

FIRST AND SECOND – MATERIALS AND CHANGE

Teacher Guidelines:

- pp 123-128

Linkage:

- Living Things
- Properties and characteristics of materials
- Heat
- Environmental awareness and care

Integration:

- Geography: Natural Environments – Weather
- Oral Language Development – English and Gaeilge
- Visual Arts
- SPHE
- History
- Maths

HEATING AND COOLING

Content Objective:

EXPLORE THE EFFECTS OF HEATING AND COOLING ON A RANGE OF LIQUIDS AND SOLIDS

Water, coffee, syrup, blu-tack

Some suggested activities:

- Use poem “Chocolate” by Michael Rosen to introduce the topic. Discuss what happens to a chocolate button or ice cube in your hand? Why does it do this?
- How can you make it melt more quickly in your hand? Try different ways

Some suggested investigations:

- How can we find the warmest part of the classroom without using thermometer? Using ice-cubes, saucers etc.

Content Objective:**BECOME AWARE OF AND INVESTIGATE THE SUITABILITY OF DIFFERENT KINDS OF CLOTHES FOR VARIATIONS IN TEMPERATURE**

Recognise that some fabrics keep us warmer than others

Design and make or assemble an outfit for someone who is going on holiday to a very warm or cold place

Some suggested activities:

- Discuss what keeps us warm in winter. Discussion on different types of clothing. How do we keep our houses/schools/cars warm in winter?
- What keeps us cool in the summer? Discussion on different types of clothing. How do we keep our houses/schools/cars cool in summer?

Some suggested design and make:

- An outfit for a teddy going away to a hot/cold country.

Content Objective:**EXPLORE WAYS IN WHICH LIQUIDS AND SOLIDS MAY BE KEPT HOT OR COLD**

Effect of wrapping or covering using different materials, such as paper, fabrics, foil

Use of vacuum flasks

Some suggested activities:

- Discuss what would we cover our dinner with to keep it warm/how do you bring soup to school?
- Examine the range of flasks used by children and see which one keeps food/liquid hot longest.
- Fill yoghurt containers with water and place in the deep freeze. Remove them when frozen and wrap different materials around them. Predict which will be the best insulator and test them.
- What would we do if our fridge broke down? For example milk in cold water, food away from direct sunlight and shaded etc.
- Discussion on baby food/how do we cool down food that is too hot for babies/how do we heat it up?

Some suggested investigations:

- Which material will keep water hottest for longest. Test using various types of cups or cups wrapped in various materials and thermometers.

MIXING AND OTHER CHANGES

Content Objective:

BEGIN TO INVESTIGATE HOW MATERIALS MAY BE CHANGED BY MIXING

Mixing paints to make new colour

Mixing water and sugar or salt

Ingredients mixed in baking a cake or making biscuits

*Design and make different varieties of chocolate buns using mixing, heating or cooling
(e.g. cereal and chocolate buns)*

Some suggested activities:

- Look at how a range of materials may be changed by mixing. (Use water to mix with flour, sugar, oil, brown sugar, baking soda, sand, salt, etc).
- Observe and record what happens.
- Mixing paints
- Make papier mache.
- Make rice crispy buns/cornflake buns etc

Some suggested investigations:

- Will bread change more quickly in a cupboard, in a plastic bag or on a warm window sill?
- What happens to things in water? Exemplar 40 p.125 Teacher Guidelines
- Does stirring, temperature, size of particle etc affect the result?

Some suggested design and make:

- A new biscuit.
- Bubbles using water and a variety of washing up liquids

Content Objective

INVESTIGATE THE CHARACTERISTICS OF DIFFERENT MATERIALS WHEN WET AND DRY

Some suggested activities:

- Explore different materials when dry and when wet. Discuss the changes. (Use a range of common household materials, paper fabrics etc. Discuss their appearance)

Some suggested investigations:

- Which kitchen towel is the most absorbent?

- What will I use to mop up the water? Exemplar 41 p.126 Teacher Guidelines