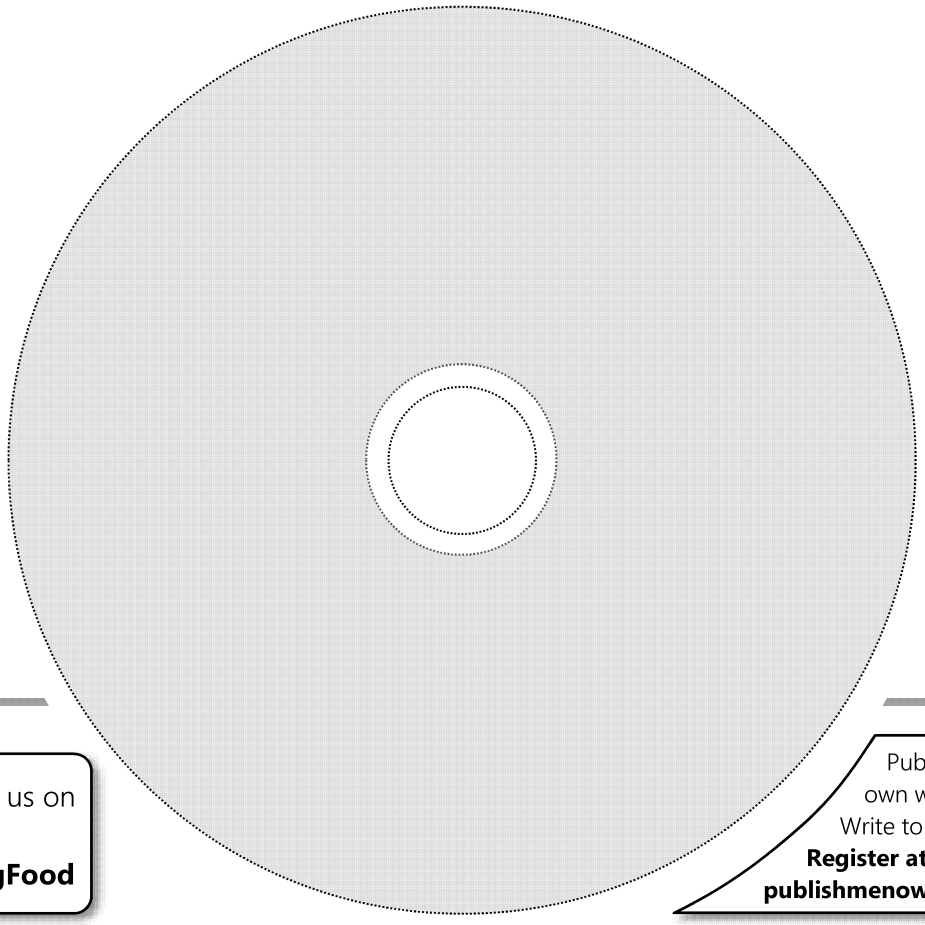
Zig Zag Education

Food and Nutrition **GCSE (9–1) | AQA | 8585**

Interactive PowerPoints for AQA GCSE Food Preparation and Nutrition

WORKSHEETS



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Contents

Folder 1: Introduction and Worksheets

Folder 2: PowerPoint Slides and Teacher Notes

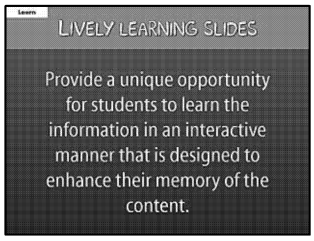
Teacher's Introduction

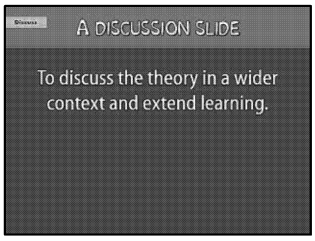
This interactive PowerPoint resource is designed to support the Food Preparation and Nutrition Theory Content for the 2016 AQA GCSE specification by presenting all of the information that students are required to learn in an engaging and interactive manner which can supplement more traditional forms of teaching.

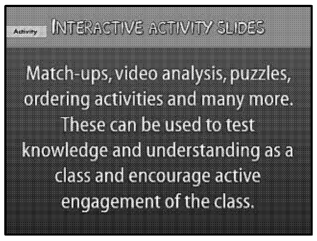
Each PowerPoint clearly covers one distinct area of the GCSE course, allowing you to select the appropriate presentation for your lesson. The presentations are designed to be used in class by you as the teacher to help deliver the content to your class. However, you may wish to give them to your students to work through independently as part of their revision.

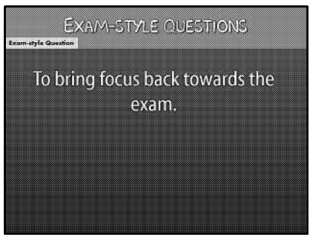
Remember!
Always check the exam board website for new information, including changes to the specification and sample assessment material.

The resource contains 31 PowerPoint presentations, each containing the following slide types:



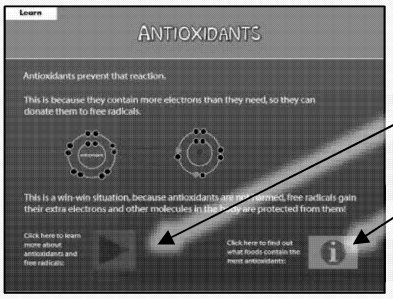






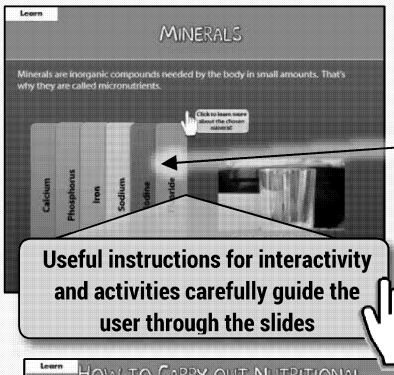
The PowerPoints include a range of interactive elements, with bespoke videos designed to show theory in a real-life setting, as concepts can often be difficult for students to grasp and imagine when they are presented with only images or text.

Bring theory to life with…



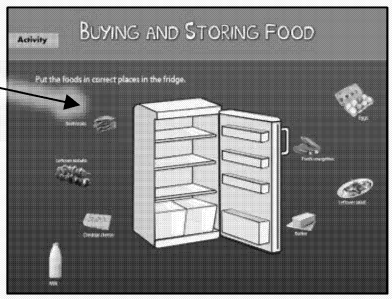
External video links – for further application of the content and expanding knowledge

External weblinks – for further research and reading

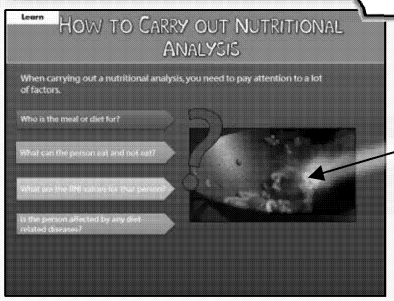


Embedded GIFs – to help illustrate key concepts

Dynamic interactivity between slides – some slides contain dynamic elements that take you to other slides and then back to a home slide, providing variety in delivery



Dynamic diagrams – moving elements help visualise concepts and help you discuss this as a teacher, as the slide comes to life



Embedded videos – to watch theory in action to be able to apply knowledge

Also includes:

- ✓ **Student worksheets** for students to make clear notes and engage in the activities/discussions.
- ✓ **Helpful teacher's notes** both on the slides and printed to support your delivery.
- ✓ **Answers** for each subtopic can be found in the respective PowerPoint.

All of the activities are provided electronically on the accompanying CD. To use on a school network, the entire contents of the CD needs to be copied and pasted into an accessible location.

March 2019

Free Updates!

Register your email address to receive any future free updates* made to this resource or other Food resources your school has purchased, and details of any promotions for your subject.

** resulting from minor specification changes, suggestions from teachers and peer reviews, or occasional errors reported by customers*

Go to **zzed.uk/freeupdates**

3.2.1 Macronutrients

PowerPoint 1: Proteins

Discuss

- What popular meals apply protein complementation?
- How can you increase your protein intake?
- What products are highest in protein?
- Why is a high protein intake not good for your liver and kidneys?

Activity

Add the foods below to c[illegible] categories.

ses[illegible] quinoa chickpeas

Quorn™

rice

black beans

red lentils

turkey

eggs

lamb

wa

High biological value	Low b

Practice Question

Give two ways in which vegans can include high biological value protein in their diet.

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PowerPoint 2: Fats

Discuss

- How do fats affect health – in both a good and a bad way?
- What kind of fat is in your lunch/dinner today?
- How can you increase the amount of omega-3 fatty acids in your diet?

Activity

Research the amount of fat that is present in the following foods: bacon, corned beef, salami, pumpkin seeds, salmon.

https://ndb.nal.usda.gov/ndb/search/list

Find out which foods are highest in saturated, monounsaturated and polyunsaturated

Practice Question

The label to the right shows the nutrient content of a cereal bar.

With reference to the label and indicated nutrients, explain why this cereal bar is not suitable for a person suffering from type 2 diabetes.

(2 marks)

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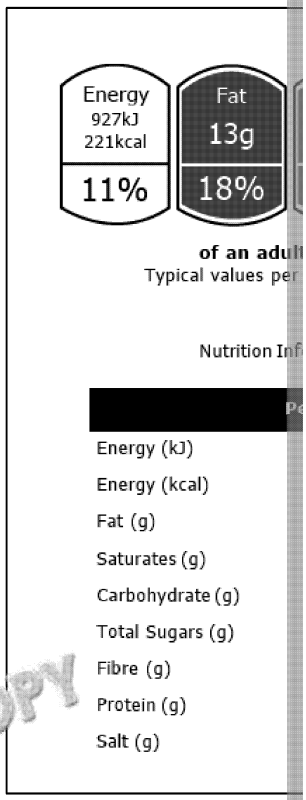


PowerPoint 3: Carbohydrates

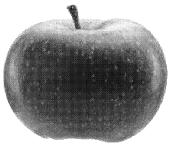
Discuss

- Give as many 'good' and 'bad' sources of carbohydrates as you can. Can you name
  carbohydrate?
- Is it healthy to be on a low-carb diet? What consequences can a low-carbohydrate
- What other nutrients can be provided by starchy foods?

Activity

Sort these foods into the correct categories by putting them into the table below. Some of

Cookies



Apple

Orange juice

Intrinsic sugars	Added sugars	Starch

Practice Question

Name two ingredients that would be suitable in a high-fibre diet.

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PowerPoint 4: Vitamins

Discuss

- Discuss the link between vitamin deficiency and the symptoms it causes.
- Explore and assess what foods are highest in antioxidants, and why.
- Discuss why different people need different amounts of vitamins.

Activity

Answer the following questions by ticking the correct answer.

1. Which vitamin increases iron absorption?
   a) vitamin A ☐
   b) vitamin B12 ☐
   c) vitamin C ☐
   d) folic acid ☐

2. Night blindness is caused by…
   a) vitamin A deficiency ☐
   b) vitamin E deficiency ☐
   c) vitamin A excess ☐
   d) vitamin E excess ☐

3. Oily fish are especially rich in…
   a) beta-carotene and vitamin E ☐
   b) retinol and vitamin D ☐
   c) retinol and vitamin E ☐
   d) beta-carotene and vitamin D ☐

4. Which of these diseases is caused by thiamin deficiency?
   a) pellagra ☐
   b) scurvy ☐
   c) beriberi ☐
   d) spina bifida ☐

5. Which vitamins will shorten the time that wounds take to heal?
   a) vitamins B1 and A ☐
   b) vitamins C and E ☐
   c) vitamins A and B12 ☐
   d) vitamins C and K ☐

6. Which of these vitamins is called the 'sunshine vitamin'?
   a) vitamin D ☐
   b) vitamin K ☐
   c) vitamin A ☐
   d) vitamin E ☐

7. Which statement is untrue about folic acid?
   a) Folic acid helps to produce red blood cells. ☐
   b) Folic acid is found in green, leafy vegetables. ☐
   c) Pregnant women need more folic acid. ☐
   d) Women need less folic acid than men. ☐

8. Which vitamin is found only in foods of animal origin?
   a) vitamin A ☐
   b) vitamin D ☐
   c) vitamin C ☐
   d) vitamin E ☐

Practice Question

Explain why eating your 5 a day may lower the risk of various diseases.

PowerPoint 5: Minerals and Water

Discuss

- What other functions of water can you think of?
- Sea fish are an important source of fluoride and iodine. What other nutrients do th
  healthy choice.
- What foods are highest in calcium?
- Why is it recommended that you eat meat with a salad?

Activity

Match the minerals with effects of th[illegible]ency. Each mineral may have more than

Cal[illegible]	Hypotension
Iron	Goitre
Sodium	Tooth decay
Iodine	Anaemia
Fluoride	Rickets

Practice Question

Describe a dinner which would provide an elderly individual with micronutrients to sup
osteoporosis in future. Give reasons for your choice.

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PowerPoint 6: Making Informed Choices for a Varied and B

Discuss

- What food products can provide calcium in a lactose-free diet?
- How easy is it to apply the healthy eating guidelines?
- Discuss how an elderly individual can have a balanced diet.
- What factors other than state of health and age can affect what a person eats or

Activity

Try to plan a balanced one-day menu for a person who:

- is 60 years old
- is lactose intolerant
- and is vegetarian

What products can you use? What products can't you use? What are dietary needs of t special needs or requirements to be met?

You can use this website to check the nutritional needs of a 60-year-old:
https://www.nutrition.org.uk/attachments/article/234/Nutrition%20Requirements_R

You can use this website to check the composition of your diet:
http://explorefood.foodafactoflife.org.uk/

Practice Question

Traditional Sunday roast contains *roast meat*, *potatoes*, *vegetables*, *gravy* and *Yorksh*

State two reasons why traditional Sunday roast is not suitable for vegans.

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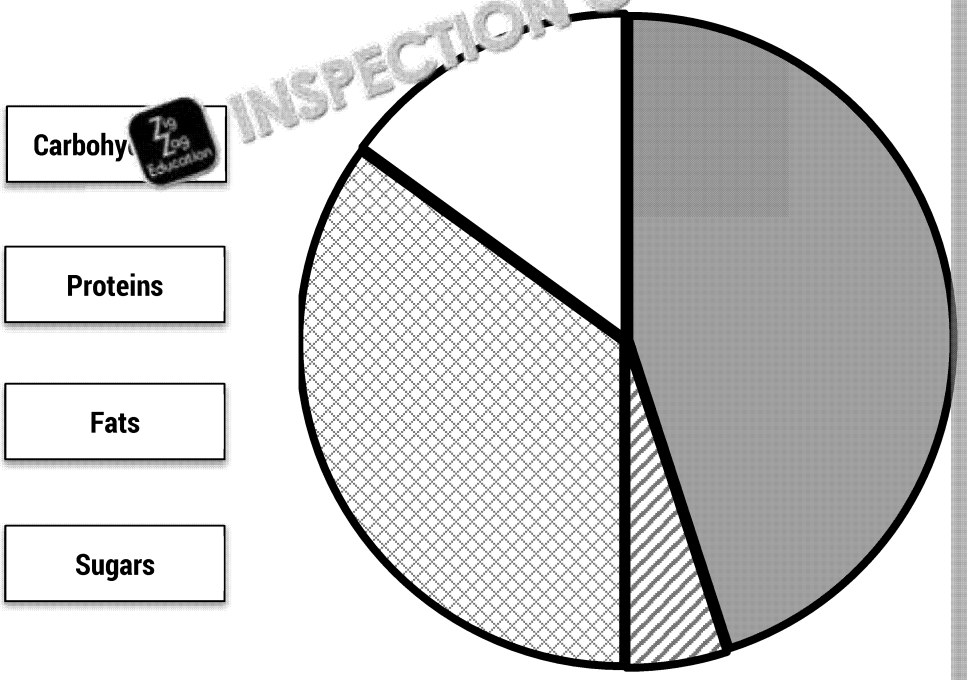
PowerPoint 7: Energy Needs

Discuss

- Who will need more energy – a young man or a pregnant woman?
- Who will need more energy – a young male Biology teacher or a young sportswom
- How can you control your body weight?

Activity

Fill in the plate to indicate how much of each nutrient a balanced diet provides.



Practice Question

What does the abbreviation BMR stand for?

a) Basic meal replacement ☐
b) Basic muscle ratio ☐
c) Banana muffin reduction ☐
d) Basal metabolic rate ☐

PowerPoint 8: How to Carry out Nutritional Analysis

Discuss

- What considerations should be made when planning meals for vegans?
- How can you modify a recipe to increase the amount of dietary fibre? Who could b
- When modifying a meal to meet recommendations for a healthy diet, do the modif healthy for everybody?

Activity

Assess the nutritional value of the recipe b... You will need to use relevant food ta...

- Who can safely eat this me...?
- Who should avoid it ... wh...?
- Who w... t l... to eat it at all?
- How ca... mprove or modify it for these people?

Steak and kidney pie

- 300 g puff pastry
- 2 tbsp oil
- 700 g beef
- 200 g lamb kidney
- 150 g chopped onion
- 30 g flour
- 850 ml beef stock
- ½ tsp salt
- 1 tsp of Worcester sauce
- 1 egg

Serves 6

Values per por...

Energy	Protein	Fats and saturated	Carb... an...
584 kcal	44.1 g	33 g 16.4 g	2

Practice Question

The ingredients to the right are for leek and potato soup. Explain why this dish is not suitable for people suffering from hypertension.

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(2 marks)

PowerPoint 9: Diet, Nutrition and Health

Discuss

- What diet-related diseases can you think of?
- Why do some countries have higher rates of obesity than others?
- What are the risk factors common to CHD, hypertension and type 2 diabetes?

Activity

Match the diseases with their causes (note that there may be more than one!).

Type 2 diabetes	High sodium con
Coronary heart disease	Obesity
Dental caries	Low iron consu
Hypertension	High sugar cons
Anaemia	High saturat consumpt

Practice Question

Give two ways in which a high-fibre diet can improve the state of health of a diabetic.

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3.3.1 Cooking of food and heat transfer

PowerPoint 10: Why Food is Cooked and How Heat is Tran

Discuss

- What cooking methods use conduction?
- What kind of heat transfer do you use when you cook various meals?
- How do different methods of heat transfer affect the sensory aspects of food?

Activity

Identify what methods of heat transfer are used when cooking the following dishes – reme

Shepherd's pie	
Cornish pasty	
Yorkshire pudding	
Stew	
Beef steak	
Hard-boiled eggs	

Practice Questions

Analyse the instructions for making a bolognese sauce and answer the questions.

a) Explain how heat is transferred when boiling pasta.

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(3 marks)

1. Pour some
and prehea
2. Fry minced
3. Remove th
chopped o
4. Pour in red
tomatoes,
5. Add mince
6. In a large p
7. Add a pinc
olive oil to
8. Cook for 8
9. Drain off t
the sauce.
10. Serve imm

b) Explain why minced beef has to be cooked.

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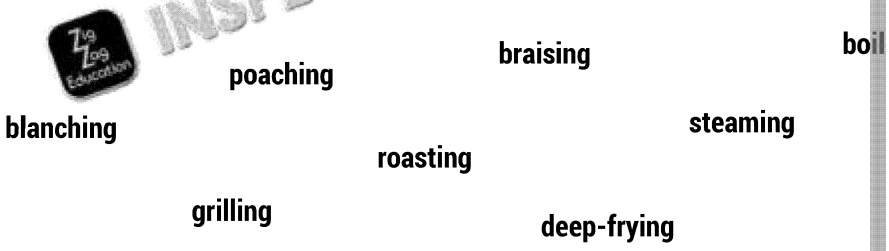
PowerPoint 11: Selecting Appropriate Cooking Methods

Discuss

- What cooking methods are good for health, and why?
- What cooking methods improve palatability?
- Which cooking and preparation methods can you choose to make food both tasty
- What foods are most often marinated, and why?

Activity

Decide which cooking methods are good fo[illegible] and which ones are not. Try to exp



Good	Good, but…	
Explanation:	**Explanation:**	**Expl**

Practice Question

Which ingredient of a marinade helps to denature proteins and increase the moistness

a) Oil ☐
b) Vinegar ☐
c) Salt ☐
d) Pepper ☐

PowerPoint 12: Proteins

Discuss

- How does protein denaturation affect the texture of food?
- What food products, other than eggs, can be used to make gas-in-liquid foams?
- What kind of flour is best for making bread?

Activity

Investigate the gluten content of various types of flour.

50 g strong flour
+ 25 ml water

50 g plain flour
+ 25 ml water

50 g self-raising flour
+ 25 ml water

1. Knead each mixture into a t
2. Cover each ball with cold w
3. Place each ball under runni
   water is clear to rinse out th
4. What is left in your hand is
5. Squeeze all the water out o
6. Which type of flour produce

Practice Question

Give two functions of strong wheat flour when maki[illegible] bread.

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PowerPoint 13: Carbohydrates

Discuss

- What temperature is needed to make a caramel, and why?
- What kinds of sauce use gelatinisation to thicken?
- What popular dishes use caramelisation, dextrinisation and gelatinisation?
- How are conduction and convection used when cooking a sauce?

Activity

Explain what happens to starch when heated with water to the following temperatures:

30 °C	
60 °C	
80 °C	
100 °C	

Practice Question

A chef noticed the following problems:

- The sauce became lumpy.
- The bread is hard and burnt.

Suggest two potential causes for why each of these may have happened.

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PowerPoint 14: Fats and Oils

Discuss

- What is the difference between an oil-in-water emulsion and a water-in-oil emulsi examples?
- What kind of pastry (other than shortcrust) also uses fat to improve its texture?
- What emulsifiers are commonly used in everyday cooking?

Activity

Link each chemical property of fat (right) t ction...

Abili ch en	Hydrophobic t
Physical state	Length of the fatty a
Immiscibility	Hydrophilic he
Plasticity	Double chemical
Ability to form emulsions	Single chemical

Practice Question

The recipe for a basic shortcrust pastry requires the use of plain flour, butter, salt and

Explain one function of fats when making shortcrust pastry.

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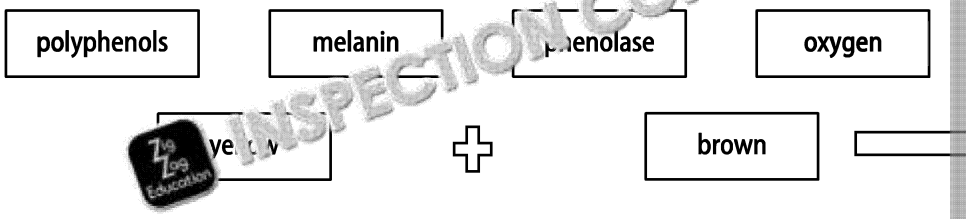
PowerPoint 15: Fruit and Vegetables

Discuss

- What else can you do to prevent enzymic browning and oxidation of food?
- What food products are the most susceptible to enzymic browning?

Activity

Reorganise the boxes below into a diagram to show the stages of enzymic browning.



Practice Questions

Which one of the factors below does not accelerate enzymic browning?

a) Oxygen ☐
b) Iron ☐
c) Stainless steel ☐
d) Copper ☐

PowerPoint 16: Raising Agents

Discuss

- What dishes use yeast as a raising agent?
- What dishes use steam as a raising agent?
- What dishes use bicarbonate of soda as a raising agent, and why?

Activity

Watch the video below on how to make a Victoria sponge cake and identify the differe

https://www.youtube.com/watch?v=

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Practice Question

A baker noticed that his bread did not rise.

Give two reasons why this may have happened.

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PowerPoint 17: Microorganisms and Enzymes, and the Sig

Discuss

- What foods are often spoilt by yeast?
- What foods are often spoilt by moulds?
- Is it safe to eat spoilt food after cutting off the bad part?

Activity

It's time to check your knowledge!

Answer the following questions.

1. Good bacteria can also be called…
   a) pathogenic ☐
   b) probiotic ☐
   c) prebiotic ☐
   d) faecal ☐

2. Ripening of foods is caused by…
   a) bacteria ☐
   b) yeasts ☐
   c) enzymes ☐
   d) moulds ☐

3. High-risk foods do not include…
   a) raw eggs ☐
   b) cooked eggs ☐
   c) cooked rice ☐
   d) raw rice ☐

4. High-risk foods are usually…
   a) high in protein ☐
   b) high in fat ☐
   c) low in protein ☐
   d) low in fat ☐

5. What will not stop yeast from spoiling food?
   a) cooking ☐
   b) freezing ☐
   c) adding sugar ☐
   d) drying ☐

6. Catalysts are the molecules which…
   a) slow down chemical reactions ☐
   b) are created in chemical reactions ☐
   c) are added to food to prevent spoilage ☐
   d) accelerate chemical reactions ☐

7. Browning of apples and other fruit is caused by…
   a) enzymes ☐
   b) bacteria ☐
   c) yeasts ☐
   d) moulds ☐

8. Yeast will grow the fastest in…
   a) foods that are low in protein ☐
   b) foods that are rich in fat ☐
   c) foods that are rich in sugar ☐
   d) foods that have a low water content ☐

Practice Question

Suggest four ways of controlling the action of microorganisms in foods.

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PowerPoint 18: Microorganisms in Food Production

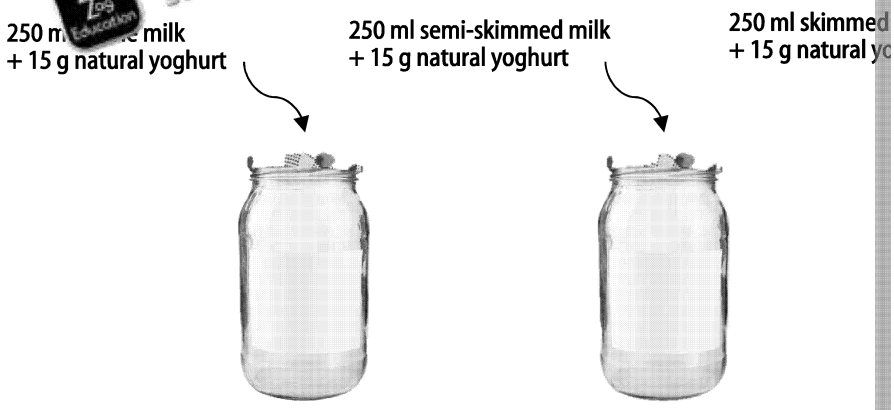
Discuss

- What different baked products are made with the use of yeast?
- What factors will stop yeast from working?
- What kinds of cheese are made in your area?
- Is it possible to make bread without yeast?

Activity

Make your own yoghurt at home.

1. Wash and sterilize 3 jars.
2. In separate saucepans [illegible] glasses of milk to 45 °C.
3. Pour the [illegible] and add a little yoghurt to each.



4. Allow the yoghurt to cool.
5. Compare the look, taste and consistency of each yoghurt.

Did the yoghurt come out as expected?

- If not, what might be the cause?
- If it did, are there any differences in flavour, appearance or texture?

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Practice Qu[illegible]n

Name two dai[illegible] products that may be suitable for people suffering from lactose intole

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PowerPoint 19: Bacterial Contamination

Discuss

- Why do some foods carry various pathogens?
- How can hygiene prevent food poisoning?
- Name various high-risk foods.
- Can food poisoning be deadly?

Activity

Match the types of bacteria with their main sources.

Note: There may be more than one answer.

Campylobacter	Raw ve
E. coli	Po
Salmonella	Untreat
Listeria	Dirty
Staphyloccus aureus	Unpaste

Practice Question

Cross-contamination can cause food poisoning, allergic reactions and anaphylactic sh

Give three ways in which cross-contamination can be avoided when preparing prawn

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PowerPoint 20: Buying and Storing Food

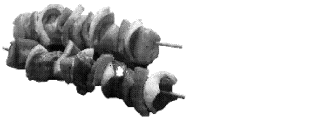
Discuss

- Why is it important to cover the food?
- What products are labelled with the 'use by' date mark, and why?
- What is the core temperature?

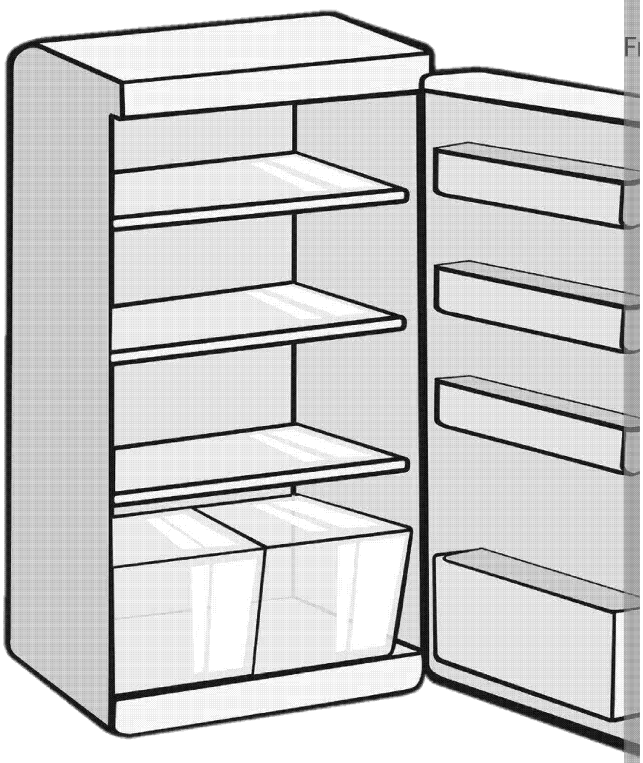
Activity

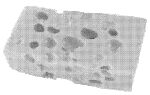
Put the foods in correct places in the fridge by drawing a line from each food to the co

Beefsteaks



Leftover kebabs





Cheddar cheese

Milk

Practice Question

Which one of the following statements is true?

a) The danger zone temperature range is between 5 °C and 75°C.
b) The chilled temperature range is between -5 °C and +5°C.
c) Foods labelled with the 'use by' date mark can be safely stored at ambient tempe
d) Foods labelled with the 'best before' date mark can be safely stored at ambient te

PowerPoint 21: Preparing, Cooking and Serving Food

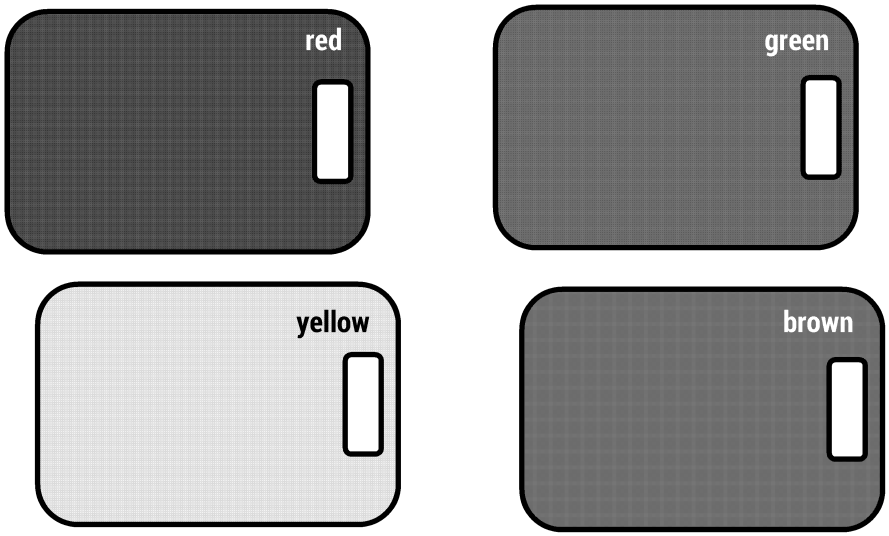
Discuss

- What is meant by 'appropriate care with high-risk foods'?
- Why is the appropriate temperature so important?
- How does colour-coding of utensils help to avoid cross-contamination?
- Is the Food Hygiene Rating Scheme really necessary?

Activity

Match the food with a chopping board to apply the rules of colour-coding by writing ea

wholemeal bread	**whole, raw trout**	**raw chicken**
carrot	**bok choi cabbage**	**grilled bee**
silken tofu	**cooked broccoli**	**smoked sa**



Practice Question

Explain the reasons why when reheating food, it should reach 75°C.

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PowerPoint 22: Factors Which Influence Food Choice

Discuss

- What other factors may force you to modify a recipe?
- Are there ways of increasing food availability worldwide?
- How do people use food to celebrate different occasions?

Activity

Calculate the cost of the recipe for a soup below. Use a separate piece of paper for yo

Ingredient	Amount needed	Price
Cooked ham	200 g	£ 11.5 per 1 kg
Leeks	300 g	£ 1.90 per 1 kg
Sweet potatoes	700 g	£ 2.00 per 1 kg
Chicken stock cubes	1 piece	£ 1.25 per 8 pcs
Evaporated milk	200 ml	£ 4.00 per 1 l
Water	250 ml	£ 0.25 per 1 l
Black pepper	5 g	£ 7.00 per 1 kg
		TOTAL COST:

What is the cost of a single portion if the recipe makes four portions?

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Practice Question

Which one of the following is untrue about food choices?

a) The availability of food depends on where a person lives ☐
b) People often choose more sugary foods to celebrate with. ☐
c) People often choose to drink alcohol to celebrate. ☐
d) The seasonality of food does not define food choices. ☐

PowerPoint 23: Food Choices

Discuss

- Are allergens easy to avoid?
- How does buying only local produce affect the diversity of the diet?
- Do people still follow the dietary restrictions stated by religion? If not, why is this?
- Is it easy to modify a recipe to make it suitable for different religious groups?

Activity

A traditional cottage pie recipe contains:

- Beef mince
- Onion
- Carrot
- Tomatoes
- Beef stock
- Potatoes
- Parsnips
- Horseradish
- Butter
- Milk

Decide which groups of people mentioned in this lesson can and cannot eat it.

- People with an allergy to milk .....
- Christians .....
- Hindus .....
- Buddhists .....
- Organic .....
- Gluten-intolerant .....
- Rastafarians .....
- People allergic to nuts, eggs, wh[illegible] fi[illegible] .....
- Muslims .....
- Jews .....
- Sikhs .....
- Lactose-intolerant .....

Practice Question

Joe ordered pitta bread with olives for a starter, tabbouleh (made from couscous)
and wheat sprouts for a main, and pancakes with golden syrup for dessert. He dra

Give three reasons why this meal is not suitable for his friend who suffers from co

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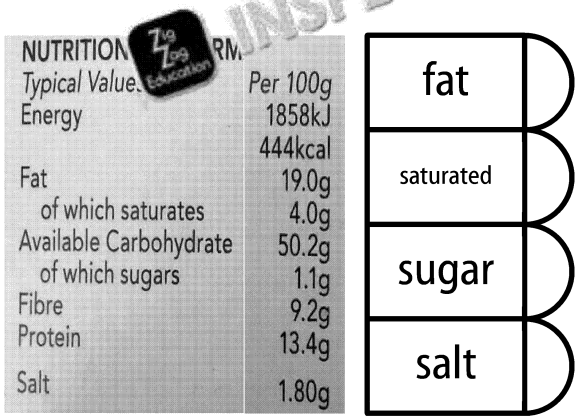
PowerPoint 24: Food Labelling and Marketing Influences

Discuss

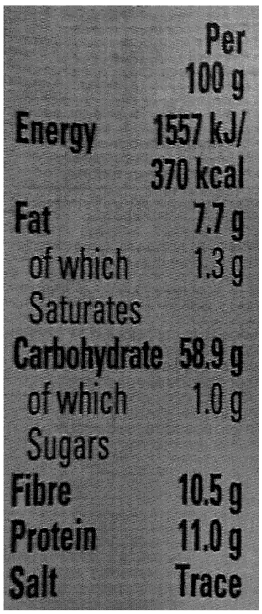
- Is traffic light labelling effective and helpful when making food choices?
- Is it easy to find all the necessary information on a food label?
- What other marketing techniques do you know of?
- Are children and teenagers susceptible to marketing? Is there anything else that i

Activity

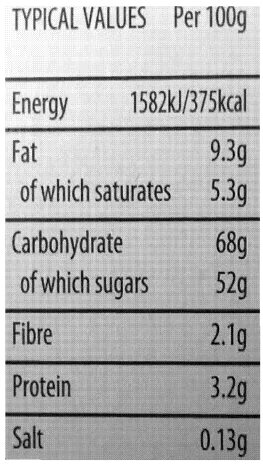
Analyse the labels of these products and c[illegible]de the traffic lights to indicate whe
medium or low in the given nutri[illegible]s.



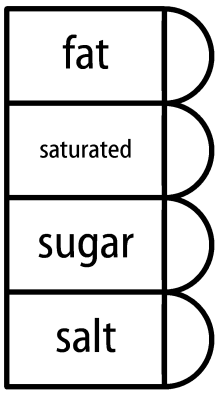
NUTRITION [illegible]RM	
Typical Value[illegible]	*Per 100g*
Energy	1858kJ 444kcal
Fat	19.0g
of which saturates	4.0g
Available Carbohydrate	50.2g
of which sugars	1.1g
Fibre	9.2g
Protein	13.4g
Salt	1.80g



	Per 100 g
Energy	1557 kJ/ 370 kcal
Fat	7.7 g
of which Saturates	1.3 g
Carbohydrate	58.9 g
of which Sugars	1.0 g
Fibre	10.5 g
Protein	11.0 g
Salt	Trace



TYPICAL VALUES	Per 100g
Energy	1582kJ/375kcal
Fat	9.3g
of which saturates	5.3g
Carbohydrate	68g
of which sugars	52g
Fibre	2.1g
Protein	3.2g
Salt	0.13g



Practice Qu[illegible]n

Which one of [illegible]following food products does not contain a product classified as a m

a) Sushi ☐
b) Bolognese sauce ☐
c) Hummus ☐
d) Waldorf salad ☐

PowerPoint 25: British and International Cuisines

Discuss

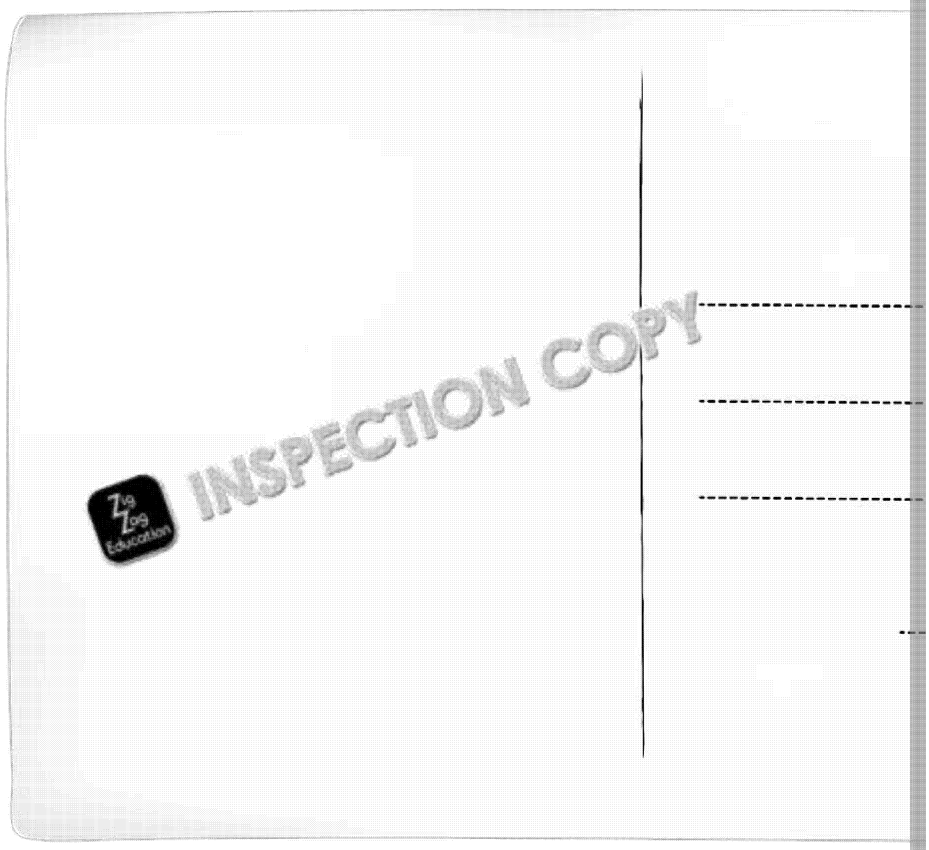
- What other cuisines do you know? Are they very popular worldwide?
- Do people choose to eat traditional food or do they prefer to modify the old recipe
- What other eating patterns can you name? Where do they come from?

Activities

1. Match each food product or dish with its country of origin.

churro	Mexico
gnocchi	Vietnam
quesadillas	Thailand
chicken tikka masala	Morocco
sushi	Italy
pad thai	Great Britain
kimchi	Japan
tagine	Spain

2. Imagine that you're visiting India. Write a postcard to your parents or friends and tried so far.



Practice Question

Which one of the following is not characteristic of British cuisine?

a) Couscous ☐
b) Lamb ☐
c) Thyme ☐
d) Potatoes ☐

3.5.3 Sensory evaluation

PowerPoint 26: Sensory Evaluation

Discuss

- Is it easy to be a professional tester? Can anybody be one?
- Are taste panels easy to set up? Why or why not?
- Which tasting method would you use for different foods?

Activity

Your challenge is to check how sensitive your friends are to the salty taste.

1. Prepare 5 clean jugs.
2. Carefully measure 1 litre of water into each jug.
3. Very carefully measure the amount of salt and pour into each jug:
   - 0.5 g into jug 1
   - 1.0 g into jug 2
   - 1.5 g into jug 3
   - 2.0 g into jug 4
   - 0 g into jug 5 (this is the control jug)
4. Code the jugs and mix them so that they are not in order. You can name them 'A, B, C, D, E' or random numbers, e.g. '547', '635', '012',.
5. Remember that YOU are the ONLY person who knows which jug is which.
6. Now ask your friends to try a sample of water from each jug and order them from

1. Did your friends order the samples in the correct order?

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2. Were they able to identify the salty taste in each of the samples?

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3. Who had the lowest tasting threshold (could taste even the lowest concentration

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4. Do you think they could make good professional testers?

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Practice Question

Give two reasons why it is important to control certain conditions when setting up a ta

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3.6.1 Environmental impact and sustainability of food

PowerPoint 27: Food Sources

Discuss

- What foods are produced near you?
- Is it possible to base a balanced diet on local foods only?
- What food products are most often genetically modified? Why?
- Can sustainable farming coexist with intensive farming?

Activity

Watch the video below and answer the questions.

https://www.ted.com/talks/pamela_ronald_the_case_for_engineering_our_food

1. Is it possible to reconcile organic farming and GM food?

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2. How can climate changes affect food sustainability?

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3. Was genetic modification invented in the twentieth century?

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4. What is grafting?

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5. How can genetic modifications support food sustainability?

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Practice Question

What are the advantages of genetically modified food products?

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PowerPoint 28: Food and the Environment

Discuss

- Is it possible to stop using food packaging?
- Would it be possible to eat only local foods?
- When are more greenhouse gases produced – when growing plants or when rearin
- Is organic food healthier than non-organic food?
- How can YOU lower your carbon footprint?

Activity

Visit the website and calculate your own personal carbon footprint:
https://footprint.wwf.org.

Compare your results with your friends.

- Is your carbon footprint lower or higher than theirs?
- Is there anything you can do to lower your carbon footprint?

Practice Question

What are the disadvantages of using food packaging?

PowerPoint 29: Sustainability of Food

Discuss

- Is it possible to achieve food sustainability?
- Is it possible to avoid hunger in the world?
- Is it really the case that there is insufficient land for growing food?
- Can we stop global warming?

Activity

Order the stages of global warming by putting the numbers 1–7 in the boxes.

	Glaciers begin to melt and sea levels rise.
	Food shortages occur and people begin to die from hunger.
	The average temperature on Earth rises.
	Floods cause damage to cities, and crop failure.
	Greenhouse gases create a layer which prevents warmth from escaping.
	Water evaporates quickly from seas and causes massive rainfall.
	Sunrays are sent from the Sun and reflected by Earth's surface.

Practice Question

Explain the positive and negative factors that can affect the availability of food.

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PowerPoint 30: Food Production

Discuss

- How can drying affect the nutritional value of food?
- Can foods be eaten without being processed at all?
- Would it be safe to eat raw food only?
- How does secondary processing affect the sensory characteristics of food?

Activity

Match each stage of chee[illegible] with the explanation.

Pa[illegible]sation	Curd is cut into larg[illegible] off. Curd is left to s[illegible]
Heating to 32–42 °C	Harmful bacteria ar[illegible]
Adding starter cultures	Cheese is salted an[illegible]
Adding rennet	As fermentation pro[illegible] off the curd, so the [illegible] is pressed into hoop[illegible]
Cutting the curd	The enzyme coagul[illegible] out water (whey)
Draining and shaping	Making bacteria-fri[illegible]
Salting and maturing	Bacteria ferment su[illegible] lower the pH of mil[illegible]

Practice Question

Which one of the following processes is most likely to change the sensory characteris[illegible]

a) Ultra-heat treatment ☐
b) Pasteurisation ☐
c) Microfil[illegible] ☐
d) Sterilis[illegible] ☐

PowerPoint 31: Technological Developments Associated with Better

Discuss

- Why may people choose to avoid food additives?
- Is fortification of food still necessary?
- Is margarine better than butter?
- Are breakfast cereals really healthy for children?

Activity

Answer the following questions.

1. Which of the following is added to flour by law?
   a) thi ☐
   b) fo ☐
   c) iron ☐
   d) niacin ☐

2. Aspartame is a common…
   a) sweetener ☐
   b) emulsifier ☐
   c) stabiliser ☐
   d) colourant ☐

3. Fat spreads are obligatorily fortified with…
   a) vitamins A and E ☐
   b) vitamins A and F ☐
   c) vitamins A and D ☐
   d) vitamins D and E ☐

4. The cholesterol-lowering substance in fat spreads is called…
   a) phytolinnol ☐
   b) phytosterol ☐
   c) phytosolol ☐
   d) phytohormone ☐

5. Which of the following substances is added to flour to prevent beriberi?
   a) thiamin ☐
   b) calcium ☐
   c) iro ☐
   d) nia ☐

6. Sulfur dioxide is a common preservative which can cause…
   a) poisoning ☐
   b) ADHD ☐
   c) allergic reactions ☐
   d) autism ☐

7. By law, skimmed milk has to be fortified with…
   a) vitamin D ☐
   b) vitamin A ☐
   c) vitamin E ☐
   d) vitamins A and D ☐

8. Which of the following food products is NOT fortified by law?
   a) bread ☐
   b) semi-skimmed milk ☐
   c) margarine ☐
   d) butter ☐

9. High cholesterol levels may cause a dis… …
   a) arthritis ☐
   b) anaemia ☐
   c) at… …ler… … ☐
   d) ar… …a ☐

10. Lecithin is a natural emulsifier present in…
   a) egg yolk ☐
   b) vegetable oil ☐
   c) butter ☐
   d) vinegar ☐

Practice Question

What are the advantages of using additives in food?

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