

CHAPTER 3: Energy Long Ago

Aim

The aim of this chapter is to provide the children with opportunities to explore sources of energy that were used in the past for cooking.

Overview of Chapter

The chapter begins with a whole class discussion on cooking methods that were used in the past. This is followed by an investigation on the melting of chocolate. The final activity in this chapter explores different sources of energy that are used in whisking eggs.

Safety Note

Please note that some children may have particular food allergies. Activity 2 (melting chocolate) could be conducted as a teacher demonstration.

Working Scientifically Skills

While engaging with the different activities in this chapter, the children will be applying and developing the following working scientifically skills:

- Observing
- Predicting
- Investigating
- Estimating and measuring
- Recording and communicating

Primary Science Curriculum link

Strand unit: Heat; properties and characteristics of materials; materials and change

Lesson 1 – Cooking in the past and present

Resources

IWB 6 / PowerPoint 6: The story of cooking

Activity type: Discussion

Use **IWB 6 activities** to learn about cooking in the past and present.

If you do not have an IWB use **PowerPoint 6** to discuss cooking in the past and present.

Questions to promote discussion

Scenario 1: Hunter gatherer

- 1 What do you see in **picture 1**?
- 2 What is Guzzler doing?
- 3 How is he cooking the food? What is he using?
- 4 Is he using electricity?
- 5 Where is he getting the energy to cook the food?
- 6 Does he have a shelter over the fire? Why?

Scenario 2: Victorian

- 1 What do you see in **picture 2**?
- 2 Do you have a cooker like this in your house?
- 3 Does the cooker in the picture use electricity? Clue – where's the plug?
- 4 Where is Guzzler getting the energy to cook the food?

Note: when this oven was made there was no electricity – it ran on coal.

Scenario 3: 1960's

- 1 What do you see in **picture 3**?
- 2 Does your kitchen look like this?
- 3 Does this cooker use electricity?

Note: yes – it does use electricity.

Scenario 4: 21st Century

- 1 What do you see in **picture 4**?
- 2 Do you have a cooker like this in your house?
- 3 Does your kitchen look like this?
- 4 Do you think that this cooker uses electricity?

Note: yes – it does use electricity.

Activity: IWB 6 / PowerPoint 6: Children sequence the images from past to present.

Lesson 2 – Melting chocolate

Resources

Chocolate buttons (2 per child), 4 Saucers

Teacher note: In this investigation we use the melting of chocolate under different conditions to illustrate how energy (as heat) can change a material from a solid to a liquid.

Activity type: Observation

Give each child a chocolate button or a square of chocolate. Allow them time to carefully observe their piece of chocolate. They must try to make as many observations as possible about their piece of chocolate. Encourage the children to use different senses when making observations. Record their observations.

If there are no allergies let the children eat their piece of chocolate after the activity!

Activity type: Investigation

Investigation question: “Where will the chocolate melt the quickest?”

The children could then investigate in which location in the classroom a piece of chocolate will melt the quickest. Discuss with the children how they could find out where the chocolate will melt the quickest. One way to carry out this investigation is to leave a piece of chocolate on a saucer; on the teacher’s table; on the radiator; on a window sill under direct sunlight; and on the window ledge outside the classroom.

Before carrying out the investigation encourage the children to predict in which location they think the square of chocolate will melt the quickest/slowest. They must provide a reason for their predictions. When the chocolate has melted encourage the children to observe and discuss the changes that have occurred; e.g. it has melted, it is runny, it is not solid / hard, it is a liquid etc. Then discuss whether or not their predictions were correct .

Lesson 3 – Whisking eggs

Resources

Hand whisk, 2 eggs, clear bowls, electric mixer, kitchen paper, beaker, timer/stopwatch/clock

Activity type: Observation

Begin this activity by showing the children an egg. Encourage them to carefully observe (look at) the egg. They must try to make as many observations about the egg as they can. Remind them that scientists don’t just use one sense when they are observing (looking at) things. Record their observations.

Separate the yolk from the white of the egg. Place the white into a clear bowl. Encourage the children to make observations about the raw egg white in the bowl. Record their observations.

Activity type: Investigation

Investigation question: “Which way is quicker to whisk an egg white?”

Show the children the hand whisk and the electric whisk. Ask them to predict which mixer they think will whisk the egg faster? Encourage them to give reasons for their predictions.

Ask the children to think about how they could find out which way will be quicker (whisk an egg using a hand and an electric whisk), and what they could use to measure how long it takes (timer/ stop watch / clock).

The teacher then whisks an egg using the hand whisk and the electric mixer and times how long it takes for each.

Questions to promote discussion

- 1 Which way was quicker?
- 2 Why do you think the electric mixer was quicker than the hand whisk?
- 3 Did the hand-whisk have energy? Could it move on its own? Where did it get its energy from?
- 4 Where did the electric whisk get its energy?
- 5 Which way do you think was easier? Why?

Extension

Resources

Activities from the book **Guzzler Investigates Energy: Energy long ago and energy worldwide** (pages 11 - 16)

