

# Yr8 Resistant Materials (RM) KO Spring 1

## **Big Ideas:**

**Functionality:** *There is a need for products to work requiring complex decision making with function in mind.*

**Intervention of the natural and made worlds:** *People develop technologies and products to intervene in the natural and made worlds.*

## **Key Learning**

What metacognitive strategy will you use to remember this information? Use a variety of methods to support your recall of information. Record everything in your homework diary, rather than on this sheet.

## **Technical Knowledge**

- Solder is a metal alloy used to attach components
- A soldering iron is the tools use to attach the metal alloy to the electronic component
- Soldering is a process used for joining metal parts to form a mechanical or electrical bond
- Flux aids the flow of solder
- A net is a series of lines, angles and spaces that create a 3D shape when cut and folded

## **Designing**

- Trends influence the needs of the user
- User-centered design is a process where the users and their needs are the focus of each step of the design process

## **Making**

- Demonstrating accuracy and precision in construction improves the functionality and aesthetics of the product
- There are a variety of ways to join materials depending on the type of materials to be joined, the purpose of the join and the function of the product

## **Evaluating**

- Knowledge of a range of materials characteristics can be considered when evaluating ideas and products

After researching and before designing, a list of essential points called a Design Specification is put together. The list helps to focus the designers so the solutions they come up with meet the design brief and will be suitable for the client and their needs. A Design Specification uses the acronym **ACCESSFM** to ensure all points of the design solution are considered.

**Aesthetics** – the way the product will look and appeal to the customer

**Cost** – how much the material will cost to make and buy.

**Customer** – who is the end user and customer? What are their needs -design brief?

**Environment** – what impact will the product have on the environment? Does it use recycled or recyclable materials?

**Safety** – How will I make the product safe to use?

**Size** – What will be the overall size of the product?

**Function** - What does the product need to be able to do (what's its job)?

**Material** – What material will it be made from and what is the manufacturing process?

**Answer one or two questions for homework to show your developing understanding of the topic**

# Yr8 Resistant Materials (RM) KO Spring 1

1. What is the Health and Safety expectation in RM, and what is in place in the RM workshop to keep you and others safe?



Use this picture to support your answers.

2. Why is functionality more important than aesthetics? You may use the internet to research and explain your thinking.

3. Fill in the missing words from the selection below (write the sentences into your homework diary)

- A \_\_\_\_\_ makes or breaks a circuit and stops the flow of electricity.
- A \_\_\_\_\_ breaks the circuit if there is a fault and protects the user.
- A motor converts electricity into \_\_\_\_\_.
- \_\_\_\_\_ are small parts that perform distinct roles in a circuit.
- An electronic device is an item that operates by controlling the around a circuit.

Electric components / fuse / switch / flow of electrons / mechanical energy

4. Name these components and select their function from the options below.



Fuse/Motor/Resistor/Switch

Limits the flow of electronic current. Breaks the circuit if there is a fault, to protect the user. Converts electricity into mechanical energy. Makes or breaks an electric circuit.

5. What can we do as designers and makers which can offer solutions to our ever-changing climate? You may use the internet to research and explain your thinking.

- How is our climate in Britain changing?
- What problems do people face because of climate change?
- What solutions can we provide to these problems?

6. From your experience in lessons, draw and clearly annotate these tools. Describe how to use them to create a working USB fan and/or casing. You may use the internet to research and explain your thinking.

Soldering iron.

Solder.

Stanley Knife.