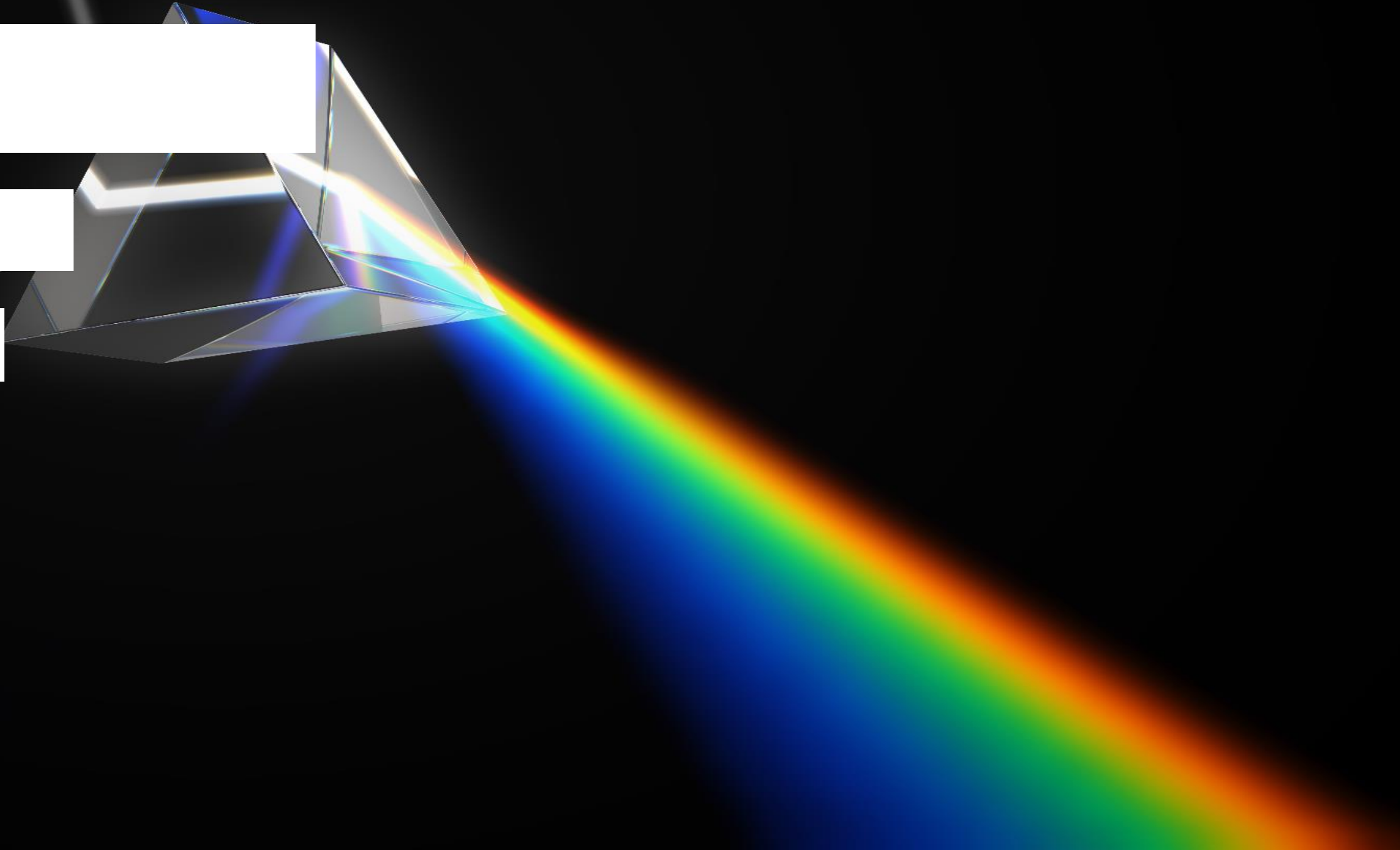


Light

YEAR 3

Summer 1



LESSON 6

What are some uses of light?



Do Now – Retrieval

1. How can we create white light?

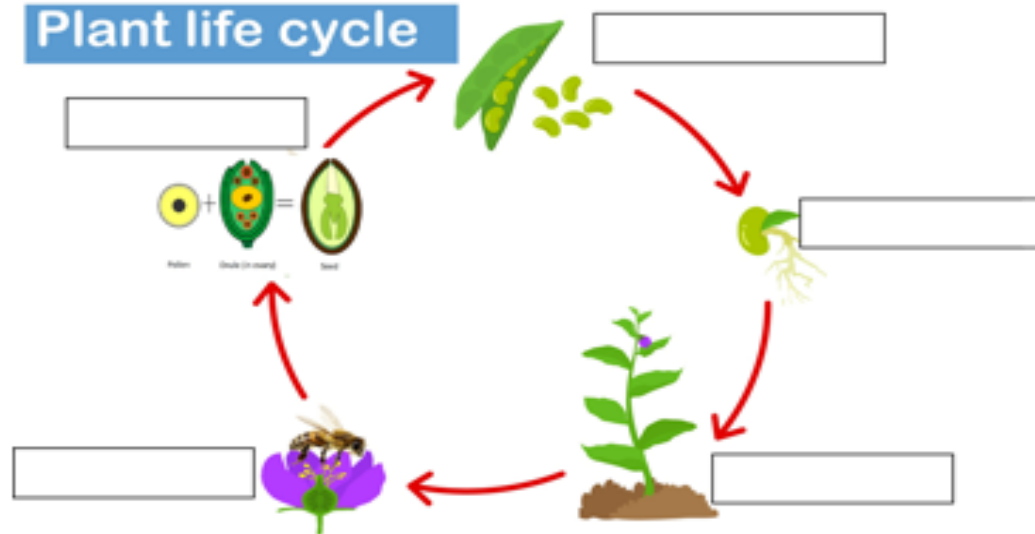
2. Fill in the names of each of the colours of the rainbow:

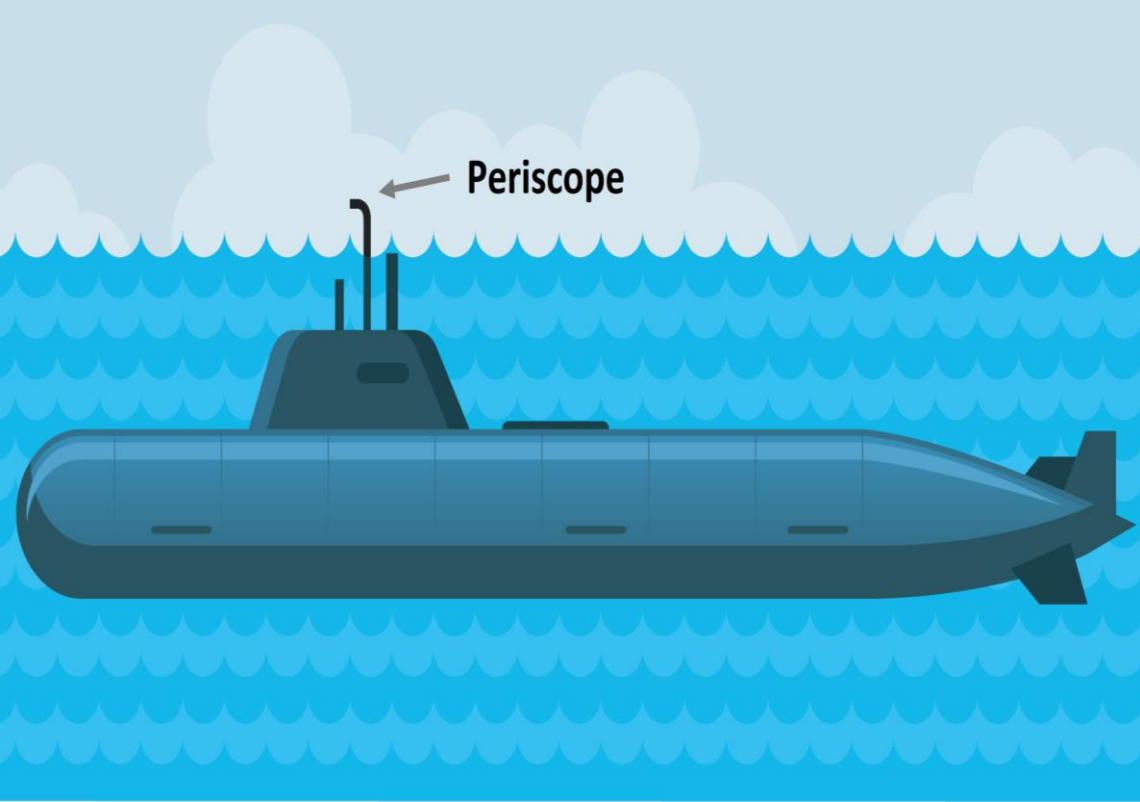


From a previous year- Add in the names of each part of a plant's life cycle on the diagram below:

Pollination / seed dispersal / flowering / germination / fertilisation

Plant life cycle







Write down as many examples of when light is useful as you can think of:

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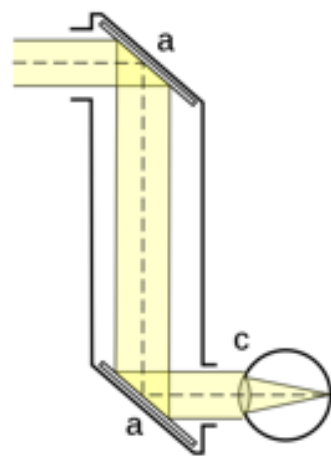


Read the following passage about periscopes

Periscopes are devices that can be used to see around objects that would normally be in the way of something we would like to see. For example, if someone would like to look around a wall or a corner in a corridor but does not want to be seen or they can't raise themselves up high enough to see over the object, a periscope can be used.



What is a periscope used for?

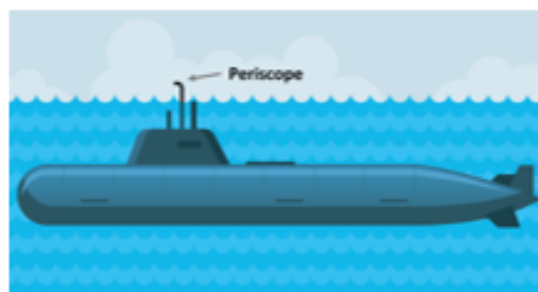


A periscope involves using a long tube with mirrors placed at the top and bottom so that light that has bounced off an object you want to see is reflected down the tube by the first mirror onto the second mirror and into the eye of the observer.



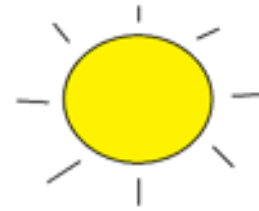
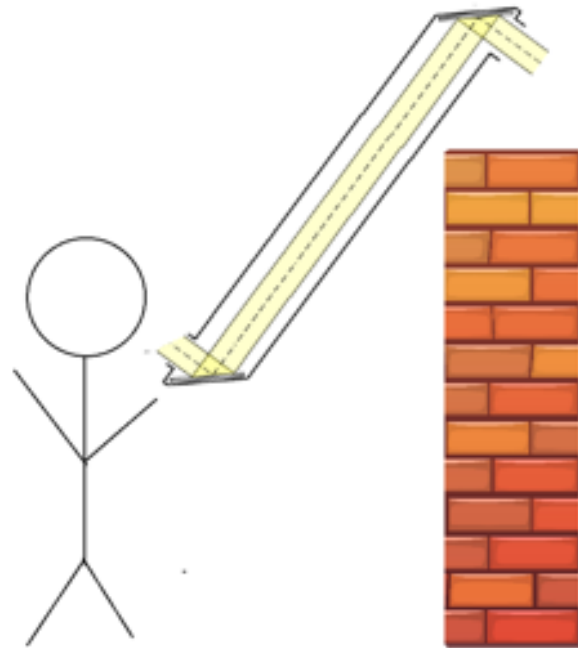
What do you need to make a periscope?

Periscopes are also very helpful for submarines because they enable the people inside the submarine to see what is happening about the surface of the water when the submarine is still inside the water. This can help as they may need to check for objects or enemies in battle that may cause the submarine harm should they come to the surface.





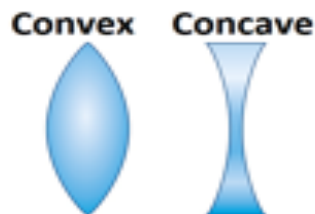
Draw arrows to show how light comes from the sun to the flower and eventually to the eyes of the stick figure below. Label the mirrors in the periscope:





Read the following passage about lenses

Lenses are curved objects made from transparent materials (such as glass or Perspex). They come in main two shapes – convex and concave.

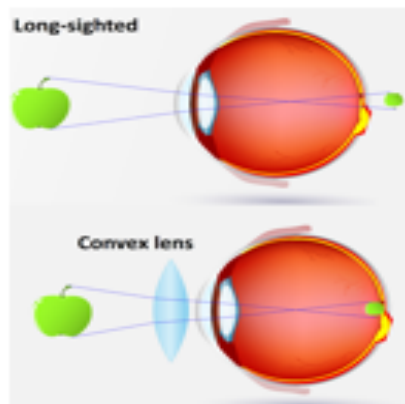


The way to remember which is which is that a concave lens **curves inwards** like the entrance to a cave.



How can we remember which shape of lens is which?

Convex lenses help focus light onto a single point. This is helpful for people who are long-sighted as the lens and cornea of their eyes is not strong enough to focus light on their own. Therefore long-sighted people need convex lenses in their glasses.

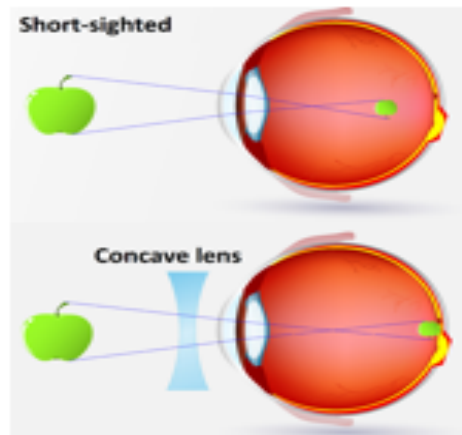


What do convex lenses do?



Which group of people do convex lenses benefit?

Concave lenses help spread light out. This is helpful for people who are short-sighted as the lens and cornea of their eyes are too strong which means they focus light too well for people to see properly. Therefore short-sighted people need concave lenses in their glasses.



What do concave lenses do?



Which group of people do concave lenses benefit?



Read the following passage about shadow theatre



Using the shadows of specially-shaped, opaque and translucent materials to create characters on a screen is known as shadow theatre. It is believed this form of theatre originally started in China or Indonesia and is still used to tell stories in many places across the world.



In which two countries is shadow believed to have been started?

To make theatre of this type, you simply need a light, a screen and shapes of each character that you

want use cut from a thin, opaque material. These characters are often mounted on sticks and held between the source of light and the screen.



What three things do you need to create a shadow theatre scene?

By moving the cut-out characters left, right, up or down, you simply move them in the relevant direction between the light and the screen. However, you can also make your characters bigger or smaller by moving them closer to the light (bigger) or further way from the light (smaller).



How can you make your characters:

- **bigger?** _____

- **smaller?** _____



Match the shape of the hand with the shadow that it will create:





Create a short shadow theatre story using the templates that your teacher has given you.

Can you include:

- Moving the characters up, down, left and right?
- Making the characters get bigger and smaller on the screen?