

Section Four — Knowledge Organiser

If you can't tell your jam from your jelly, or need a refresher on sustainable fishing, this spread has you covered...

Grown Food

Intensive farming

- Uses **artificial** fertilisers & pesticides to increase **yield**.
- **BUT** these can harm **wildlife** & possibly **human health** too.

Organic farming

- Uses **organic** fertilisers, **crop rotation** & **natural** pesticides.
- **Better** for the **environment** **BUT** lower yield & costs more.

- **GM crops** have their genes altered to give **desirable characteristics**.
- Can be **quick, high yield & cheap**. Can also have **extra nutrients, last longer & ripen earlier**.
- **BUT** unknown **long-term health effects & concerns** about genes getting into **other plants**. **Restricted** in some places, e.g. EU / **popular** in others, e.g. USA.

Reared Food

Factory-farmed

- Kept in **cages** so **not much space**. Some given **growth hormones**.
- **Quick & cheap** **BUT** raises **ethical concerns**.

Free-range

- Given **more space & often free to roam**.
- More **ethical** **BUT** expensive to produce & buy.



Red Tractor & RSPCA Assured labels show that food meets welfare standards.

Caught Food

- 1 **Trawling** — nets are dragged through water. Lots of fish are caught at once **BUT** can **destroy habitats**, cause **overfishing** & catch **unwanted animals**.

Overfishing can lead to a species going extinct.

Sustainable fishing aims to **conserve** fish stocks, e.g. different fishing methods, quotas & regulating net size.

- 2 **Fish farming** — lots of fish are raised together in tanks / enclosures. It is efficient **BUT** **overcrowding** increases risk of **disease**.



Waste Food & Packaging

Food waste comes from...

The home, e.g. spoiled food.

Producers & retailers, e.g. food rejected for being damaged in transportation.

Ways to **reduce waste**: careful meal planning, storing food correctly, using / freezing leftovers, donating unwanted food.

- **Packaging protects / preserves** food but it takes **energy** to produce, uses up space in **landfill sites** & can **harm wildlife**.
- **Re-use & recycle** packaging & shopping bags. Choose items with **biodegradable packaging / no excess packaging**.

Global Food Production

There are lots of challenges when it comes to feeding the global population...

Climate Change

- **Greenhouse gases** from food production contribute to **climate change** which affects crops & food, e.g. **drought, flooding, new pests**.

Food Poverty

- Some people **cannot afford** / have **limited access** to nutritious food & may rely on **donations**.
- **Cheaper** foods tend to be **unhealthier** — can lead to **malnutrition** & other **health problems**.

Food Security

- When people have enough **nutritious** food — achieved through **availability, access & utilisation**.
- Many factors affect food security, e.g. **climate, wealth, rising population & insufficient land**.

Global demand for food is increasing. GM crops & less meat / food waste may help meet this demand.

Food Miles & Carbon Footprint

Some food **can't grow** at all in the UK (or is only available **seasonally**), so it is **imported**. Importing food can also be **cheaper**, but **transporting** it contributes to **global warming**.

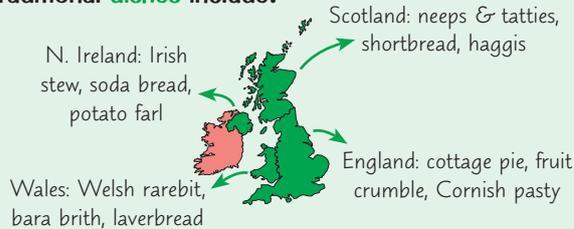
Locally-bought food has few **food miles** (better for the **environment**), supports the **local economy** & is often **fresher** **BUT** can be **seasonal & spoils** more quickly (if unpackaged).

Carbon footprint = amount of **greenhouse gases** something produces. Food's carbon footprint comes from **growing, processing, packaging & transporting** it.

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British Cuisine

- Techniques include **stewing, roasting & baking**.
- Normally eat **three meals** a day.
- Main courses are traditionally **meat or fish** served with **potatoes, veg & a sauce**.
- Traditional **ingredients** include **meat, fish, veg, dairy, eggs & fruit**.
- Traditional **dishes** include:



- Modern versions might **switch ingredients**, e.g. chilli con carne & sweet potato cottage pie, or reflect a **multicultural** society, e.g. chicken tikka masala.
- Healthy eating model is the **Eatwell Guide**.

Japanese Cuisine

Serving style	Nearly all meals served with rice
Techniques	Steaming, boiling, frying
Equipment	Often use rice cookers & woks
Eating habits	Largest meal eaten early evening, often use chopsticks to eat
Common ingredients	Rice, noodles, saké / mirin, seafood, pickled veg, matcha tea
Dishes	Sushi, tempura, gyoza, ramen, miso soup

Modern twists might involve **fusions** with Western dishes, e.g. BBQ pulled pork gyoza.

Healthy eating model is the **Japanese Food Pyramid** — based on traditional Japanese foods, e.g. 5-7 servings of grains & 5-6 servings of veg per day.

You might learn about different international cuisines to the two cuisines covered here.

Primary Food Processing

Makes **raw** foods **ready** to eat or cook, e.g:

- Fruit / veg** are **washed & sorted** by size / shape.
- Meat** is **hung & dried** to make it tender & improve flavour.
- Wheat grains** are **milled** to make **flour**.
- Milk** is **treated** by **pasteurisation** or **UHT** to **kill bacteria**.

Processing foods **changes** their **sensory & nutritional** properties:

- Salt-cured meat tastes salty.
- Heat treatment for milk can destroy vitamins.
- Peeling potato skins removes a source of fibre.

Spanish Cuisine

Stewing, charcoal / plate grilling & cooking in a sauce are common techniques.

Typical ingredients are **meat and seafood, herbs & spices, fruit & veg, olive oil**.

Dishes include **churros, serrano ham, patatas bravas, paella & tapas**.

Lunch is **largest meal & dinner eaten late**. **Wine** often served with meals.

Quinoa paella or **flavoured churros** are examples of **modernised** recipes.

Healthy eating model is the **NAOS Food Pyramid** which promotes a **Mediterranean** diet.

Secondary Food Processing

Primary processed foods turned into other foods:

Bread: Flour is mixed with **water & yeast**, then **kneaded, proved & baked**.

Jam: Fruit is boiled with sugar & sets (due to **pectin**).

Jelly: Fruit juice & **sugar** are heated then **gelatine** is added so it **sets**.



Cheese: Milk is processed with **bacteria & rennet** to make **cheese**.

Food Fortification & Modification

Fortification = nutrients are **added** to food:

White flour	Iron, thiamin, niacin, calcium
Breakfast cereals	Folic acid, iron, thiamin
Margarine & spreads	Vitamins A & D, and plant sterols in cholesterol-lowering spreads.

BUT manufacturers may add **extra nutrients** to **processed foods** as a '**marketing tool**' to make them **seem healthier**.

Additives (natural & artificial) are **added** to food to **improve** it:

- Preservatives** make food last longer, e.g. **vinegar, salt, nitrates**.
- Colourings** improve visual appeal, e.g. **caramel, tartrazine**.
- Flavourings** improve taste / aroma, e.g. **herbs, aspartame, MSG**.
- Emulsifiers / stabilisers** preserve shape & texture, e.g. **lecithin**.

BUT some additives raise **health concerns**. They must pass a **safety test** before being used.