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3. Thinking Together about Food - Baseline Activity:

Why are people hungry?[1] This activity is about causes of hunger around the world and actions that can reduce it. It records what students think and know. Do this at the start and repeat it at the end of the topic to show how students' knowledge and perceptions of the world have been extended or changed by the activities.

What you need:

- A question sheet asking: 'Why are people hungry?'
- Nine opaque pots each with a small hole in the lid
- A bowl of beans/seed/ pebbles, small enough to fit through the holes in the lids of the pots
- Nine cards, each with one of the following nine reasons why people may be hungry
    a. There are too many people and there is not enough food to go round
    b. People in rich countries don't give enough money to charities
    c. Climate change is making it harder to grow food
    d. People can't grow food because of wars
    e. Poor farmers are not allowed to sell their food to rich countries
    f. Farmers don't use new ways of growing more food
    g. The best land is used to grow food for other countries
    h. Food is not shared out fairly
    i. People are too poor to buy food

What to do:

- arrange the nine cards beside the nine pots and give each students three beans
- ask them to use the beans to vote for reason/s they think best explain why people are hungry
- explain that they can vote three times: for 3 different reasons, put one bean in each of three pots, or out two in one pot and one in another, or put all three beans in the same pot
- when they have voted, open the lids and ask them to count the number of beans in each pot
- keep a record of the scores and any explanations of comments they make

How to analyse and interpret the results:

- Draw a grid with four columns listing 9 reasons, number of votes, percentage of votes and comments.
- total the scores and work out the percentage of responses that each reason contributes
- consider their comments

What to look for:

- pupils' awareness of our interdependence, that food for the Minority World [2] is grown on land in the Majority World, where many people do not have enough to eat
- pupils' awareness that charity is not the answer to world hunger
- pupils' awareness that there is enough food in the world but it isn't shared fairly
- Make a combined table showing responses from different schools in different colours.
- Look at the differences between the responses from/ comments of different schools.

You could share your results with your partner school(s) and compare your views.

At the end of the food topic - repeat the activity: Analyse and collate the results from your school, share results with your partner school(s) and collate the results (using different symbols or colours). Discuss similarities, change and differences between schools and between the first and second phase of this activity

How to know your teaching has been effective: When you repeat the activity you are looking for:

- A higher score for: The best land is used to grow food for other countries
- Lower scores for:
    - People in rich countries do not give enough money to charities
    - There are too many people

[1] Adapted from 'Why are people hungry?' p 106 RISC (2008) *How do we know it's working? A toolkit for measuring attitudinal change in Global Citizenship from early years to KS5* www.risc.org.uk ISBN 978-1-874709-10-6

[2] Majority/ Minority World are terms used in preference to Developing Countries (Majority world) and Developed Countries (Minority world).

Food Factsheet: We are what we eat

- United Nations Sustainable Development Goal 2, September 2015 **'to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture'**

- **'Every child has the right to the best possible health. Governments must provide good quality health care, clean water, nutritious food and a clean environment so that children can stay healthy. Richer countries must help poorer countries to achieve this.**'
  Article 24 United Nations Convention on the Rights of the Child (UNCRC)1989.

Food is essential to all life. Every living thing is part of a food chain, fed by some organisms, and a food source for others – a continuous cycle or circle of life in nature's perfect recycling system.

1. Food is central to health and wellbeing

A diet with balanced amounts of nutritious food promotes our healthy growth and helps us to reach our full potential. Too little or too much food, or a diet that is poor in nutrition, can make us unhealthy.

Food for thought: What are your favourite foods? Are there any healthier options you could choose?

2. Food is part of our history and cultures

Long ago we only ate food that was available locally and this led to many ways of preparing and eating different foods. Over centuries, as people travelled to other parts of the world and transport got faster and cheaper, there has been more diversity in the food available in any one place. For many people, the food we eat and the way we cook have become very varied, with influences from around the world.

Food for thought: Who prepares your food? What foods do you / your classmates eat most often?

3. Farmers and consumers are interdependent

Subsistence farmers grow food and keep animals for their own needs. People in more industrialised countries and cities often use their land for recreation and buy all their food in shops and markets. There is a food production chain in which commercial farmers grow food or raise livestock on a large scale, to sell to wholesale companies or shops and markets for customers to buy. To grow food commercially, farmers need land, fertile soil, reliable rainfall, warmth and light to nourish crops. They need workers to plant, tend and harvest crops and wholesalers to buy their produce, package and transport it to markets and shops. Some farmers add fertilisers or pesticides to the soil, artificial light and heat and irrigation schemes. Some farm larger areas using machinery to plough, plant, tend and harvest to increase their crop and profits. People who buy food depend on farmers to grow it, and farmers depend on buyers to support their livelihoods: thus the two groups are interdependent.

Food for thought: Is there any food you know how to grow for yourself? Who did you learn this from?

4. Food travels from near and far

Food you eat may be grown on your land, on a farm nearby, or far away. Wholesale companies buy and transport food across the world. In some countries a wide range of food is available all year to those who can afford it. This food may not be grown locally because the climate is unsuitable, or there may not be land available to grow food for all people who live there. Most food traded across the world is grown in countries with warm climates and long growing seasons and sold to countries with cold climates and short growing seasons. Food from farmers' markets is usually grown locally. Food that is packaged, transported and sold in shops is labelled, so you can tell where it was grown and how far travelled (food miles) from producer to consumer (you).

Food for thought: Where was most of the food you eat grown? How far has it travelled to reach you?

5. Many people do not have enough food or variety in their diet

There is enough food for everyone but it is not equally distributed because of unequal access, poverty or disrupted supplies in conflicts or natural disasters. Since 1990 extreme poverty in the world has halved, but one in nine people in the world remain hungry in 2015. In 2009 The Food and Agricultural Organisation of the United Nations (FAO) estimated 1.02 billion people in the world were undernourished. People in developing countries spend up to 70% of their income on food, but in the UK it is 10% (CAFOD 2013). Brazil is a major food exporter yet around 14 million people (7%) are undernourished (Source: FAO 2010-12).

Food for thought: What would you like to see happen to change this?

6. Some people have plenty of food, but do not make healthy eating choices

Eating habits change as countries get wealthier. People in India and China are eating more processed foods. In China malnutrition fell by 50% in 10 years and the average height of children increased by 3 cm. But childhood obesity has risen, with one in 5 of the overweight people in the world residing in China. In the Western world the cheapest foods tend to be more heavily advertised, the most processed and the least nutritious, leading to increases in weight and illnesses associated with unbalanced diets.

Food for thought: If you could eat any food you wanted would you know how to make healthy choices?

7. Nearly one third of all the food in the world is wasted

In 2011 The Foresight Report, from over 400 experts in 35 countries, concluded that about 30% of food is wasted. This includes food that is not harvested, is eaten by pests, can't be stored or refrigerated, is damaged or poorly packaged or more of one type of food is produce than can be sold. Sometimes people buy more food than they need. Many foods sold in supermarkets have a date written on the packaging with advice on the maximum time you should keep food before you eat it and people may throw food away if it is beyond that date in case it is no longer good to eat.

Food for thought: When have you seen food being wasted? Is there anything you can do about it?
Literacy Activity: The 'Zero Hunger' Challenge: Helping to solve the problem of food wastage.

8. Trade usually favours buyers more than sellers and farmers often benefit least

All humans have the right to have adequate nutritious food but the food growers and the people who buy it do not benefit equally. Farmers compete with others around the world to persuade buyers that their food is good quality, reasonably priced and they can provide a reliable supply. The market price is often so low that food producers cannot afford to feed their own children properly.

'The fact that hunger was increasing, even before the food and economic crises, suggests that present solutions are insufficient and that a right-to-food approach has an important role to play in eradicating food insecurity. To lift themselves out of hunger, the food-insecure need control over resources, access to opportunities, and improved governance at the international, national and local levels'

The state of food insecurity in the world' (FAO 2009)

Food for thought: What do you think can be done to make sure that everyone has enough to eat?
Numeracy Activity: The Journey of a Banana from a Caribbean Island to a UK lunchbox

9. Cheap food production is costing the Earth

Land for growing cash crops for export is often converted from land that would supply food for local people or from valuable 'eco-systems' such as rainforests. Modern farming methods, with toxic chemicals and fertilizers can damage soils, leach into water and harm wildlife and the environment. Transporting food hundreds or thousands of miles causes pollution and contributes to global warming. It takes up to five litres of fuel to fly one kilogram of fruit or vegetables from South America to the UK.

Food for thought: Is there anything you can do to help to protect the environment?

10. How can my food choices make a difference?

Learning about food and making informed choices can improve things for us and others. We can't always choose what we eat or where it comes from but sometimes we can make positive choices for own health, the wellbeing of others and the environment. We can eat food that is 'healthy' for our bodies, and buy food that is 'healthy' (good) for farmers and the environment. 'Fairtrade' / equitable trade and some other products guarantee food producers in less well-off countries get fairer wages, decent safe working conditions and good housing. Locally grown food travels less food miles. Organic products are grown without artificial chemicals on land managed to protect wildlife, animal welfare and the environment.

Food for thought: What food choices could you make to make the world a fairer place?

Thinking Together about Food - Numeracy activity

The Journey of a Banana from a Caribbean Island to a UK lunchbox

This activity is for children aged 7 and above. It uses number work and problem solving in a real context of how bananas are grown and transported from a tropical island to a country where bananas don't grow. Exploring interdependence in the global supply chain, it applies and encourages critical and reflective thinking.

Numeracy starter: Ask the class to derive number pairs which total 20, and explore sets of three, four and five numbers that total 20. Write up some combinations and challenge children to find others.

How bananas travel from a tropical island to the United Kingdom where bananas won't grow

On a tropical island in the Caribbean, **Farmers**, grow banana plants and tend them for 18 months until bunches of bananas are ready to cut. They protect growing bananas from weather and pests by covering them in plastic sheets. Some use fertilisers to help the crop grow and pesticides to protect the crop from bugs and pests. Both these cost the farmers money. When the bananas have grown, but are still green, the farmers cut them with a machete (a large knife) and then pack them into boxes. The plants then die and farmers must grow new ones.
The Banana Development Company supports banana growers on the island by getting the best price for their bananas. They sell the fertilisers, pesticides, plastic sheets and boxes and give advice on growing bananas.
Shipping, importing and packaging companies transport boxes of bananas from the Caribbean to the UK in refrigerator ships. The journey takes about six days. In the UK bananas are carried by lorry to a factory where they are carefully ripened for about a week in special rooms at the right temperature to help them ripen. They are sorted into different sizes and packed ready for sending out to the wholesalers or retailers.
Wholesalers receive boxes of ripe bananas from the packaging companies and sell them to different retailers.
Retailers sell bananas in shop or markets. They must be sold quickly before they over-ripen and turn brown.

Working in small groups, pupils complete the table below and discuss the questions: You decide!

Who gets what reward?	I banana = 20 units	Instructions
Grower		➢ Decide how much each group should get from the sale price of a banana which costs 20 units ➢ Which group do you think deserves the most from the sale of the banana? Why do you think so? ➢ Who do you think deserves the least? Why do you think so? ➢ How did you work out your answers? ➢ How can you check to make sure that you have got your calculations right?
Banana Development Company		
Shipping and Packaging Company		
Wholesaler		
Retailer		
Total		

Discussion: Children share their calculation strategies to justify what proportion of the 20 units they allocated to each group. Different number combinations of five numbers that add to 20 can be examined.

Tell the class who gets what in real life: From the 20 unit cost of a banana each group gets the following [3]:

Farmer /Grower	1 unit
Banana Development Company	1 unit
Shipping and packaging company	7 units
Wholesaler	4 units
Retailer	7 units

Ask the students to discuss and compare actual proportions with their own decisions on who should get what. Do they think this is fair? Why/ why not? Explain that some products sold in shops, especially those labelled as 'Fair trade', guarantee that food producers get fairer wages, decent safe working conditions and good housing – to ensure that they are fairly rewarded for producing goods or growing crops. **You could exchange your thoughts and results with your partner school.**

Recap: People who buy food depend on farmers to grow it and farmers depend on buyers for their livelihoods: the two groups are **interdependent.** In the **food production chain, commercial farmers** grow food to sell to **wholesale companies** or **shops and markets** for **customers** to buy, and food is often transported across the world. This chain links the lives of people across the world, but the benefits are not spread equally between them. Shoppers can choose to buy products which help farmers and producers to have better livelihoods.

[3] All figures are approximate and do not include taxes, import licenses or insurance

Thinking Together about Food – Literacy Activity

The 'Zero Hunger' Challenge: Helping to solve problems of food wastage

This activity is for pupils aged 7 and above. It looks at reasons for food wastage and what can be done about it. Children act as 'experts', researching and thinking about solutions to the problem[4].

Literacy starter: Ask children to write a sentence describing a favourite food and why they like it:
'I like bananas because ... Share these ideas and compare the range of foods and descriptive words used.

Background: Food waste - a problem we can solve together

The United Nations (UN) is an international organisation with 193 countries as members. They have set the world a 'Zero Hunger Challenge'. They say everyone has the right to have enough to eat. In 2000 they agreed eight changes to make the world better for everyone[5], and the first was to end extreme poverty and hunger. When they looked into how this could be done they found a big problem: there is enough food for everyone, but one third of the food produced is wasted, whilst 900 million people do not have enough to eat. UN experts decided to find out why food is wasted and do something about it. Your job is to help them to investigate food wastage and think about what can be done to solve this problem.

Food Waste Investigation: Working in small groups, children complete the table below:

Food wastage is divided into two types: • **Food Loss**: is food lost or damaged in growing, harvesting, transporting or processing • **Food waste**: is food wasted or damaged in shops and by consumers **Read each statement and decide if it is food loss or food wastage. Put a tick the box**	**Food Loss**	**Food waste**
1. I didn't like the sandwich in my lunchbox so I threw it away and ate the biscuit and crisps		
2. There were too many chips on my plate so I couldn't eat them all		
3. Mice got into our food store, nibbled through the storage sack and ate half of our rice		
4. We can't get our pineapples to the market because we have no means of transportation		
5. Our apple tree had lots of apples this year and when they fell onto the ground they rotted		
6. Our maize crop died because there was not enough rain		
7. The company we sell our bananas to bought from another farmer at a cheaper price		
8. These cucumbers are not straight so the shop won't sell and customers won't buy them		
9. We threw the milk away because we did not have a fridge to keep it in and it went sour		
10. I bought potatoes and got an extra bag free. I couldn't eat them all before they went bad		

[Answers: Food Waste:1,2,5,8,10 Food Loss:3,4,6,7,9]

Choose one example of food waste and one example of food loss.
Try to let everyone in the group have their say and then decide together:

- Why was food lost or waste wasted?
- Who can do something to change this?
- What can they do?

Tell the person or organisation that you think could change things what you think they could do.

- Decide on the best way to communicate your ideas to this person or organisation (for example: a letter, or an information poster, a slogan, social media, you tube, tweets ....)
- Using the form of communication you chosen, tell them what you think the problem is and what you suggest they can do to solve it

Finally, think about anything that you think **you** can do to help to reduce food loss or food waste.

Interactive plenary - discuss the statement '*Everyone should have enough food to eat'*
Name one thing you think should be done, and one thing you could do, to make this happen.
Share the outcomes of your discussion with your partner school.

[4] The Mantle of the Expert is a drama-based enquiry based approach to teaching and learning. To find out more about this way of working in the classroom go to www.mantleoftheexpert.com
[5] UN Millennium Development Goals – 8 Goals for a better world to be achieved by 2015 www.un.org/millenniumgoals

Thinking Together about Food - Extension work: More Banana Facts

- Bananas grow in hot climates, in countries of the majority world. Probably the first cultivated fruit, they originated in South East Asia and spread to tropical countries around the world. Today bananas are grown in over 150 countries.

- There are over 100 varieties but not all are good to eat. The name 'Banana', first used on the African continent, is from the Arabic word for finger - 'banan'. The scientific, Latin, name for bananas is '*musa sapientum'*, meaning 'fruit of the wise men'.

- The banana is not a tree, but is the world's largest herb plant from a family that includes lilies, orchids and palms. Each plant is like a bulb, grown from another plant; an exact clone of a single original parent. This makes them very vulnerable to disease.

- The most popular commercial banana of the early 20th Century, 'Gros Michael' was almost wiped out by Panama Disease, a fungal disease that now threatens the 'Cavendish' banana, which replaced it as the most traded banana type.

- Bananas grow around 4.5 metres high with a 'trunk' made of overlapping leaves. The leaves can be around 3 metres by 0.5 metres with stalks bearing bunches of over 400 bananas, in clusters, called 'hands', of up to 20 fruits or 'fingers'.

- Bananas are a healthy food, low in calories and fat and high in vitamins and minerals. They are naturally, harmlessly, radioactive as they contain Potassium 40, which helps the fruit to ripen. Around 75% of their weight is water and they float. They contain a protein which coverts in our bodies to serotonin – a substance which induces feelings of relaxation and happiness.

- Bananas have many other uses – they make good compost, the fibres can be made into paper and fabric and the inside of the banana skin is attributed with many useful properties including shining shoes, and reducing the itchiness of mosquito bites and the severity of headaches.

- Over 100 billion bananas are eaten each year around the world. The county where people eat the most bananas is Uganda in East Africa where around 500 pounds (227 kilograms) of bananas per person are consumed each year and Ugandan word '*matooke*' means both food and bananas. More bananas are grown in India, around 28% of the worlds' bananas, than in any other country, followed by 10% in China.

- Commercially, bananas are the world's fourth largest agricultural crop after wheat, rice and corn. Ecuador is the biggest exporter of bananas.

- In the USA many bananas are imported from countries in South and Central America, including Costa Rica, Ecuador, Colombia, Honduras, Panama, and Guatemala.

- In Europe there has been a long history of importing bananas from the Caribbean Islands where bananas are crucially important to the local economy. On the island of St Vincent in the Caribbean growing bananas accounts for 60% of the workforce and 50% of the merchandise exports.

- Bananas are one of the most profitable items sold in UK supermarkets.

Thinking Together about Food - Extension work: More Food Facts

All of us - farmers and fishers; food processors and supermarkets; local and national governments; individual consumers - must make changes at every link of the human food chain to prevent food wastage from happening in the first place, and re-use or recycle it when we can't. FAO Director-General José Graziano da Silva 2013

Food wastage is a big issue for people and the environment around the world.
There two types of food wastage:

Food losses (54%) during production, harvesting, transportation and processing stages
Food waste (46%) at the retail and consumer end of the food chain

We can all help to change this! Food loss is more of an issue in lower income countries and food waste is more of an issue in more affluent countries.

The United Nations (UN) Zero Hunger Challenge: We all have a right to food. In 1948 the UN gave all people rights to a secure food supply and to be free from hunger and malnutrition. Yet 900 million, mainly in countries of the majority world, lack secure food supplies and do not have enough to eat. Economic recession and inequality in wealthy countries also causes food poverty for 4 million people in the UK, 43 million in the EU and 35 million in the US.

The **Think Eat Save - Reduce Your Foodprint** (www.thinkeatsave.org) campaign from the United Nations Environment Programme (UNEP) and Food and Agricultural Organisation (FAO) aims to reduce food waste, improve food security for poorer people and achieve the 'Zero Hunger Challenge' set by the United Nations' Secretary General.

Food wastage is bad for people: a 2013 FAO report estimates one third or 1.3 billion tonnes of the food produced goes to waste, while almost 900 million people go hungry every day. Every year this costs £750 billion US dollars.

Food wastage is bad for the environment: Every year food wastage creates 3.3 billion tonnes in greenhouse gases (10% of greenhouse gas produced), and wastes water equivalent to the annual flow of the Volga River. The further along the food chain waste happens the greater the cost, as the environmental impacts of processing, transport, storage and cooking are added to production costs.

Food wastage 'hotspots':
In Asia cereal waste impacts on water, land use and carbon emissions. Rice has high methane emissions and large levels of wastage. Fruit wastage is high in Asia, Latin America and Europe, causing water wastage. Vegetable wastage in Asia, Europe and SE Asia leaves a large carbon footprint. In the UK 20- 40% of fruit and vegetables are rejected before they reach the shops – mostly because they do not match supermarkets' strict cosmetic standards. In UK, the US and Europe there is twice as much food as the nutritional needs of the populations, but half the food is wasted, although 4 million people in the UK, 43 million in the EU and around 35 million in the US suffer from food poverty. The wasted food is more than enough to provide all the hungry people in the world with nourishing food.

Food waste in the UK: In 2012 around half of food waste was in homes. On average UK households threw away 25% of what was bought, equivalent to 6 meals a week and £470 a household per year. Over half of this was fit to eat. Almost half was thrown away without ever out reaching a plate and 24-35% of school lunches ended up in the bin! Over 4 million tonnes of waste food goes into household waste mostly to landfill. To produce the food we wasted would use a land area about the size of Wales.

The top 10 foods thrown away in the UK: Bread - Potatoes - Milk - Meals (home-made and ready-made) - Fizzy drinks - Fruit juice and smoothies - Poultry - Pork meat - Cakes - Processed potatoes (chips, etc). Every day UK homes throw away about: 5.8 million potatoes / 1.4 million bananas / 24 million slices of bread and 5.9 million glasses of milk. The good news is that things are improving. From 2007- 12 household food waste was reduced by 21%, saving UK consumers about £13billion and a lot of environmentally damaging waste processing.

❖ What can we do about food wastage?

Ten Tips for reducing food wastage in UK homes:

1. Only buy what you need and will consume
2. Check 'best before' and 'use-by' dates
3. Store food under the correct conditions
4. Make the most of leftovers
5. Freeze appropriate foods following guidance
6. Prepare the correct size meal
7. Serve appropriate portions
8. Buy foods with an increased shelf-life
9. Take care when cooking to avoid spillages, contamination and burning food
10. Be aware of family members and guests' likes and dislikes

Think Eat Save - Reduce Your Foodprint campaign (www.thinkeatsave.org)

Food 'recycling' in the UK:

Not everyone in wealthier countries is rich. **The Gleaning Network** of volunteers harvest food that highly mechanised farms leave to rot and collect food thrown out by supermarkets because it is imperfect or beyond the 'sell-by' date. Food is shared via food banks to people in food poverty who cannot afford enough food to eat.

Fare Share is a UK Campaign to fight hunger by tackling food waste. http://www.fareshare.org.uk/

❖ What can we do about food losses?

Food losses include food that is not harvested, is eaten by pests, can't be stored or refrigerated, is damaged or poorly packaged, or when more of one type of food is produce than can be sold.

Reducing food losses in Sub-Saharan Africa:

Three UN pilot projects in Burkina Faso, the Democratic Republic of the Congo (DRC) and Uganda aim to reduce food losses that arise from lack of infrastructure for harvesting, processing, transportation and storage. The three year projects will focus on staple foods that provide food security (grains and pulses such as maize, rice, beans and cow peas) and could improve the livelihoods of millions of smallholder farmers. A 2011 report by the World Bank, FAO and the UK Natural Resources Institute estimates that reducing annual grain losses of $4billion dollars in Sub-Saharan Africa could meet the minimum annual food requirements of at least 48 million people.

Enterprising ideas: appropriate technologies to improve domestic food storage

In 2001 Mohammed Bah Abba, a Nigerian school teacher won an award for enterprise for inventing a simple method to refrigerate food without electricity. He designed a 'pot-in-pot' system putting one smaller clay pot inside a larger one and separating the two with sand which is kept damp. The evaporation of the water causes the inner pot to cool and keeps food fresh for longer.

In 2009 a British schoolgirl, Emily Cummins, developed a solar-powered eco fridge (that can be made of metal wood or plastic from household materials) in her grandfather's garden shed. It can keep food like milk or meat cool for days at a temperature of 6 degrees centigrade. She spent some time after leaving school developing her ideas and improving her design in Namibia.