Science – lesson 4

This week, we’re going to be thinking about how light responds when it hits different materials, like water, glass and mirrors.

Use the following website to learn about refraction, reflection and dispersion of light. Can you solve the puzzles at the end? (They are very tricky, so ask for help on j2e if you need it!)

<https://www.primaryschoolscience.co.uk/Light-Lab/light-interactive-1.html>

**Key Terminology:**

● Dispersion – the separation of visible light into its constituent colours.

● Light – a visible form of energy or radiation.

● Medium – any type of material through which light can travel.

● Opaque – when a material absorbs any light that shines on it, so that none passes through, the object is said to be opaque.

● Prism – A transparent, triangular shaped block that will bend (refract) light passing through it in such a way that white light will be dispersed to produce a spectrum.

● Reflection – When light striking the surface of a shiny, smooth material and bounces off in a regular way, in one direction, it is reflected.

● Refraction – When light travels from air into a transparent, denser material such as water or glass, the light is forced to slow down. If the light strikes the surface at an angle, it is forced to bend. This bending is called refraction. If the light is then able to travel out of the dense material into the air, the light will speed up and refract again.

● Spectrum – Light travels as waves. The colour of light depends on its wavelength, each colour having a different wavelength. Red light has the longest wavelength of visible light and violet the shortest. White light is a mixture of all the colours of the visible spectrum (red, orange, green, blue, indigo and violet).

● Translucent – any material that allows only some light to pass through it.

● Transparent – any material that allows light to pass through it unchanged.

● Wavelength - the distance between two identical points along a wave.

Can you answer the questions?

1. Light travels slowest through water, air or glass? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. All the colours combine to make what colour light? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What is it called when a transparent object slows light down causing it to bend on entry and exit? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. Can you think of any examples of light being split into a spectrum in nature? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_