Mendell Primary School

Aspire Challenge Achieve

Medium Term Plan Design Technology

Year Group: 4	Term: Summer 1 2022	Teacher: Hannah Jones	Subject lead: Catherine O'Neill Edwards	Overview: **Food - Healthy And Varied Diet** Design, make and evaluate a healthy, baked snack to sell at Sports Day. Cooking methods: baking, roasting.	Key End Points: By the end of this unit children will - Know what roasting and baking are - Understand food groups from the eat well plate - Create recipes that are healthy - Know to: wash hands, tie back hair, clean work surfaces before and after - Follow a recipe

Links to other learning:	Relevant Prior Learning:	Future Learning:	High Quality Text:	Risk Assessment:	Teacher CPD:
Science – changing state, nutrition PE & PSHE – keeping healthy	- Science – states of matter Y4 autumn term science - DT Y1&2 food technology	- Y6: poaching, steaming, boiling, simmering, stewing	*'Ella's Kitchen; The Big Baking Book'*	- All food technology lessons need a separate risk assessment completing. - Also see CLEAPSS for guidance: Username is: light, Password is: bulb22 - Allergies/ food limitations	Please read the DATA project on a page sheets attached at the end of this plan prior to teaching. - Lesson 1: distinguishes difference between roasting & baking

Learning Intention	Lesson Outline (Key Questions in colour)	Resources	Vocabulary	Lowest 20% Adaptations
I know what roasting and baking are	Before starting this unit ask for a donation of £2 from every child in order to purchase ingredients This is a DT lesson. In DT we design and make to solve problems In this unit of work we are going to be designing and making a baked, healthy snack that we can sell at sports day. Before we start planning our designs, there is some key information we need to know. We need to learn what baking and roasting are. Teach this to the children: What is baking? **Baking is a method of cooking food that uses dry heat.** Ensure the children understand this. Discuss how this means the absence of liquid so no water (like cooking pasta – this is called boiling, like cooking with oil such as an egg in oil in a pan – this is called frying). Baking is typically done in an oven, but can also be done in hot ashes, or on hot stone however, for us, we will be baking in an oven. What is roasting? **Roasting is a method of cooking food that uses dry heat.** The definition of roasting and baking are the same! How are roasting and baking different? Baking and roasting are the same – they both cook food using dry heat – usually in an oven. The difference depends on <u>what</u> you are cooking. If the food you are cooking food that has a 'solid structure', you will roast it. If you are cooking food that does not have a 'solid structure', you will bake it. They will both be cooked in an oven. Let's look at some examples of food before they are cooked and decide if they would be baked or roasted. Give out copies of 'Baking or roasting' for children to sort individually/pairs and share ideas and the go through as a class afterwards (these could also be stuck in books). Go through pictures on 'Baking or roasting' PowerPoint. Discuss answers for the following: - Vegetables *roast*	Baking or roasting PowerPoint Food triangle and eat well plate	**Baking** **Roasting** Cooking Technique Healthy Soft Holds its shape Firm Dry Heat Liquid solid	

- Cake *bake*
- Chicken *roast*
- Potatoes *
- Biscuits *bake*
- Donuts *bake*
- Fish **
- Sausages *roast*
- Scones *bake*

*Potatoes could be a good discussion point… roast potatoes are different to baked potatoes. The food is a solid structure so really, they are both being roasted.

**Fish is tricky because it holds its shape well – would we describe he texture as a solid texture? Raw fish is soft in texture. It isn't firm like a vegetable and is softer than meat. For this reason, chefs normally say they bake fish rather than roast it.

Discuss the difference between solid/liquid linking back to science… raw biscuits (raw meaning uncooked) and raw scones are not technically a liquid – they are a malleable or 'soft' solid. So when we discuss the definition of roasting and baking we won't use the phrase solid or liquid. To explain clearly, we will use soft and 'holds its shape'

What is baking? **Baking is cooking soft food using dry heat**

What is roasting? **Roasting is cooking food that holds its shape using dry heat**

Repeat 3 times in different voices and throughout lesson

Ask children to stick the pictures from 'Baking or roasting' in their books under heading baking roasting. Ask them to write definition of baking and roasting above.

We know that our recipe has to be healthy. What do we mean by healthy when we talk about food and diet? **Healthy eating is eating a variety of foods that give you the nutrients you need to maintain your health, feel good, and have energy.**

Repeat several times

What are nutrients? You learned about this in year 3 science. Can anyone remember the 7 key nutrients?

If children need a visual prompt show them this picture (labels are removed):

Allow children time to share and discuss which nutrients they can remember. Together, Label the 7 key nutrient groups: carbohydrates, protein, fats. Vitamins, minerals, water and fibre. Discuss food groups on the eat well plate (fruit and vegetables, dairy etc.) Give out food triangle and eat well plate sheet. The food

	groups have been labelled don the eat well plate. Use the food triangle to add nutrients to the correct groups e.g. protein by meat and fish, carbohydrates by bread and grains. What is a healthy diet? **Healthy diet is eating a variety of foods that give you the nutrients you need to maintain your health, feel good, and have energy.** Record this definition in books. We are designing and making a baked, healthy snack that we can sell at sports day. In DT, our design brief must identify 3 things – can anyone remember what they are? **Product, purpose, user.** Can we identify these things? - Product: What is the product we will be making? (a healthy snack), - Purpose: What is the purpose (to sell at sports day to raise money or to make a healthy snack to give people nutrients - User – parents on sports day We know or design brief, however, we also now have more information. This is now called a specification…. Criteria out product has to meet. We are ready to create a specification. If we are going to make a healthy recipe, what do we need to try and make sure? Allow children time to discuss and come up with suggestions and share these agreeing a set criteria as a class e.g.: - Low/no sugar - Low fat - Have a fruit/vegetable as an ingredient - Use wholegrain flour rather than white flour - Have grains or seeds in it - Something that can be baked - Something cheap and easy to make e.g. a biscuit Finally, we are recreating our biscuits this week (week beg 27th June), sports day is not until the last week of term. How can we preserve our healthy snack? **We can freeze them.** Therefore, we need to ensure our snacks are freezeable – add this to the list of specifications. Exit pass: In books record: • Design brief: - product - purpose - user. • Specification			
I can investigate and evaluate existing products I can design a recipe that meets a specification	This is a DT lesson. In DT we design and make to solve problems Recap prior learning: What is a healthy diet? **Healthy diet is eating a variety of foods that give you the nutrients you need to maintain your health, feel good, and have energy** What is baking? **Baking is cooking soft food using dry heat** What is roasting? **Roasting is cooking food that holds its shape using dry heat** Revisit design brief and specification (ensure you are happy with the specification as the class teacher). We have a lot of children in the class and it would be too difficult to have everyone making a different recipe.	Healthy biscuit recipes Biscuit packaging Recipe books Specification printed up small, many times as a checklist	**Recipe** Ingredients Method Instructions Specification criteria	There is lots of reading involved in this lesson, extra adults make be required to read the information to children who struggle with reading or use

	Therefore, we are going to work in groups (teacher to decide of how many). So, out next job is to look at some existing recipes, cook books and food labels and see if we use them to help develop our thinking. Have a range of empty biscuit boxes, recipes books, print out of recipes and allow children time to research these identifying any that meet the criteria. Can they get any good ideas for ingredients? As children read the recipes, use a specification checklist and tick of the criteria they meet. - Which recipes ticked the most items on the specification? - Which recipes sounded the nicest? Why? - Which recipes sounded the worst? Why? - How could you adapt a recipe to make it healthier? - Is there a recipe you would like to use? Why? - Is there a recipe you would like to adapt? How and why? - Are there any ingredients your group want to avoid? Why? - Are there any ingredients your group want to include? Why? Allow children time to discuss the above questions and annotate recipes e.g. we would add lemon zest for flavour, we would add grate courgette to give it colour, we would decorate with poppy seeds to make it look appetising. By the end of this lesson the group should agree a recipe and record it in their books (this could be on one piece of paper then copied). It needs to include a list of ingredients and a method. They need to consider how many biscuits the recipe makes so for example, if the recipe makes 12 biscuits, is 12 enough for the group to make? They should double or triple the quantities. Each group to write out a shopping list (a school trip to the coop could be done to buy ingredients or the teacher could buy them overnight)			app such as speechify
I know how to safely work with food.	This is a DT lesson. In DT we design and make to solve problems Recap prior learning: What is a healthy diet? **Healthy diet is eating a variety of foods that give you the nutrients you need to maintain your health, feel good, and have energy** What is baking? **Baking is cooking soft food using dry heat** What is roasting? **Roasting is cooking food that holds its shape using dry heat** Today we are going to learn specific skills that will help us with making our healthy snack. There are many health and safety rules we must follow when working with food. Can anyone name any of these rules? - Tie hair back - Clean work tops (before and after use) - Wash hands - Wash food before use (discuss when this is appropriate – wold we wash flour? Would we wash an apple? - Wear an apron Watch the following video on how to wash hands properly https://www.youtube.com/watch?v=uacG1yZppro stop video at 53 seconds	- IAW - Hand washing card activity - Soap and sinks (e.g. in toilets) - Range of kitchen scales (digital and manual)* - weight cards - Pasta - rice - bowls - Range of 'kitchen' measuring spoons * - Flour - Range of capacity containers with ml marked on them - Washing up bowls x2 full of water - blue food colouring		

	Watch this video: https://www.youtube.com/watch?v=r-X_bXJBVjs this teaches how to roll dough and cut out using cookie cutters Skills Carousel On different tables have the following activities set up t practice skills they will use in the making of their biscuits. Ideally an adult would be at each station to focus on the skills being learned: • Hand washing: Activity cards taken from the video watched previously. In pairs, one child orders the cards into the correct order, the other child checks. Swap roles. Then repeat. If enough adults children could also be taken to the toilets to be observed washing their hands to check they follow the correct routine. • Weighing: Have a range of kitchen scales (some electric and some manual). A range of weight cards on the table. Children choose a card and weigh out the appropriate amount of either: pasta, rice, lentils etc. Choose another card and repeat • Measuring using spoons: Have a rage of 'proper' kitchen measuring spoons. Do children know how much each is? Teaspoon = 5ml, dessert spoon = 10ml, table spoon = 15ml. Practice measuring both liquid and flour with measuring spoons. Ensure children know that when measuring flour with a spoon – it isn't to see how much flour you can fit on the spoon – it is a 'level' spoonful. The dry ingredients could then be check on kitchen scales as well so for example a dessert spoon of flour 10ml should weigh approx. 10g • Measuring liquids: Have a range of measuring jugs, small cups, beakers etc. (any containers that has ml marked on it). You will need 2 washing up bowls/large box/bucket of water (put a little blue food colouring in to make it easier to see the marking). Stand these in a tray/empty drawer to help catch drips. Laminated cards with various amounts of ml on them, children take a card and practice measuring the correct amount working in pairs to check each others work. Also worth having paper towels/blue roll on stand by for spillages. • Rolling and cutting: Have a range of rolling pins and cookie cutters. A bag of flour needs to be available to stop the dough sticking to the tables and also a spatula. Have tracing paper/grease proof paper available to place the cut 'biscuits' on to. For the dough you can either use shop bought dough (defrosted from the freezer) or make a simple dough –without food colouring- such as play dough (EYFS staff are brilliant at this! Or there are plenty of microwave playdough recipes out there) Once the children have worked their way around the activities, they should help clear up. Allow children to tidy equipment in to one box then spray and clean a table (use child friendly cleaning solution) There is a video here if needed: https://www.youtube.com/watch?v=mbSsOe--dDM to note: small amount of spray needed. Back and forth motions not circular. Go all the way up to the edges. In books children reflect on the skills they have learned today and which they will use in their recipes (worksheet available for this)	- capacity cards - trays/empty drawers - paper towels - rolling pins - Flour - cookie cutters* - playdough/ homemade dough/ shop bought pastry dough - Reflection of skills learning sheet * For the items above it may be useful to ask staff to bring in items from home as this will give a good range of resources rather than children only being confident with using the 'schools' version		
I can follow a recipe and make a healthy snack	This is a DT lesson. In DT we design and make to solve problems **Making biscuits:** In this lesson children will make their biscuits. You will need additional adult helpers. Ideally have an additional adult with you for the full day (or two days dependent upon number of groups), they (or you as you know what skills and knowledge the children should be referring to) can take the groups out one at a time to make their biscuits. Children should help with setting up and clearing down after wards. Staff room cooker to be used. Children can sample one of the biscuits when cooled and evaluate. Children complete evaluations – this is 'real' as any changes made to the recipe e.g. need more sugar, the recipes will be given to Heather in the kitchen who will make batches of the children's healthy to be sold at sports			

	day (if more are needed dependent upon how many batches the children make and are left after sampling!). Are we baking or roasting? How do we know? Whilst children not creating, as they are being sold at sports day, children to make posters/labels/leaflet/postcard for their healthy snacks to be displayed at sports day. Important information must include: ingredients, why they have made them, perhaps including the design brief, price they will be charging, a photograph of the food etc. When discussing how much to charge children should have shopping receipt at hand to work out the cost of the ingredients and they want to ensure they make a profit (this could be spent on books/ food or ice-creams for end of year party). Adult help may be needed for this. Ideally these information leaflets/posters etc. would be done on computer to make them look more 'professional' although hand design could be done in children prefer. Evaluations: Why do we evaluate? We evaluate to make improvements and make sure products are always the best they can be. Record evaluations in books: Did your product meeting the design brief? Did your product meet the specification? What was the trickiest part? How much would you give your product /10 for the way it looks? How much would you give your product /10 for the way it tastes? What changes would you make to your recipe next time? **Ensure on sports day photographs of the biscuits on sale are taken for the children's books. Children could sell these themselves on stalls as parents come in and get ready for sports day.**			

1. Year Groups

Years 3/4

2. Aspect of D&T

Food

Focus

Healthy and varied diet

3. Key learning in design and technology

Prior learning

- Know some ways to prepare ingredients safely and hygienically.
- Have some basic knowledge and understanding about healthy eating and *The eatwell plate.*
- Have used some equipment and utensils and prepared and combined ingredients to make a product.

Designing

- Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.
- Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.

Making

- Plan the main stages of a recipe, listing ingredients, utensils and equipment.
- Select and use appropriate utensils and equipment to prepare and combine ingredients.
- Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.

Evaluating

- Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.
- Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.

Technical knowledge and understanding

- Know how to use appropriate equipment and utensils to prepare and combine food.
- Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.
- Know and use relevant technical and sensory vocabulary appropriately.

4. What could children design, make and evaluate?

sandwiches wraps rolls pitta pockets
blinis rice cakes toasties snack bar
salad snacks other – specify

5. Intended users

themselves older children
younger children parents grandparents
friends family visitors
other – specify

6. Purpose of products

celebration picnic lunch boxes
sports day religious festival off-site visits
healthy living other – specify

7. Links to topics and themes

Stories Picnics Healthy Eating School Fair
Religious Festival Eco-Fair/Green Days
Cultural Focus day
other – specify

8. Possible contexts

home school off-site educational visits
leisure culture enterprise industry
wider environment health
other – specify

9. Project title

Design, make and evaluate a_____ (product) for _____ (user) for _____ (purpose).

To be completed by the teacher. Use the project title to set the scene for children's learning prior to activities in 10, 12 and 14.

10. Investigative and Evaluative Activities (IEAs)

- Children investigate a range of food products e.g. the content of their lunchboxes over a week, a selection of foods provided for them, food from a visit to a local shop. Link to the principles of a varied and healthy diet using *The eatwell plate* e.g. *What ingredients have been used? Which food groups do they belong to? What substances are used in the products e.g. nutrients, water and fibre?*
- Carry out sensory evaluations on the contents of the food from e.g. a variety of bought food products such as a range of wraps or sandwiches. Record results, for example using a table. Use appropriate words to describe the taste/smell/texture/appearance e.g. *How do the sensory characteristics affect your liking for the food?*
- Gather information about existing products available relating to your product. Visit a local supermarket and/or use the internet.
- Find out how a variety of ingredients used in products are grown and harvested, reared, caught and processed e.g. *Where and when are the ingredients grown? Where do different meats/fish/cheese/eggs come from? How and why are they processed?*

11. Related learning in other subjects

- **Mathematics and computing** – making use of mathematical and computing skills to present results of sensory evaluations graphically.
- **Spoken language** – developing relevant vocabulary e.g. sensory descriptors. Ask relevant questions to extend their knowledge.
- **Science** – using and developing skills of observing and questioning. Humans get nutrition from what they eat. Discuss changes of state if heat is used.

12. Focused Tasks (FTs)

- Learn to select and use a range of utensils and use a range of techniques as appropriate to prepare ingredients hygienically including the bridge and claw technique, grating, peeling, chopping, slicing, mixing, spreading, kneading and baking.
- Food preparation and cooking techniques could be practised by making a food product using an existing recipe.
- Discuss basic food hygiene practices when handling food including the importance of following instructions to control risk e.g. *What should we do before we work with food? Why is following instructions important?*

13. Related learning in other subjects

- **Mathematics** – mass kg/g.
- **Spoken language** – developing relevant technical vocabulary e.g. names of utensils and techniques. Ask relevant questions to extend their knowledge.

14. Design, Make and Evaluate Assignment (DMEA)

- Discuss the purpose of the products that the children will be designing, making and evaluating and who the products will be for.
- Develop and agree on design criteria with the children within a context that is authentic and meaningful. This can include criteria relating to healthy eating and a varied diet e.g. *What do you need to consider to make it part of a balanced diet? How do we select the ingredients? How could we make it appealing to eat?*
- Ask children to generate a range of ideas encouraging realistic responses.
- Using discussion, annotated sketches and information and communication technology if appropriate, ask the children to develop and communicate their ideas.
- Ask children to consider the main stages in making the food product, before preparing/cooking the product including the ingredients and utensils they will need.
- Evaluate as the assignment proceeds and the final product against the intended purpose and user, reflecting on the design criteria previously agreed. Consider what others think of the product when considering how the work might be improved.

15. Related learning in other subjects

- **Mathematics** – mass kg/g.
- **Art and Design** – using and developing drawing skills.
- **Writing** – new vocabulary. Use non-fiction texts such as description, explanation and instructions e.g. recipes. Organise their work using e.g. headings, subheadings.
- **Spoken language** – consider and evaluate different viewpoints. Use discussion to develop understanding through exploring ideas.

16. Possible resources

information about foods from around the world, basic recipes

range of relevant example foods to taste and evaluate

suitable equipment and utensils such as: knives, chopping board, weighing scales, measuring jugs, bowls, baking trays, spoons – various sizes, parchment paper, plastic film

17. Key vocabulary

name of products, names of equipment, utensils, techniques and ingredients

texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury

hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet

planning, design criteria, purpose, user, annotated sketch, sensory evaluations

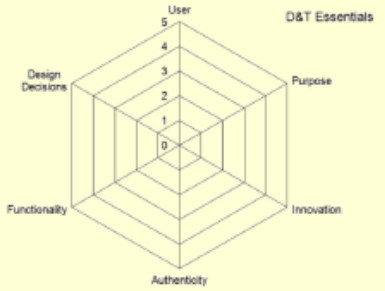
18. Key competencies

problem-solving teamwork negotiation
consumer awareness organisation motivation
persuasion leadership perseverance
other – specify

19. Health and safety

Pupils should be taught to work safely and hygienically, using tools, equipment, techniques and ingredients appropriate to the task. Prior to undertaking this project risk assessments should be carried out, including identifying whether there are children who are not permitted to taste or handle any food ingredients or products.

20. Overall potential of project



Years 3/4

Food
Healthy and varied diet

Instant CPD

Tips for teachers

- ✓ When choosing bought products to evaluate, choose some with simple fillings (such as cheese) and others with more variety (such as bacon, lettuce and tomato). Include some with fillings from a variety of cultures.
- ✓ Children may need help to develop design criteria for their product. You can model this by discussing what the design criteria may have been for an existing product that the children have previously evaluated before encouraging them to create their own.
- ✓ If you grow edible plants in the school grounds such as herbs, lettuce or tomatoes, encourage the children to use these in their food product. When possible, use some ingredients which are seasonal and locally sourced.
- ✓ It is advisable to have additional adult support when children are learning to prepare ingredients.
- ✓ Use a range of fresh and processed ingredients.
- ✓ Some ingredients can be cooked using a heat source with adult supervision to introduce children to techniques such as boiling an egg or roasting a pepper.
- ✓ Hygiene: tie long hair back, wear aprons, cover cuts with blue plasters and wash hands thoroughly with soap and dry with a paper towel. More details on www.foodafactoflife.org.uk.
- ✓ Homework idea 1: Ask children to collect pictures of related food products from magazines etc. Research which similar products are used around the world.
- ✓ Homework idea 2: Ask members of the children's family which is their favourite lunch snack and why.

Useful resources at www.data.org.uk

- Dips and Dippers
- Super Salads
- Sandwich Snacks
- Soups - Celebrating culture and seasonality

Other useful web-based resources:

- www.foodafactoflife.org.uk
- http://www.nhs.uk/livewell/5aday/pages/5adayhome.aspx

Wraps

Pitta bread sandwich

Sandwich

Skills and techniques

Grating cheese

Spreading butter on bread

Cutting using the bridge technique

Cutting using the claw technique

Investigating and Evaluating Activities

Children can analyse existing products related to their project using sensory evaluations and record their results in a table. Explain that tasting is not the same as eating. Provide kitchen towel so children can spit out food they do not like. Provide water to cleanse palette between tasting products.

Analysing existing products

Filling	Appearance	Smell	Flavour/ Taste	Texture	Dislike	Neither	Like
1							
2							
3							
4							
Word bank	Colourful Dark/pale Greasy Moist	Fruity Meaty Smoky Oniony Garlicky Fishy	Salty Herby Spicy Fishy Smoky	Crispy Crunchy Soft Chewy Sticky Smooth Hard			

Designing, making and evaluating a bread-based product with a filling for lunch, such as a wrap, a sandwich, a roll, a blini or a toastie

An iterative process is the relationship between a pupil's ideas and how they are communicated and clarified through activity. This is an example of how the iterative design and make process might be experienced by an individual pupil during this project:

THOUGHT	ACTION
Who am I making the food product for? How can I make it appealing for the range of users?	Discussing and communicating ideas, researching existing products, drawing annotated sketches, generating design criteria.
What kind of food product shall I make that can be carried easily? What ingredients could it contain?	Referring back to sensory evaluations carried out in IEAs.
How will I make sure it looks appealing as well as tastes and smells good?	Discussing ideas and how the type of food product and way it is eaten will affect the design.
What techniques will I use to prepare the ingredients and what equipment do I need?	Peeling, chopping, slicing, grating, spreading. Using tools such as round ended knives, vegetable peelers, apple corers, strawberry hullers and graters.
How long will it take? What order will I work in?	Listing the equipment required. Planning the order of the activity and timescale.
More thoughts... appraising, reflecting and refining.	Acting on ongoing evaluation to make appropriate changes.
Has the snack met the needs of the user and achieved its purpose?	Evaluating the food product against the design criteria including the user and purpose. Recording final product through an annotated sketch.

Glossary

- **Appearance** – how the food looks to the eye.
- **Texture** – how the product feels in the mouth.
- **Sensory evaluation** – evaluating food products in terms of the taste, smell, texture and appearance.
- **Preference test** – trying different foods and deciding which you like best.
- **Strawberry huller** – tool to remove the stalk and leaves from a strawberry.
- **Processed food** – ingredients that have been changed in some way to enable them to be eaten or used in food preparation and cooking.