

Food Preparation and Nutrition



REVISION BOOKLET 6 WHERE FOOD COMES FROM

(PROVENANCE)

Name:
Tutor Group:

Keywords

Complete the table below with an overview of the keywords.

Food and the Environment		Food Provenance		Sustainability	
Keyword	Definition	Keyword	Definition	Keyword	Definition
Transportation		Traceability		Sustainable Food	
Food Miles		Field to Fork		Green House Gas (GHG)	
Climate Change		Barn-Reared Animals		Crop Rotation	
Carbon Footprint		Organic		Fairtrade	
Recycling		Genetically Modified (GM)		Red Tractor	
Packaging		Free Range Farming			
Landfill		Fish Farms			
Food Waste		Hatcheries			
Composting					

Food and the Environment

‘Food Provenance’ refers to where food comes from- where it is grown, raised or reared, i.e. its point of **origin**. In many cases the food we eat can come from many different sources. Food provenance tells us what we are eating as well as where it comes from.

Seasonality

Seasonal foods are home-grown products that are traditionally grown or produced during particular seasons of the year, e.g. in the UK strawberries are harvested between June and September.

Complete the table below with examples of fruits and vegetables that are grown seasonally in the UK.

Season	Fruits	Vegetables
Spring		
Summer		
Autumn		
Winter		

Food Miles

Food miles are the distance food travels from its point of origin to your table.

The planes, boats and lorries used to transport food around the world create carbon dioxide gas, which is a contributory factor to global warming and climate change (**carbon footprint**).

Mind map ways in which food miles can be reduced:

Where Food Comes From

Draw lines showing the path of the products in the table to the UK.

What does the term “food miles” mean?



Food	Country	Miles
Apples	USA	3675
Celeriac	Holland	325
Fine Beans	Kenya	4263
Grapes	Chile	7165
Stringless Beans	Morocco	1292
Lamb Shanks	New Zealand	11682
Mango	Peru	5742
Potatoes	Israel	2212
King Prawns	Indonesia	7279
Tomatoes	Canary Islands	1798

Highlight the foods above that can be farmed in the UK.

What do you think about the distance food travels to the UK? Do you think we should make changes to our shopping habits?
Explain your answer in full sentences.

Sustainability

Food sustainability looks at the impact of producing and consuming food on the world's economy. Sustainability means that the resources we use should not exceed the earth's capacity to replace them. Sustainable food should be produced, processed, bought, sold and eaten with consideration to the below principles.

Complete the table below explaining these principles and how they can be met:

1. Aiming to be waste-free	5. Selecting fish only from sustainable sources
2. Buying local and seasonal foods	6. Getting the (diet) balance right
3. Eating a healthy diet	7. Growing our own
4. Choosing Fairtrade certified products	



Modern Intensive Farming

After the Second World War, farmers were offered subsidies to farm intensively to produce large scale, low cost products.

These methods are employed all over the world, resulting in large surpluses of food being produced.

Farming Methods

Complete the table describing each style of farming method:

Barn-Reared Animals	Organic Foods	Free-Range Farming
Hydroponic Farming	Fish Farming	Genetically Modified (GM) Foods

Traceability and Animal Welfare

Under EU law, all meat and poultry for human consumption has to show **traceability**. Under the law, traceability means the ability to track any food, feed, food-producing animal or substance that will be used for consumption through all stages of production, processing and distribution.

Discuss. What are the benefits of traceability to the consumer?

Packaging Symbols

Animal Welfare

RSPCA Assured



Red Tractor



Other Labelling Images

Lion Mark



Organic



Packaging

There is no doubt that food packaging is a necessity for some products, but it is important to consider the types of packaging material that is used and the impact this has on the environment.

Complete the table below with the positives and negatives of different types of food packaging:

Material	Used For	Positives	Negatives
Paper and Cardboard			
Glass			
Plastic			
Metal			

Explain the four main reasons why food is packaged:

Plastic: An Environmental Problem

Read the article below, highlighting key concerns regarding the use of plastic in the food industry:

Supermarkets urged to create plastic-free aisle in every store

By Sarah Knapton, Science Editor

10 February 2017

Supermarkets are being urged to create a plastic-free aisle in every store to prevent tons of waste packaging ending up in the world's oceans.

Around 300 million tons of plastic are produced globally each year, yet just 12 per cent is recyclable, and much of it is washed into the seas where it is toxic to wildlife.

Environmental activist organisation A Plastic Planet will lobby Britain's major supermarkets in the coming weeks to urge them to offer food packaged only in biodegradable materials.

The Government is considering adding up to 20p to plastic bottles, which could be reclaimed when they are recycled, in an effort to cut waste. The 5p charge that was added to plastic bags in October 2015 has already led to usage falling by 80 per cent. But campaigners are urging retailers to go further.

Sian Sutherland, a trustee of Plastic Oceans Foundation, is to meet with representatives from all the main supermarkets. She said: "There is a growing realisation that plastic is not disposable and is harming our planet, yet the maddening thing is that it's virtually impossible to buy food without packaging.

"We have more choice than ever for everything. There are countless gluten-free, organic or kosher aisles, and yet we have absolutely no choice about buying food that is packaged in plastic.

"It is a double whammy problem because not only does it make us feel guilty about all this packaging we are using, but science is starting to show us that wrapping food in plastic can bring health problems."

The campaign A Plastic-Free Aisle, will be launched by A Plastic Planet in the next few weeks, and environmentalists say their plan is "clear, simple and doable".

Supermarkets including Tesco, Waitrose and Sainsbury's said they would respond to the proposals once discussions with campaigners had taken place.

The call for action comes amid the launch of film A Plastic Ocean, which is backed by the Plastic Oceans Foundation and is being shown at special screenings across Britain to highlight the sheer scale of plastic pollution in the sea.

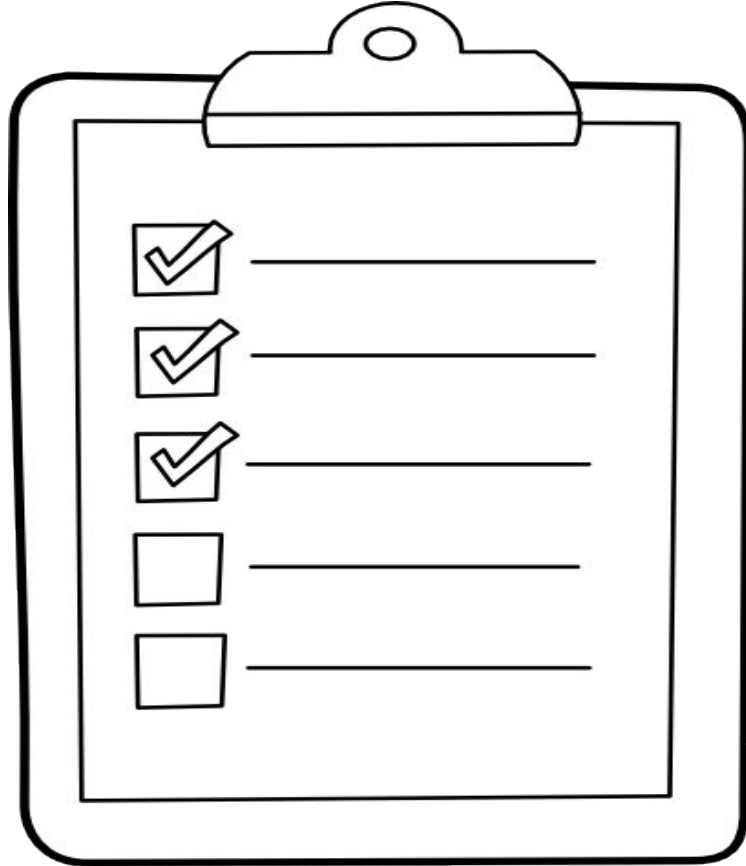
Sir David Attenborough, who was interviewed for the film, said: "The whole of the ecosystems of the world are built on healthy oceans and if that part of the planet becomes dysfunctional and goes wrong, the whole of life on the planet will suffer."

Food Waste

Nearly a third of all food produced ends up in landfill sites where it gives off methane gas as it decomposes. This gas adds to GHG emissions.

Ways to Reduce Food Waste

Produce a list of ways to help families reduce the amount of waste food they produce.



☒	_____
☒	_____
☒	_____
☐	_____
☐	_____

Why is food waste such a global problem?

Food Poverty

Food poverty can be defined as the inability to obtain healthy, affordable food. Despite the UK being the sixth richest country at the world, 4 million people are affected by food poverty.

Explain the four main factors that influence food poverty:

Accessibility	Availability
Affordability	Awareness

What initiatives are being used in the UK to try to tackle food poverty?

Why do you think there has been such a rise in people needing to use food banks?

It is important for the catering industry to play its part in considering the environment. Not only for the bigger picture of global warming and management of natural resources but also as a means of saving money for the business.

The Greatest Crime in Christendom

To buy—to cook—to eat more than you need; to waste a single morsel of food that can be used—is a crime.

Ten million have died bravely on the field of battle. They at least had a chance. They gave their all willingly and unselfishly.

Over twenty million have died of starvation—without even a chance to fight. To these death has come only as a relief from torture worse than death—starvation.

It is *our* job—yours and ours—to *save food* so that the millions of starving people in Europe may have **SOMETHING** to eat.

Eat Less Waste Nothing

Live Simply—avoid all food waste.

United States Food Administration
BLINDING EDUCATIONAL DIVISION
CHICAGO

Don't Waste Food

www.maine-memory.net/item15116
© Maine Historical Society

Food

- 1- buy it with thought
- 2- cook it with care
- 3- use less wheat & meat
- 4- buy local foods
- 5- serve just enough
- 6- use what is left

don't waste it

U. S. FOOD ADMINISTRATION

WASTE NOT—WANT NOT



A vintage illustration showing a young woman in a yellow dress and an older woman in a white apron over a black dress. The older woman is holding a jar of preserved food. They are standing behind a table laden with various fresh vegetables like carrots, pumpkins, and tomatoes, as well as several jars of preserved foods. The scene is set against a simple background with a light sky and dark ground.

PREPARE FOR WINTER

**Save
Perishable Foods
by
Preserving Now**



A circular logo for the Golden Rule Canning Co. It features a central illustration of a woman in a bonnet and apron, possibly a saint or a historical figure, holding a staff. The text "GOLDEN RULE CANNING CO." is written around the top inner edge of the circle, and "ESTD 1888" is at the bottom.

[illegible]

Food Wastage

Read the article below, highlighting key concerns regarding food wastage in the UK:

Household food waste level 'unacceptable'

30 April 2017

The level of household food waste in England is "unacceptable" and householders have a key role to play in reducing it, MPs have said.

The Environment, Food and Rural Affairs Committee said 7.3m tonnes of food was wasted in UK households in 2015. The committee said shops should relax standards that prevent the sale of "wonky vegetables" to help cut waste. And the next government should consider whether "best before" dates were needed, it said.

Committee chairman Neil Parish said: "One-third of food produced for human consumption is lost or wasted globally, and in the UK over £10bn worth of food is thrown away by households every year.

"Economically, food waste costs households hundreds of pounds a year and causes increased disposal costs to local authorities, pushing up council tax bills.

"Socially, it is a scandal that people are going hungry and using food banks when so much produce is being wasted.

"And environmentally, it is a disaster, because energy and resources are wasted in production only for the food to end up rotting in landfills where it produces methane - a potent climate-changing gas."

Food waste costs the average person in the UK £200 per year, the report said.

The average household lost £470 a year because of avoidable food waste, while those with children lost £700, it said. The report said about two-thirds of the potential reduction in UK food waste would need to come from action at a household level. It said it would be "hugely challenging" to reduce food waste further and would require "a considerable investment of resource".

In their report, Food Waste in England, the MPs said:

- The incoming government should establish a national food waste target for England.
- It should examine how lessons on food and avoiding waste could be incorporated into the curriculum.
- Waste reduction body Wrap, a charity which helps people and businesses reduce waste, should have sufficient money from the government to maintain its efforts in raising awareness.
- Food businesses and retailers over a certain size should be forced to separate food waste for collection.
- Supermarkets should be required by the government to publish data on the amount of food they bin. The report commended Tesco for already doing so and Sainsbury's for moving in the same direction.
- Retailers should increase the amount of surplus food they give away to charities.
- Retailers should improve their packaging by, for example, increasing resealable packets.
- Retailers should make food storage instructions clearer on packaging.
- The next government should work with restaurants on reducing waste by, for example, offering smaller portions, reducing the amount of sides, and encouraging the taking home of leftovers.

It also called for a review of whether "best before dates" were needed at all. While "use by" dates refer to food safety, "best before" labels refer only to quality. Foods will be safe to eat after the "best before" date, but may not be at their best. The report said current date labelling was unnecessarily confusing, and guidance should be issued to the industry by the end of the year.

The report also highlighted the issue of suppliers' food being rejected for cosmetic reasons. It said up to a quarter of apples, up to a fifth of onions and up to about an eighth of potatoes were rejected by supermarkets on cosmetic grounds alone.

Food Labelling

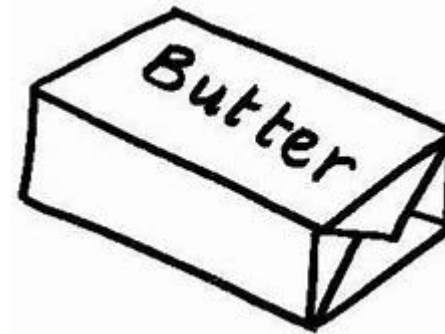
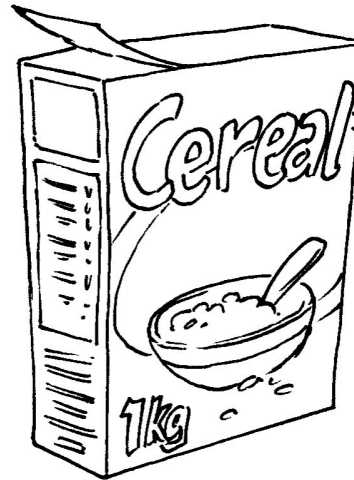
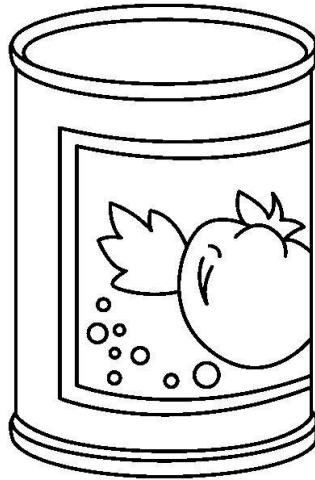
Food labelling information can be a useful tool for consumers when they are choosing between different products. The aesthetic appeal of the label and packaging is also important and can attract customers to choose a particular product.

The Food Labelling Regulations 1996 require certain information to be given on all pre-packed foods.

Look at the food packaging. Discuss in your groups what information you can see.

Label the packets below with information. Highlight which ones are **legally** required to be on packaging.

Evaluate the importance of information given on food labels.



Keywords

Complete the table below with an overview of the keywords.

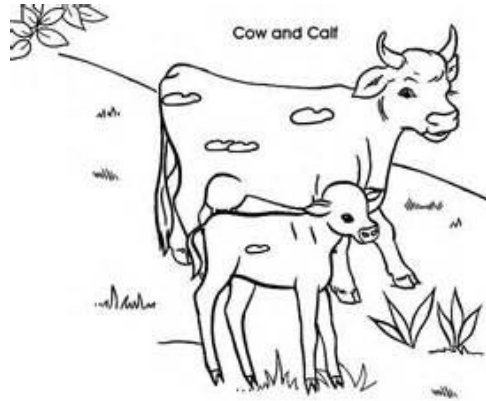
Food Production		Food Processing	
Keyword	Definition	Keyword	Definition
Homogenised		Secondary Processing	
Primary Processing		Milling	
Pasteurised		Preservation	
Skimmed		Temperature	
Semi-Skimmed		Drying	
Ultra-Heat Treated (UHT)		Chemical Preservation	
Sterilised			
Evaporated			
Condensed			

Food Production: Dairy

Milk comes from a variety of animals; in the UK we drink mainly cow's milk.

Primary Processing of Milk

Dairy cows need to have given birth to calves before they can start producing milk.



How often do dairy cows need to be milked? Why?

How long can most cows produce milk?

What happens to the cows when they can no longer produce milk?

What are cows fed? Are they fed the same all year round?

On average, how many litres of milk does a cow produce a day?

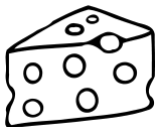
Secondary Processing

Secondary processing can be used to process milk into other dairy products.

Mind map as many as you can below:

How is Cheese Made?

Link the milk to the cheese. Explain the key processes that happen to the milk to turn it into cheese.



Primary Processing of Milk

Milk is bottled according to its fat (cream) content. Most milk has a fat content of around 4%. However, during processing the fat may be reduced or removed.

By law all milk must be heat treated to destroy any pathogenic bacteria and ensure that it is safe to drink, this is called **pasteurisation**.

Complete the table below with a definition of for each type of milk available to purchase in the UK.

Pasteurised Milk	Homogenised Milk	Sterilised Milk	Ultra Heat Treated Milk (UHT)
Processed Milks			
Evaporated Milk	Condensed Milk	Dried Milk	

Food Production: Wheat Milling

Milling wheat grain into flour is an example of primary processing. Draw a flow diagram summarising how wheat is milled commercially.
Include the key stages required to turn wheat into flour.

Types of Wheat Flour	
Wholemeal	Stoneground
Brown	Organic
White	Granary

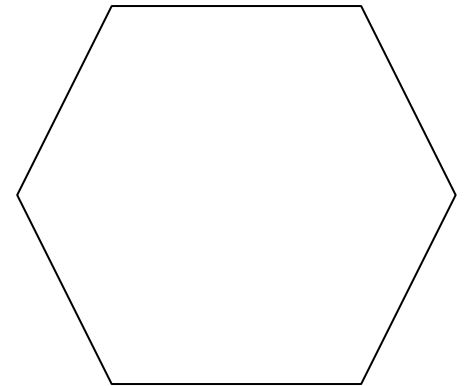
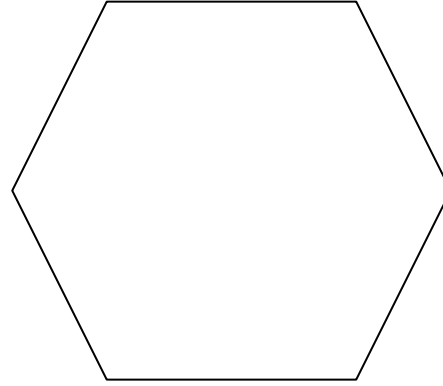
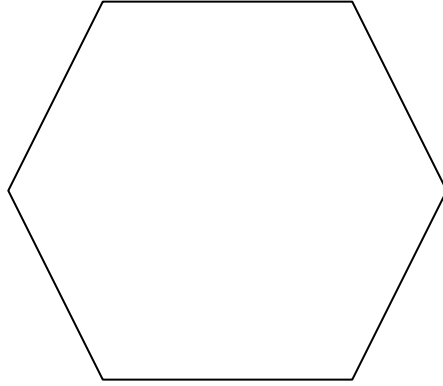
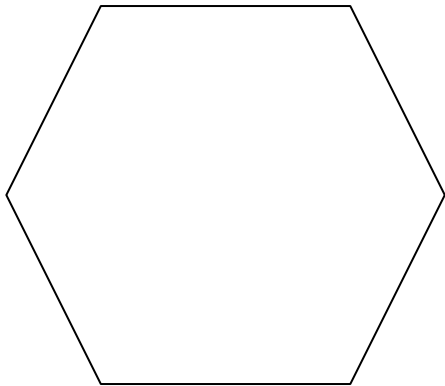
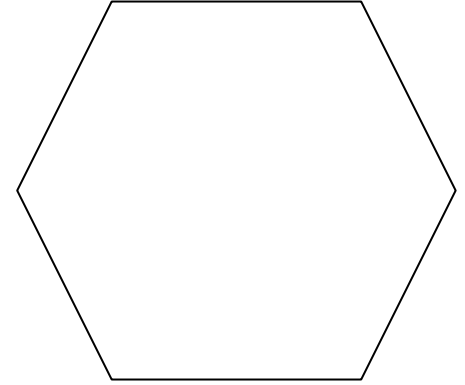
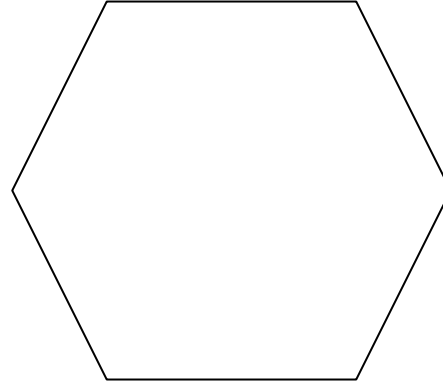
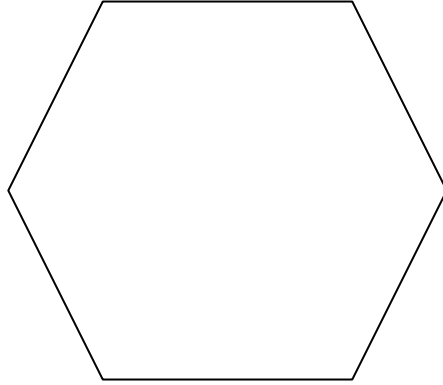
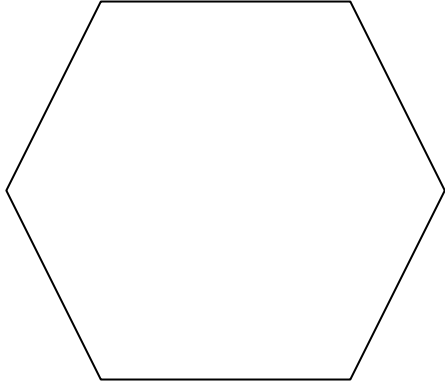
Secondary Processing

Flour can be further processed to make other products such as pasta or bread.
Mind map as many other flour based products as you can below:

Method for Bread Making

Dough consists of strong flour, water, salt and yeast which are kneaded together to the required consistency as a suitable temperature. It is then allowed to prove (to rise and increase in size), when the yeast produces carbon dioxide and water, which aerates the dough. When baked it produces a light digestible product with flavour and colour.

Complete the storyboard below, detailing the steps of traditional bread making.



Food Preservation

There are 4 main types of food preservation: high temperature, low temperature, drying, chemical.
Complete the table explaining these preservation methods.

	Method	Details
H i g h	Canning	
	Irradiation	
	Pasteurisation	
	Sterilisation	
	Ultra-Heat Treatment (UHT)	
L o w	Freezing	
	Chilling	
	Cold Storage (CA)	
D r y i n g	Sunlight	
	Oven Drying	
	Roller Drying	
	Spray Drying	
	Accelerated Freeze Drying (AFD)	
C h e m i c a l	Vinegar (Pickling)	
	Sugar	
	Salt	
	Smoking	
	Alcohol	
	Vacuum Packaging	
	Modified Atmospheric Packaging (MAP)	

Fortifying and Modifying Foods to Support Better Health

Functional and fortified foods have a higher nutritional value than the original products.

Functional Foods

Functional foods deliver additional or enhanced benefits over and above their basic nutritional value. Some functional foods are generated around a particular functional ingredient. Functional foods and drinks may provide benefits in health terms, but should not be seen as alternatives to a varied and balanced lifestyle.

Complete the table describing the following examples of functional foods:

Probiotics	Prebiotics

Fortification

Fortification involves the addition of nutrients to foods including some that were originally present in the food.

Explain why nutrients might be added to foods.

List the key nutrients added to fortify breakfast cereals.

Name 2 diseases that eating fortified cereals may help reduce.

What nutrients are required, by law, to be added to flour?
