Science-

**Light:**

<https://www.bbc.co.uk/bitesize/topics/zbssgk7>

**Lesson 6: 25th May 2020**

**LO: To know that light from the sun can be dangerous and that there are ways we can protect our eyes**

**Questions:**

**Have you ever been told not to look at the sun?**

**Task 1: Is the sun good or bad?**

The statements below are all things that the sun does. For each statement, decide whether it is a good or bad thing.

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| 1. Causes sunburn | 1. Can cause skin cancer |
| 1. Helps people make vitamin D | 1. Provides warmth |
| 1. Causes wrinkles | 1. Is a source of light |
| 1. Damages the eyes | 1. Makes people feel happier |
| 1. Helps plants make food | |

**Key Information:** The sun emits (gives out) rays of light. We can't see all the types of light that come from the sun. The visible spectrum is the name for the light that we can see, and is made up of the colours of the rainbow:

**UV Light**

Another type of light that the sun emits is called UV light. UV light is invisible to humans, but we can see and feel its effects.

Some UV rays are blocked by the ozone layer, but most of the UV light from the sun reaches us on earth.

The amount of UV light that reaches us depends on different things. It is stronger at midday and in the summer. If there are no clouds there is more UV light. It also gets stronger nearer to the equator. The location can make a difference too - water, sand and snow all reflect UV light, making it stronger.

UV light causes sun burn, wrinkles and skin cancer, damages the eyes and can change the colour of some materials.

**Investigation:** **‘Seeing’ UV Light**

Set up an investigation to see the effects of UV light.

1. Cut out several shapes from black card.
2. Place them on a piece of coloured paper, and position them in a sunny spot for a week.
3. When you take the shapes off, you should see that the paper around the shapes has changed colour slightly.
4. The paper under the shapes will still look the same.
5. The UV light could not get to the paper under the shapes, so the paper under the shapes has not been damaged by the UV rays.

**Key Information:** The eye is made to let light in; this is how we see.Light enters the eye through the pupil.Look in the mirror. Can you identify your pupil? It looks like a black circle.

Look closely at your pupil in the mirror. Close your eyes for 30 seconds, then open them and look at your pupil. What do you notice?

The pupil grows bigger in the dark to allow more light to enter the eye and gets smaller in bright light.

If too much light comes through the pupil, it can damage the retina. It causes pain, so that you instantly close your eyes, or turn away from a bright light. It is very important that you never look directly at the sun, as the light can damage your eyes very quickly. Bright lights indoors can also damage your eyes, so you should never look at them, or shine lights into anyone's eyes.

**What can we use to:**

1. Protect our skin from the sun’s UV rays?
2. Protect our eyes from the sun’s UV rays?

**Key Information:** There are several things you should do to protect your eyes from the sun or other bright lights.

* You should wear sunglasses when out in the sun. Sunglasses have a UV rating to show how well they block UV rays. Make sure you get sunglasses with a high UV rating.
* Some sunglasses don't have a UV rating - these are really just toy sunglasses and don't protect your eyes. In fact, because they have dark lenses but no UV filter, the pupil opens wider, actually letting in more UV rays!
* Wrap around sunglasses are best, as they cover more of the eye.
* You can also wear a hat with a wide brim to shade you eyes.
* Make sure you have regular eye tests to check your eyes.
* Even if you are wearing sunglasses and a hat, you should still never look directly at the sun.

**Task:** Design a pair of sunglasses or a hat that will protect someone's eyes from the harmful effects of the sun. You should also advertise your sun protection item by creating a leaflet!

**Make sure you:**

1. Tell your customers why they need to buy your sunglasses or hat.
2. Explain about the effects of the sun, and how your sunglasses or hat can help protect against them.

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