

Design Technology – MTP cooking unit – spring term

Learning Ladders Covered:

- Y4C-D1 I can design a biscuit.
- Y4C-M1 I can follow a baking recipe.
- Y4C-M2 I can cook safely and follow basic hygiene rules.
- Y4C-M3 I can adapt a recipe.
- Y4C-E1 I can evaluate a recipe, considering: taste, smell, texture and appearance.
- Y4C-E2 I can evaluate and compare a range of products and suggest modifications.

Lesson 1	<u>LI: I can evaluate a product and consider the taste, smell, texture and appearance. (Y4C-E1 and Y4C-E2)</u>	Resources	Key vocab
	Lesson delivery: Explain that over the next four lessons, the children will work in groups, to carry out research to design a recipe and packaging for a pack of biscuits costing £1.99. The final designs will go before a panel of experts (maybe the headteacher, deputy head, school secretary, school council members) who will decide who has created a biscuit worthy of being on the shelves. Research (15 minutes) Provide a range of biscuits for children to taste, include a variety of flavours, shapes and styles, from digestives to chocolate bournons and pink wafers as well as biscuits with bits -chocolate chips and currants. Have the packaging for each of the biscuits on display. *Make sure that you check each packet of biscuits for any ingredients that could induce allergies. Children trial each biscuit, noting its taste, smell, texture, appearance, packaging and target audience using the Activity: <i>Biscuit taste testing template</i>. Discuss the need when working in groups to ensure that everyone is involved and has a fair chance at doing something – not just the washing up! Divide the children into groups or hand out roles to	Have ready • Six different types of biscuits for children to taste (roughly a third of each biscuit per child). • Plates for each table for the biscuit tasting. • Ingredients and equipment for making basic biscuits, check <i>Teacher resource: Basic biscuit recipe</i> (see Classroom resources). NB. Before carrying out practical activities involving tools, equipment and food, please check the schools' policies and guidance, including any dietary requirements within your class. Print <i>Activity: Biscuit taste testing template</i> (see Classroom resources) – one per pupil	• Design Criteria • Research • Texture • Innovative • Aesthetic • Measure • Cross-contamination • Creaming • Sieving • Rubbing method • Cooking rack

	tables for them to divide amongst themselves. Make (20 minutes) Ask children to tell their partner one piece of good practice regarding food and hygiene. Recap these as a class and scribe them on the board. For example: • What do the children need to do before they start to cook? (Wash surfaces, equipment and hands, ensure sleeves and hair are pulled back). • What should the children be careful of when cooking? (<i>The use of knives, cross-contamination of chopping boards, using electrical equipment with adult supervision</i>). Ask each group to ensure that they are familiar with the scales – understanding the units of measurement and the intervals. Provide children with a copy of the <i>Activity: Basic biscuit recipe</i> (see Classroom resources) that they will use to base their own biscuit recipe on. The children work in their groups to follow the recipe and make a batch of the biscuits – you may want each group to make half a batch, which will save room in the oven! *Write the group's name on the baking paper next to their biscuits. Explain the following techniques through each step of the recipe. Techniques: • Creaming When combining sugar and butter together, this is called creaming. By combining both ingredients together first, we can make sure that they are evenly distributed across the mixture, as the sugar will dissolve into the butter when whisking. It can also help the biscuits (or other food products that use this technique) rise in the oven by locking in air. • Sieving When using a sieve to sift flour, it removes any lump and allows air to become trapped between the particles and aerates (increases the volume of) the flour.	
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	• Rubbing method (<i>sometimes referred to as the rubbing-in method</i>) The rubbing method is a technique that uses the warmth of your fingertips to combine butter (or other fats) into the flour until it resembles a crumbly texture like breadcrumbs. • Cooling rack Using a cooling rack after baking food products containing butter (or other fats) gives the butter time to set and become hard instead of warm-hot and soft. If the butter (or fat) content is particularly high, the food product may remain softer in texture. Key questions What does it taste like? What ingredients/flavours can you taste? How does it feel when you put it into your mouth? Does it crumble or crack? What is its texture like? What does it remind you of? What colours are used? Show children a list of additional ingredients often used in biscuit recipes (which you have chosen in advance) such as: chocolate chips, sprinkles, spices, food colouring, food flavouring, chocolate chunks, dried fruits, cocoa powder, honey and oats. Whilst children taste the biscuits they made, ask them to consider what ingredients they would use in their own biscuit recipe.		
Lesson 2	<u>LI: I can follow a baking recipe. (Y4C-M1)</u> Lesson delivery: Remind children of their task from the last lesson. The children will be making their own biscuit by adding additional ingredients to the same basic biscuit dough that they made previously – refer to the <i>Activity: Basic biscuit recipe</i> (see Classroom resources) if necessary. After baking, each pupil will share their own biscuit with their group. Based on the results of this, each group will decide	Resources Have ready • Ingredients and equipment for making basic biscuits, check <i>Teacher resource: Basic biscuit recipe</i> (see Classroom resources). • Additional ingredients, such as: chocolate	Key vocab • Design Criteria • Research • Texture • Innovative • Aesthetic • Measure • Cross-contamination

	the ideas that they will take forward for their final biscuit. Remind children that this is about trying out lots of ideas – they shouldn't add the same ingredients as the people in their group. They should be original. Plan (10 minutes) The children prepare themselves, their cooking areas and ingredients. Children should be able to do this with little intervention from you, especially if you discuss the method and any additional ground rules to follow before they start. The groups need to plan so that everybody is involved and has a chance to do something – children should swap roles so that they have a different job to do than in the previous lesson. Make (20 minutes) The children make their basic mixture, following the same recipe as last lesson. The children split the mixture equally between them. Individually, children then add small amounts of additional ingredients to modify the recipe. It is good to have an adult hand out the extra ingredients as if it were a shop so that you can ration them. Biscuits should then be baked. Key questions • How will that change the taste/smell/texture/appearance? • Who would that appeal to? • What would you like to change? • How might that alter the biscuit? In their groups, each child should explain how they modified their recipe before letting the rest of their group trial it. Children should use the <i>Activity: Chef's adaptations tasting sheet</i> to evaluate each adaptation in turn. They should then discuss: what they did and didn't like; what would make a great biscuit and what would make a terrible one.	chips, sprinkles, spices, food colouring, food flavouring, chocolate chunks, dried fruits, cocoa powder, honey and oats. NB. Before carrying out practical activities involving tools, equipment and food, please check the schools' policies and guidance, including any dietary requirements within your class. Print <i>Activity: Chef's adaptations tasting sheet</i> (see Classroom resources) – one per pupil	
Lesson 3	<u>LI: I can work as a group to budget and design a biscuit for a certain price. (Y4C-D1)</u>	Resources Have ready	Key vocab • Design Criteria

	Lesson delivery: Remind the children of their task – to create a biscuit that will sell in shops for £1.99. Explain that, as in any business, nothing is free and the children will need to pay for all of their ingredients and a contribution to the building and utility costs. As a group, they will need to decide if they want to: • Make a biscuit for the lowest amount possible so they can make a lot of profit on each pack (you may need to explain profit – use the bar model) and take the risk that the biscuits may not sell because of the low quality. • Spend more on their biscuit – making it more attractive but reducing their profit margin. Tell children that a panel of judges will decide how many packs of biscuits they would buy from you to stock their supermarket. Give the children their <i>Activity: Chef's adaptations tasting sheet</i> from last lesson and the <i>Activity: Biscuit Taste Testing Template</i> from. Explain that the children must use all this information to design their final biscuit. Budgeting (15 minutes) In groups the children plan their biscuit recipe, ensuring it comes within the £1.99 budget. To do this they should work together to complete the <i>Activity: Budget sheet</i> provided – which sets out the costs the children will incur while making their biscuits: • Building hire and utilities at 60p. • Packaging materials at 10p. • 'Basic Biscuit Dough' recipe ingredients at 57p. This totals £1.27. The children have 72p to buy additional ingredients. You should price the extra ingredients appropriately. Share the additional ingredients available to buy (either as a list or lay them out like a shop for children to view portion sizes). You could determine their prices based on how much you want to encourage children to use them. For example, the healthier options could be cheaper. The children could work out their budget on paper or using a spreadsheet program, ensuring that their total costs come in at £1.99. Remind them that when noting down the additional ingredients they buy, they will need to multiply the amount by the quantity required. For example, mini marshmallows.	• <i>The Activity: Basic biscuit recipe</i> from Lesson 1 and 2 (see Classroom resources) to refer back to. • <i>Activity: Biscuit taste testing template</i> from • <i>Activity: Chef's adaptations tasting sheet</i> from • Cost of additional ingredients children will have access to (displayed), ie: chocolate chips, sprinkles, spices, food colouring, food flavouring, chocolate chunks, dried fruits, cocoa powder, honey. • Optional: access to computers for the use of Excel. NB. Before carrying out practical activities involving tools, equipment and food, please check the schools' policies and guidance, including any dietary requirements within your class. Print • <i>Activity: Budget Sheet</i> (one per group of children) enlarged to A3 <i>Activity: Final Design</i> (one per pupil) enlarged to A3	• Research • Texture • Innovative • Aesthetic • Measure • Cross-contamination • Diet • Processed • Packaging
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	may be 10p for a teaspoon and one group might want three teaspoonfuls so they would enter 'Three teaspoons of Marshmallow and 30p into the 'Cost' column'. Designing (15 minutes) Each pupil in the group completes a <i>Final Design</i> – an individual vision of how their group's biscuit would look on the shelves, covering: • Group name. • Product name and logo. • The unique selling point or special ingredients the biscuits contain (including quantities!). • A clear target audience. • What their packaging will look like (shape and colour). When judging occurs in the next lesson, one <i>Final Design</i> from the group will be presented with the group budget. Key questions • What will you include? • Will that add value? • How much will it cost? How will it change your biscuit's taste/smell/appearance?		
Lesson 4	<u>LI: I can cook safely and follow basic hygiene rules to make a biscuit while adapting a recipe.</u> <u>(Y4C-M2 and Y4C-M3)</u> Lesson delivery: Give children their <i>Activity: Budget sheet</i> from that specifies the ingredients and the quantities they intend to use. Check that everyone is clear as to the units of measurement on the scales and the quantities of both the basic and the additional ingredients of their final recipe. Arrange your food preparation area so that the base ingredients are mixed in a different area to the biscuit rolling, shaping or cutting space. Making the biscuits in these steps means that you can easily divide the groups into those mixing and those shaping. When children know their role, they can be given the rest of this time to prepare themselves, their cooking space and their ingredients. Baking (15 minutes) In groups, children will make one batch of their final recipe using a basic biscuit dough (<i>Activity: Basic biscuit recipe</i> – see Classroom	Resources Have ready • Children's <i>Activity: Final design and Activity: Budget sheet</i> from • Ingredients and equipment for making basic biscuits, check <i>Teacher resource: Basic biscuit recipe</i> (see Classroom resources). • Additional ingredients such as: chocolate chips, sprinkles, spices, food colouring, food flavouring, chocolate chunks, dried fruits, cocoa powder, honey and oats. • Optional:	Key vocab • Design Criteria • Research • Texture • Innovative • Aesthetic • Measure • Cross-contamination • Diet • Processed • Packaging

	resources) and any additional ingredients they decided on. Whilst as many groups as you can manage are making their biscuits (given space limitations and adult help) the other groups can be working on their 'Packaging' (see below). Children will also need time to wash up and make the food preparation area clean for the next group to use. Packaging (15 minutes) In order for their biscuits to be sold in the shops, children will need to make some packaging, referring to their <i>Activity: Final design</i> from to complete this. It is obviously tricky to replicate some cellophane packets, but boxes are perfect for designing onto. Give children either: • The <i>Activity: Cuboid net</i> printed onto A3 and a piece of A3 card to stick this onto, to then decorate, cut out and construct. • A biscuit box. They should draw around each face of the box so that they have panels that they can then decorate and finally glue onto the box. When all children in a group have completed their own packaging designs, they should confer and decide which they want to put forward to the judges. When the biscuits and package are ready they should be displayed as a final project ready for the judging panel, including their chosen <i>Activity: Final design</i> and <i>Activity: Budget sheet</i> from and, of course, the biscuits! Pre-pitch: Each group will present their plan to the class, explaining (very briefly) what they plan to do, what its cost will be and whom it is targeted at.	○ Empty biscuit boxes. ○ A3 card to stick the <i>Activity: Cuboid net</i> template onto to strengthen it. NB. Before carrying out practical activities involving tools, equipment and food, please check the schools' policies and guidance, including any dietary requirements within your class. Print <i>Activity: Cuboid net</i>, printed and enlarged to A3.	
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