



## Stage 9: Producing a balanced meal

### Learning Intentions:

- To prepare vegetables safely
- To produce a balanced meal
- To present food in an appealing way

### Stage overview:

In this stage, the children will plan and follow their chosen adapted recipe to make the balanced dish from their menu that they budgeted for and analysed in the Stage 5. This is a good opportunity for the children to revise and apply the food preparation techniques taught in previous STEMterprise projects to analyse how dishes are produced by professional chefs and recreate them for themselves.

The 'Adding a pinch of Maths with meaning' section provides ideas that could be included to revise many of the Key Stage 2 learning objectives in a practical way.

### Materials needed:

- Ingredients that the children bought with their shopping budgets
- Kitchen equipment (weighing scales, vegetable knives, peelers, chopping boards etc.)
- Recipes that the children have adapted

### Presentation notes:

Slide 2- 10: Revision of knife skills	<ul style="list-style-type: none"> <li>• Share the knife skill slides to revise the methods that have been covered in previous STEMterprise projects.</li> </ul>
Slide 11: Learning from the professionals	<ul style="list-style-type: none"> <li>• Share the photos of well-presented restaurant food and lead a discussion about how we can use the vegetable preparation techniques that the children have learnt in previous STEMterprise projects of to make our dish look appealing on the plate.</li> </ul>
Slide 12: Planning our dish	<ul style="list-style-type: none"> <li>• Give the children the opportunity to research how their chosen dish could be presented and sketch what they would like their dish to look like on a plate.</li> <li>• They should then make a plan for which vegetable preparation techniques they will need to use in order to achieve this.</li> </ul>
Slide 13: Food hygiene	<ul style="list-style-type: none"> <li>• Explain that before we can begin preparing our food products, we need to wash our hands thoroughly with soap and water, ties back long hair, roll up our sleeves and clean our work surfaces.</li> </ul>
Slide 14: Safety in the kitchen	<ul style="list-style-type: none"> <li>• Ask the children to look around the room and spot the potential hazards. E.g. sharp knives, peelers and graters; hot ovens, hobs, pans; slipping on spilt liquids/ food etc.</li> <li>• Take feedback and make sure the children's attention is drawn to the</li> </ul>

hazards before they begin preparing their products.

- Before the children start making their products, model how to safely prepare the vegetable ingredients. The knife skills slides could also be printed and laminated so the children can refer to them while they work.
- The children could take photographs of each step in the preparation of their dishes and then, in a later session, add images, music and narration to a video creator such as Splice, Qwik or iMovie to create their own video recipe guide.
- Once the dishes have been prepared and presented in an appealing way, ask the children to photograph them. These can be used in their menus and advertising campaigns.

## Adding a pinch of Maths with meaning!

### Measurement:

#### Understanding scales:

Interpreting scales is often an area of confusion for children so exposing them to as many different scales as possible, in as many contexts as possible, is important for teaching them the basic skills that they need to interpret them accurately when they are presented in a text book or test paper. Cooking is a great opportunity for this as there are so many different scales to interpret: weighing scales, thermometers, oven dials, measuring jugs etc. Take every opportunity to examine scales together during this activity!

- Start by looking at the numbers on the scale. What is the pattern? How much do they go up by each time? How can you work this out if you're not sure? (subtraction)
- If the difference between each number on the scale is, for example, 200 and there are 4 increments between each number, which operation can we use to work out how much each increment on the scale represents? (division)
- If we now know that each increment increases by 50, then we can work out how much any of the increments represent by counting on in 50s from the closest number on the scale.
- Using these steps to help the children understand the scale they are working with before they try to measure their ingredients will increase their accuracy as they can work out where on the scale they need to get to when pouring out their ingredients.

## Comparing between units of measure:

Weighing and measuring ingredients provides a useful context for revising conversion learning. This is a tricky concept that children find difficult to comprehend, but presenting it in a practical context gives it meaning and makes it memorable and can significantly improve children's understanding and ability to apply conversion methods back in the classroom.

- Taking measuring flour as an example, start by looking at how much a large bag of flour weighs (Use a 1kg bag).
- Use questioning to revise basic conversion facts e.g. grams are smaller than kilograms and there are 1000 grams in each kilogram. Write these facts on the board.
- Explain that if there are 1000 grams in a kilogram then grams must be 1000 times smaller than kilograms.
- Ask the children to look at the relationship and tell you whether there are more grams or kilograms? Why is the number of grams larger? Grams are a thousand times smaller than kilograms so we need a thousand times more of them to fill up the 1kg bag.
- Using the relationship we have just looked at, can the children tell you how many grams will be in 2kg?
- Ask the children to think about how we could use this relationship to tell us what to do if we wanted to convert 300g into kilograms.
- Grasping the key concept that grams are smaller than kilograms and therefore we need more of them will help children avoid confusing conversion rules back in the classroom and, for example, multiplying by 1000 instead of dividing when converting from kilograms to grams.
- To reinforce the size of a kilogram and avoid children making the common mistake of thinking that there are 100 grams in each kilogram, ask the children to measure out 100 grams of flour for themselves and hold it in their hands. Seeing how little flour they have measured out is a powerful way of helping them to visualise this back in the classroom.

## Fractions:

After the children have made their products and photographed them for their advertising campaigns, you could bring in some fractions revision before they sample their product.

### 1. Equivalent fractions

- Ask: if I wanted to share my product with one/three other person/ people, how many EQUAL pieces would I need to divide it into? Use questioning to revise the meaning of the denominator of a fraction= how many parts the whole has been divided into.
- Ask the children to divide their product in half. Ask how many pieces will I have if I divide my product into quarters? Cut one of the halves in half again to make quarters and place the quarter pieces on top of one of the half. How many quarters are equal to (the same amount as) one half?
- Revise how to write this as a fraction. Use questioning to revise the meaning of the numerator of a fraction. Ask the children to continue to explore equivalent fractions by cutting their quarters in half to make eighths and placing them on top of the half. How many eighths are equal to a half? Can they cut them in half again to work out how many sixteenths are equivalent to one half? Write each of the fractions down and ask the children to look for a pattern?
- This could be extended to practically explore equivalent fractions to a quarter etc. before teaching the abstract written method for calculating equivalent fractions. Once this understanding is secure, the children will be ready to compare and order fractions whose denominators are all multiples of the same number.
- You could extend this asking the children to divide their food product into key fractions and then write down the decimal and percentage equivalents as quickly as they can to revise and embed the relationships.

### 2. Comparing, ordering and calculating with fractions with the same denominator

- Ask: if I wanted to share my product with one/three other person/ people, how many EQUAL pieces will I need to divide it into? Use questioning to revise the meaning of the denominator of a fraction= how many parts the whole has been divided into.
- Ask the children to divide their product into eighths. How many pieces do you need to cut it into?

- Use questioning to revise the meaning of the numerator and ask the children to work them out physically using their food product e.g. how many eighths have you got on your plate? Can you hold up one eighth of your product? How many eighths will be left? Reinforce each question with a written number sentence on the board.
- Ask simple questions to embed the children's understanding of the meaning of the numerator and ask them to work them out physically using their food product e.g. if you eat three eighths of your product and your partner eats five eighths, who will have eaten more of the whole?
- This could be extended to cover adding and subtracting fractions with different denominators by letting the children physically complete the process of converting the fractions into equivalent fractions with the same denominator before performing the calculation.

### Links to the National Curriculum:

Design and technology	Cooking and nutrition	Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
Maths	Number: Fractions (including decimals and percentages)	<ul style="list-style-type: none"> <li>- Use common factors to simplify fractions</li> <li>- Compare and order fractions, including fractions <math>&gt; 1</math></li> <li>- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</li> <li>- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.</li> </ul>
	Measurement	<ul style="list-style-type: none"> <li>- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places</li> </ul>