

# Design and Technology Knowledge Organiser

## Year Five and Six Ice Cream

### Design Brief

There are so many different types and varieties of different ice creams and flavours that currently exist within the global market. Your task is to create and maintain a business which produces and sells different, unique flavours of ice cream for a considerable product

| <u>Ingredient</u> | <u>Why it is used</u>  |
|-------------------|--|
| Cream             | Cream is excellent at trapping and holding air when the mixture is stirred and frozen, which gives the ice cream more body.  |
| Milk              | Milk acts as a lubricant between crystals, making even ice cream with larger crystals feel smooth on the tongue.   |
| Sugar             | Sugar gives ice cream a sweet taste, but that is not its most important role. The sugar controls the amount of ice formed during the freezing of the product. This ensures that the ice cream is soft enough to scoop and eat. |
| Vanilla           | It is a very important ice cream ingredient, not only in vanilla ice cream, but in many other flavours where it is used as a flavour enhancer, e.g. chocolate much improved by presence of vanilla.                            |



### Changes in Properties of Materials

- Solids and liquids can be changed from one state to another by heating or cooling.
- Heat melts a solid and turns it into a liquid. Cooling freezes a liquid into a solid.
- If ice (solid) is heated, it changes to water (liquid). This change is called melting.
- If water (liquid) is cooled, it changes to ice (solid). This change is called freezing. Water freezes at 0°C.
- Solids, liquids and gases are called **the three states of matter**.

### Solids

- Solids stay in one place and can be held.
- Solids keep their shape. They do not flow like liquids.
- Solids always take up the same amount of space. They do not spread out like gases.
- Solids can be cut or shaped.
- Even though they can be poured, sugar, salt and flour are all solids.