Changes Made by Melting and Freezing

PoS - demonstrate that dissolving, mixing and changes of state are reversible changes
NaG - pupils should explore reversible changes, including evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes.
WS - pupils should use simple models to describe scientific ideas

Melting and freezing can cause materials to change; some of these changes may be reversible, and some may not. Some materials can exist as both a solid and a liquid. Orange juice is a liquid but when frozen turns to ice and becomes a solid. Chocolate is a solid but when heated begins to melt and becomes a liquid. Look at the materials below and say what has caused them to change (melting or freezing) and whether this change is reversible. If the change has been caused by heating, colour the arrow red and if the change has been caused by cooling, colour the arrow blue.

Material	Change	Changes caused by:
1) Orange juice 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____
2) Butter 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____
3) Chocolate 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____
4) Water 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____
5) Ice 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____

6) Toffee 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____
7) Butter 		What has changed_____ _____. This change has been caused by _____ Is this change reversible?_____

When liquids are turned into a solid by cooling this is called freezing or solidifying.

Examples:

Water turning into ice when the temperature drops below 0°C is an example of **freezing**. Liquid lava turning into solid rock when it cools is called **solidifying**.

When a solid is turned into a liquid by heating this is called melting. Solids will melt at different temperatures. Solid ice will melt and turn to water at temperatures above 0°C, chocolate can melt in your hands (37°C) and most metals need extreme temperatures to make them melt.

Write the following examples of change into your book and say whether they occurred because of melting, freezing or solidifying.

a) Rocks in a volcano turning into lava. This is an example of_____ .

b) Lakes and canals turning into ice in the winter. This is an example of _____ .

c) Icicles turning into water on a warm day. This is an example of_____.

d) Rain turning into hailstones. This is an example of_____ .

e) Plastic dripping from a child's toy next to a bonfire. This is an example

of_____ .

f) A snowman turning back into water on a sunny day. This is an example

of_____ .