Year 4 Design and Technology: Food and Nutrition – Block A What's really in your food?

- The outline and structure of the block is as follows:

Lesson 1	Lesson 2	Lesson 3
Exploring nutrition Explicit teaching of culinary skills and techniques Evaluating outcomes	Exploring bread making Explicit teaching of culinary skills and techniques Evaluating outcomes	Exploring how to make soup Explicit teaching of culinary skills and techniques Modifying and improving

At the end of this block, pupils will …	
Know:	**Be able to:**
Processed foods have many added ingredients	Make, roll and shape bread dough Make a soup

Pizza

Mini bread rolls

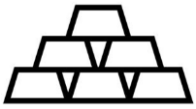
Soup

In this unit, pupils will explore the difference between freshly made food and mass-produced food. The unit will focus on common foods that are part of a healthy diet but are often bought pre-made and can contribute to poor physical and mental health.

CUSP Design & Technology Long term sequence	Block A	Block B	Block C	Block D	Block E	Block F
Year 1	Mechanisms	Structures	Food and Nutrition	Understanding Materials	Textiles	Food and Nutrition
Year 2	Textiles	Food and Nutrition	Mechanisms	Understanding Materials	Food and Nutrition	Structures
Year 3	Textiles	Food and Nutrition	Mechanisms	Food and Nutrition	Systems	Structures
Year 4	Food and Nutrition	Mechanisms	Textiles	Structures	Electrical Systems	Food and Nutrition
Year 5	Food and Nutrition	Systems	Textiles	Mechanisms	Structures	Food and Nutrition
Year 6	Food and Nutrition	Mechanisms	Food and Nutrition	Structures	Electrical Systems	Textiles

Point of reference:
Y4 Food and Nutrition – Block A

Pupils will be able to:
- identify some of the nutrients in a range of foods



Prior Learning

- dice, slice, chop and grate vegetables
- explain the benefits of fresh food, compared to processed food

Nutrition Notes:
The block focuses on pupils making a fresh version of common shop-bought foods. The purpose of these lessons is to educate pupils about the ingredients that are often added to processed and mass-produced foods, in order to enhance their flavour or extend their shelf life. For example, white sliced bread can contain as many as 16 different ingredients, and a tin of tomato soup can contain 20g of sugar. These foods are not considered unhealthy by many people and form a major part of our diets. When combined with large quantities of junk food, this leads to an increased risk of obesity and type 2 diabetes. Up to 60% of the UK diet is now made up of ultra-processed food. In this unit, pupils will learn about the benefits of making fresh alternatives and will acquire the skills to enable them to do this with confidence.

Links to Literature:
How Did That Get in My Lunchbox?: The Story of Food by Chris Butterworth

Health and Safety:
This block requires pupils to use peelers, knives, hot trays and hobs. Teachers should ensure that they follow their own school's risk assessments and policies for using the necessary materials and equipment. Pupils should be taught about how to use materials and equipment safely and responsibly as part of these lessons.

Food Hygiene:
Please ensure all foods purchased are correctly stored and at the appropriate temperature. All food made should be cooled before being refrigerated. All food should be taken home and consumed within three days. All the recipes are suitable to be eaten hot or cold. Please refer to your school's allergy register before starting this block.

Environmental Factors	**Cultural Links**
By making their own bread, pupils are reducing their carbon footprint as it uses fewer materials. Less CO_2 is also being emitted because the bread does not have to be transported across large distances.	A survey of people from 24 countries found that pizza was the most popular dish. Approximately 11 million loaves of bread are sold every day in the UK and the number of artisan bakeries is on the rise. Soup can be traced back to 20,000 BC and the first can of soup was invented in 1897.

Supporting Recipe: Y4 Food and Nutrition – Block A

	Lesson 1	Lesson 2	Lesson 3
Dish	**Pizza**	**Mini bread rolls**	**Soup**
Equipment	Mixing bowls Table knife Scales Graters Baking trays Rolling pins	Mixing bowls Measuring jugs Table knife Baking trays	Graters Chopping boards Mixing bowls Saucepans Stick blenders
Ingredients	*Quantities per pizza:* • 200g plain flour • 2 tbsp plain yoghurt • ½ tsp salt • Cold water • 3 tbsp tomato puree • 25g cheese	*Quantities for 6 small rolls:* • 2 tsp yeast • 1 tsp olive oil • 200g bread flour • 150ml lukewarm water	*Quantities per two pupils:* • ½ tin chopped tomatoes • ½ onion • 1 clove garlic • ½ medium potato • 1 tsp tomato puree • ½ cap balsamic vinegar • Pinch of sugar
Method	1. Combine the flour and salt. 2. Add the yoghurt and mix using a table knife. 3. Add a small amount of cold water at a time and mix until the mixture forms a soft dough. 4. Roll the dough into the required shape. 5. Place on a floured baking tray. 6. Add toppings. 7. Bake for 10 – 15 minutes at 220°C.	1. Combine the flour and salt. 2. Add the yeast and olive oil to 150ml of lukewarm water. 3. Add the water to the dough a little at a time until the mixture forms a soft dough. 4. Place in an oiled bowl and prove for 1 hour if possible. 5. When proved, knock back the dough, divide and shape into rounds. 6. Place on a baking tray. 7. Bake for 10 – 15 minutes at 220°C.	1. Grate the onion, garlic and potato. 2. Heat a saucepan with 2 tsp of olive oil. 3. Fry the ingredients until soft. 4. Add the chopped tomatoes and other ingredients. 5. Add cold water until the desired consistency is achieved. 6. Simmer for 20 minutes. 7. Blend until smooth. 8. Taste and season.

Point of explanation:
Y4 Food and Nutrition – Block A

Core Knowledge	Explanation
ingredients	Ingredients are any foods or substances combined to make a particular dish. Many processed and ready-made meals contain additional ingredients to enhance flavour or extend shelf life.
processed	Processed food is food that has been treated in order to change or preserve it.
bread	Bread is a food made from flour, water and usually yeast, mixed and baked.

Technical Vocabulary	Definition
gluten	a protein that is contained in wheat and some other grains
knead (verb)	to press something, especially a mixture for making bread, firmly and repeatedly with the hands and fingers
ferment (verb)	to experience a chemical change because of the action of yeast or bacteria

Link to Video: https://vimeo.com/682845413/809a6c5ed2

- Explanation and demonstration of taught content
- Lesson by lesson guidance
- Exemplification of techniques and outcomes

Point of delivery:
Y4 Food and Nutrition – Block A

Revisiting prior learning	Taught content	Point of practice	Point of reflection
1. Ultra-processed food is less healthy than fresh food Vitamins, fibre and protein are nutrients the body needs and can be found in a range of fresh food Healthy alternatives to processed food can be created from fresh ingredients	Compare the ingredients used in mass-produced pizzas with those used in homemade pizzas Identify the nutrients present in flour, cheese and tomatoes: carbohydrates, vitamins, protein and calcium Make a simple yeast-free dough and use the techniques of kneading, rolling and stretching to form the dough Explain what gluten is and how it affects the texture of dough Explore traditional pizza topping ingredients Evaluate outcomes	Introduce pupils to the key question for this unit: **What's really in your food?** Refer to the Knowledge Note to ensure that pupils understand the following terms: ingredients, processed, bread, gluten and knead. Question pupils about what they can recall from previous units where they explored the differences, in terms of nutritional value, between processed and fresh food. Can they recall the advantages and disadvantages of eating processed food? Explain that pupils will be making their own pizzas in this lesson and comparing them with those they might buy from a supermarket. Teach pupils that pizza is a dish of Italian origin which consists of a flat base, made from dough, topped with tomatoes and cheese and often other ingredients. Pupils may wish to share their favourite pizza toppings. Traditionally, pizzas are baked at a high temperature in a wood-fired oven. A person who makes pizza is know as a pizzaiolo. With pupils, look at the typical ingredients found in mass-produced pizzas. Which ingredients do they recognise? Which are unfamiliar? They are likely to find preservatives and high levels of salt. Explain how to make a yoghurt-based dough. Teach pupils how to knead the dough, pointing out that manipulating the dough helps to develop the gluten in the flour. The gluten becomes more elastic and this improves the texture of the dough once it is cooked. Show pupils how to roll and stretch the dough to the required shape and thickness before placing on a floured tray. Teachers may wish to provide a range of toppings for pupils to select from. However, explain to pupils that as vegetables cook, they release water and if too many toppings are added, there is a risk that the base will become soggy during cooking. Once the pizzas are cooked, encourage pupils to taste and evaluate, making notes in their portfolios of their preferences and the new skills and vocabulary they have learnt.	Can identify and compare ingredients found in mass-produced pizzas and homemade pizzas Can show an understanding of the link between highly processed food and poor health Can copy a modelled process or technique such as kneading, rolling and stretching Can define the terms: • kneading • gluten • processed • ingredients • bread Can suggest ways in which a recipe could be adapted or improved

Questions for assessment

What is gluten?

What is dough?

What does mass-produced mean?

What additional ingredients are used in mass-produced pizzas?

How can you rectify the mistake of adding too much water to the dough mixture?

What is kneading?

Why is it important to knead and stretch the dough?

How can you ensure the pizza base does not become soggy during the cooking process?

Point of delivery:
Y4 Food and Nutrition – Block A

Revisiting prior learning	Taught content	Point of practice	Point of reflection
2. Mass-produced food often contains additional ingredients as flavour enhancers, sugar, salt and preservatives Identify the nutrients present in flour, cheese and tomatoes: carbohydrates, vitamins, protein and calcium Knead, roll and stretch dough Gluten is a substance found in flour which develops elasticity when kneaded in dough	Explore the differences in terms of flavour, textures and nutritional value between mass-produced bread and homemade bread Explain the additional ingredients that are present in mass-produced bread products Explain what yeast is and how the fermentation process works to make bread dough rise Define the term proving and explain this process and how it affects the final outcome Evaluate results	Recap the key skills, vocabulary and concepts covered in the previous lesson. Remind pupils of the key question for this unit: **What's really in your food?** If possible, provide pupils with a range of types of bread to explore and taste. Include in the range a standard loaf of white sliced bread. Explain to pupils that bread is a staple food and approximately 11 million loaves are bought each year in the UK. Challenge pupils to compare the white sliced loaf with some more traditional baked loaves. Prompt them to compare the texture, taste and appearance. Discuss the advantages and disadvantages of opting for white sliced bread, such as: it is readily available and is low in cost, but lacks flavour, has less fibre, and may contain many other ingredients such as preservatives. Explain that yeast is used as a raising agent in breadmaking and show pupils what yeast looks like. Teach pupils that yeasts are living single-celled organisms that belong to the fungus family. Explain that yeast converts carbohydrates to carbon dioxide through fermentation and it is this process that makes bread dough double in size when placed in warm conditions (proving). Show pupils how to make the simple bread dough and explain that adding lukewarm water to the yeast starts the fermentation process. Demonstrate the kneading technique. Remind pupils to use the heel of their hands and explain how the manipulation of the dough makes the gluten develop elasticity. Challenge pupils to describe how the appearance and consistency of the dough changes as a result of kneading and proving. Show pupils how to divide up and shape the dough into small rounds. After cooking, invite pupils to taste and evaluate their rolls. Pupils should make notes about the processes they have completed in their portfolios and then complete Vocabulary Task 1.	Can describe the difference in flavour and texture between mass-produced and homemade bread Can show an understanding of the terms: • fermentation • proving Can follow a series of steps in a process to make bread Can use appropriate vocabulary to describe how bread dough changes as it is kneaded, proved and cooked Can describe the taste and textures of their bread and identify things they would do differently next time

Questions for assessment

What is yeast?

What does fermentation mean?

How does the fermentation process affect bread dough?

What is proving? **Why** is this process necessary in breadmaking?

How does the consistency and appearance of bread dough change throughout the kneading and proving processes?

How would you compare mass-produced loaves with homemade bread?

Point of delivery:
Y4 Food and Nutrition – Block A

Revisiting prior learning	Taught content	Point of practice	Point of reflection
3. Mass-produced food can contain many additional ingredients such as saturated fat, sugar, salt and preservatives Grate and chop vegetables safely	Explore the difference in ingredients between tinned and freshly made soup Explain that eating lots of pre-made foods can make it difficult to control our intake of sugar and salt Make a simple soup Compare the taste and texture of tinned and freshly made soup Evaluate results and suggest ways in which a recipe could be adapted	Remind pupils about the key question for this unit: **What's really in your food?** Provide some labels from tinned tomato soup and ask pupils to study the list of ingredients. Pose questions such as: • Are there any ingredients you do not recognise or that are surprising? • Is sugar listed? Would you expect to see sugar in soup? • What ingredients would you expect to see in tomato soup? Explain to pupils that some tinned soups can contain up to 20g of sugar. Show pupils what this quantity looks like. Point out that it is not unhealthy to have some sugar in moderation. However, it is difficult to control the amount of sugar we consume if our diets consist of a high proportion of pre-made foods. Show pupils the ingredients needed to make fresh tomato soup. Pupils should notice that there are surprisingly few ingredients compared to the number of ingredients in tinned varieties. Explain that the onions and garlic will be cooked in olive oil which is an unsaturated fat which is good for the heart. Explain also that potato is used as a natural thickener because of the starch it contains. Demonstrate how to make the soup, pointing out the addition of a small quantity of sugar which is used to counteract the acidity of the tomatoes and the use of balsamic vinegar to add depth of flavour. Once the soup has simmered for 30 minutes, blend to the required consistency and allow pupils to taste. Teachers may wish to heat some tinned tomato soup so that pupils can make a direct comparison in terms of flavour, texture, smell etc. Encourage pupils to make notes about the method in their portfolios, along with evaluative comments. Pupils then complete Vocabulary Task 2.	Can identify the differences in ingredients between tinned and fresh soup Can explain why tinned soup is less healthy than fresh Can explain why eating large quantities of sugar is unhealthy Can grate and cook vegetables safely Can explain the purpose of adding sugar to fresh soup and why a potato is needed Can explain how to adjust the taste or texture of the fresh soup Can use appropriate vocabulary to describe textures and tastes

Questions for assessment

Why is tinned soup often less healthy?

Why should we have sugar in moderation?

What do you notice about the ingredients of tinned soup?

Why is a small amount of sugar used when cooking tomatoes?

What purpose does the potato serve?

How would you describe the texture of the fresh soup?
How could you change the texture?

How would you describe the taste of the fresh soup?
How could you change the taste?

Oracy and Vocabulary:
Y4 Food and Nutrition – Block A

Task 1:
Sort these verbs according to whether they relate to something increasing or decreasing in size.

expand compress diminish shrink contract

swell grow enlarge lessen

Increase	Decrease

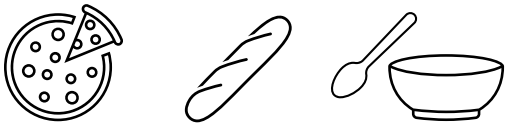
Exploration:

say say

True or false?
Bread dough would rise without yeast.

What do you think would happen if you added large quantities of yeast to bread dough and left it overnight?

Task 2:
Follow these instructions to evaluate what you have made and explain what you have learnt.

Explain which recipe you enjoyed making the most. Give reasons for your choice.  say say
Explain the processes for making bread. say say
Write three new words you have learnt. Explain what they mean. 
Explain which dish you are most proud of and why. say say
How could you adapt the tomato soup recipe? say say

Vocabulary: Y4 Food and Nutrition – Block A

OWN-it — Analyse

Tick the correct word class for the word *knead*.

- ❑ verb
- ❑ adjective
- ❑ preposition

Change this verb to a noun.

ferment - _____

Change this word from an adjective to a noun.

rotational - _____

KNOW-it — Define

Tick true or false.

Gluten is a substance found in most fresh vegetables.

true | false

Write two meanings of the word *prove*.

Explain what *processed* means.

LINK-it — Connect

Circle the word that is the odd one out.

knead pull press

Circle the word that is an antonym of the word *processed*.

refined treated natural

Write three words that contain the root *prove*.

1. _____
2. _____
3. _____

USE-it — Use in context

Tick the box if the word *kneaded* has been used correctly in this sentence.

She was in a hurry and *kneaded* to be there on time. ☐

Write a sentence that includes these words:

yeast expand dough

_____

_____

Use the word *ingredients* in a sentence.

_____

_____

Knowledge Note:
Y4 Food and Nutrition – Block A

Year 4: Food and Nutrition
What's really in your food?

Core content:

Explore the difference between freshly made food and mass-produced food.
Learn how to make food that is commonly shop bought.
Explore the nutritional benefits of homemade food.

Technical vocabulary:

Ingredients – any foods or substances combined to make a particular dish.

Processed – food that has been treated in order to change or preserve it.

Bread – a food made from flour, water and usually yeast, mixed and baked.

Gluten – a protein that is contained in wheat and some other grains.

Knead – to press a mixture for making bread, firmly and repeatedly with the hands and fingers.

Ferment – to experience a chemical change because of the action of yeast or bacteria.

Techniques:

shaping

rolling

sautéing

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Exemplification: Y4 Food and Nutrition – Block A
What's really in your food?

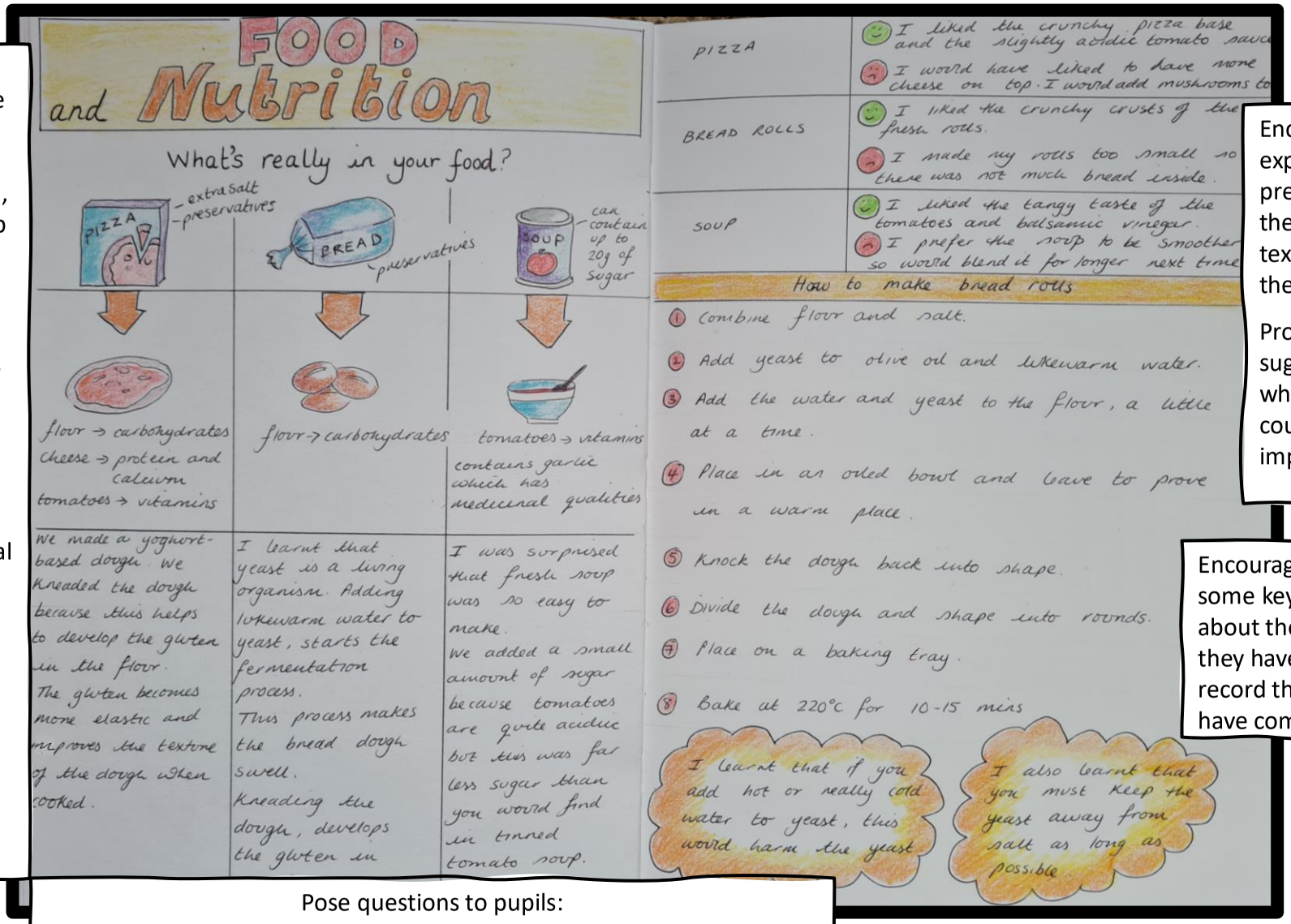
Prompt pupils to compare the ingredients found in mass-produced pizza, bread and soup with those in the freshly made versions

Pose questions to pupils:

What differences do you notice?

What additional ingredients did you find in the items bought from a shop?

Why do you think mass-produced food contains extra ingredients?



Encourage pupils to explain their preferences about the flavour and texture of the food they have prepared

Prompt them to suggest ways in which each recipe could be adapted or improved

Encourage pupils to write some key nutritional facts about the ingredients they have used and record the processes they have completed

Pose questions to pupils:

What are the advantages and disadvantages of eating pre-made food?
What are the advantages and disadvantages of eating freshly made food?