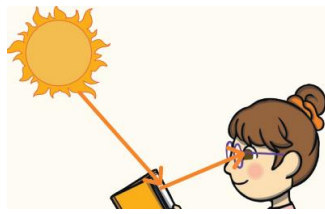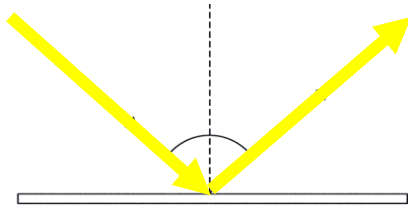## Section 1 - Science

Light waves travels in **straight lines.** When light hits an object, it is **reflected** and enters our eyes- this is how we see.

When light is reflected by a surface, it **changes direction**. It will **bounce off the surface** at the same angle that it hits it with (see the diagram).

Recap key vocabulary for this module:
- **Light** – a form of energy that travels from a light source
- **Light source** – an object that makes its own light
- **Reflect** – when light bounces off an object and changes direction
- **Shadow** – an area of darkness where an opaque object blocks the light
- **Transparent** – an object that light can travel through easily
- **Translucent** – an object that some light can travel through
- **Opaque** – an object that light cannot travel through

Section 2 - Science

Circuits must have a **power source** like a battery.

In a series circuit, **more cells** make **lights brighter** or buzzer sounds louder. This is because it increases the voltage. Therefore, the higher the voltage, the brighter the lamp or louder the buzzer.

A switch works because it breaks the circuit and stops the flow of electricity. In a complete circuit, electricity can flow through the components.
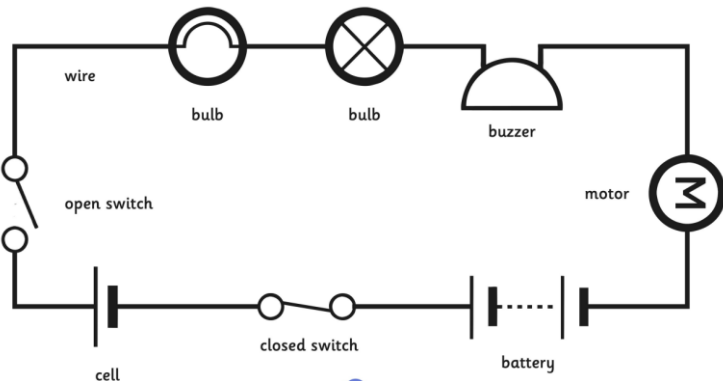
Section 3 – Design Technology

When designing a product, research will help create innovative (original) ideas. What might you research for? It is important to balance aesthetics and functionality when designing in order to meet cost and time constraints.

Aesthetics - they way a product looks. You might consider the shape, size, colour and pattern. What will make it look appealing?

Functionality – this is the way a product will work. The design was must work and meet the goal/needs of the customer.

When thinking about a product, a designer will need to think about the cost (budget) and how much time they have to make it. This will impact what they will end up designing. This is because **resources are limited and budgets must be adhered to when designing a product.**
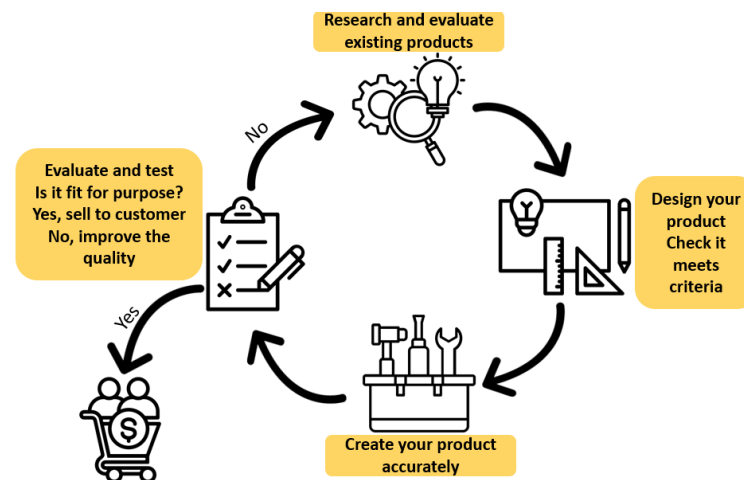
Section 4- Design Technology

Watch the design process

Testing and iterative processes will help to finish the product to a high standard of functionality and aesthetics.
After making a product, designers will re-evaluate and make the necessary changes to improve their product. They will then re-make their product.
What is the iterative process? To create a **quality** product, after evaluating and testing, designers will re-view and re-design their products.

Section 5- Design Technology

The sustainability of materials used to make a product are an important consideration when evaluating

Reuse – are the materials repurposed?

Reduce – have you limited the use of non-sustainable materials such as plastics?

Recycle – are there any recycled materials to help make your product more sustainable?

In year 5, you learnt it is also important when designing to consider the sustainability of your product and its impact on the environment.

Quality can be measured in terms of the manufacture of the product

Quality is an essential measure that ensures a product or service meets standards set by either the producers or the customers.
You will need to look at your final product and assess the manufacturing. Have you measured accurately? Are your joins secure?

Section 6- Science

This week, we will be working scientifically. You will be completing an investigation.

You will (just like a scientist) be asking questions, predicting, testing, collecting data and interpreting your results.

To help build accuracy and discover a *true* findings we use repeated readings. **Repeat readings increase the chance of collecting the correct data and identifying anomalous results.**

What are anomalous results?
An anomalous result, is a piece of data that doesn't fit the pattern of the other recorded measurements. Anomalous results should be removed and repeated.
Example, in the table, the 1.6 does not fit the readings of the other results in different tests. It is anomalous.

Independent Variable (Unit)	Dependent Variable (Unit)			
	Test 1	Test 2	Test 3	Average
0.0	0.0	0.0	0.0	0.0
1.0	0.7	0.5	0.5	0.6
2.0	1.6	1.1	1.1	1.3
3.0	1.7	1.8	1.9	1.8
4.0	2.5	2.5	2.3	2.4
5.0	3.1	3.1	2.9	3.0