't travel as fast when it has to pass through mediums that are different, such as air, water or glass.
- The light that we see from the Sun actually left the Sun ten minutes before we see it.
- Light can be controlled and produced in so many ways. A camera can control the amount of light that comes into the camera lens. We also use light in televisions, medical systems, copy machines, telescopes and satellites.

Key Knowledge

- Light travels in a straight line from a light source.
- Luminous objects are seen as a result of light directly entering the eye, whereas non-luminous objects reflect light into the eye.
- Shiny surfaces reflect light uniformly.
- When light is reflected off a surface, its direction changes.
- Mirrors and periscopes work using reflection of light on smooth surfaces.
- Shadows have the same shape as the objects that cast them as a result of light travelling in straight lines.
- There are relationships between light sources, objects and shadows.
- The distance between the object and the screen affects the size of the shadow.
- The angle of a reflected ray is affected by the angle of the incoming ray on a smooth surface.

Pre-knowledge (Y3)



- To know that light travels from a source (e.g. the Sun, light bulbs and torches).
- To know that light is needed to see things and that dark is the absence of light.
- To know that light from the Sun can be dangerous and how to protect their eyes.
- To know that all materials reflect light.
- To know that shadows are formed when the light from a light source is blocked by an opaque object.
- To know that shadows change as a result of different factors: - Changing the position of the light source. - Changing the distances between the light source, object and surface.
- To know that shadows change position and length throughout the day as the Sun changes position in the sky.

- Light is used by plants to convert the light into energy as their 'food'. The process is called 'photosynthesis' and converts carbon dioxide through the energy of the light.