Introduction to Thematic Unit

The four subjects in this thematic unit are Science, Home Economics, Local and Global Citizenship and Employability. There are also opportunities to make links with Geography and Modern Languages and these subjects may choose to take on some aspects of this thematic unit.

Bigger events/activities related to Healthy Eating

Schools may wish to explore the following:

- Healthy eating week/launching a school's healthy eating policy.
- Schools gardening project – over the course of the school year, growing vegetables and cooking them in a special meal before breaking up for the summer holidays.
- Exploring and celebrating a festival from a different culture; doing the cooking and following the customs for that event.

Science

The Science unit looks at chemicals in the food we eat and an overview of the make-up of our bodies Growing our own food provides an opportunity to explore photosynthesis and germination as well as practical gardening. Cooking is used as a context to explore chemical changes, with opportunities to use science in the kitchen.

Home Economics

The Home economics unit explores the concept of a healthy balanced diet and focuses on practical health cooking and cuisines from around the world.

Local and Global Citizenship

This unit looks at the cost of our food from environmental and ethical viewpoints. Issues around where our foods come from such as chicken welfare, food miles, fair trade, GM and organic foods are also explored.

Employability

In the Employability unit, careers in the catering and food industry are examined. It looks at a career as a chef, experiences of foreign nationals working in the food industry and the challenges small businesses face in the Northern Ireland.

Science Unit: The Science of Food

This Science unit looks at the chemicals in the food we eat and that make up our body and includes some standard lab food tests. There is an overview of the make-up of our bodies with an option to explore further the digestive system. The unit also explores the science in growing our own food, including photosynthesis and germination as well as practical gardening. Cooking is used as a context to explore chemical changes, with opportunities to use science in the kitchen.

Learning Intentions

Science	Learn about organisms and health
	Learn about chemical and material behaviour
	Develop a range of practical skills, including the safe use of science equipment
Links with	Key Concept – Healthy Eating
Home Economics:	Explore ways to achieve a healthy diet

Pupils are learning:

- About the substances that make up food and our bodies, such as iron.
- To carry out research, reading and recording information from food labels. (Managing Information, Using Mathematics)
- To use chemical tests in the lab.
- The location of organs within the body.
- About the function of the digestive system.
- To present information, choosing from a variety of possible forms and formats, with a sense of audience and purpose. (Managing Information, Communication).
- The basics of photosynthesis.
- The factors necessary for germination.
- To plan the task of planting a garden (Being Creative, Working with Others).
- How to recognise a chemical change.

- To understand some scientific processes in cooking.

Does this mean we have to eat nails?

Ask the pupils do they think the iron in our food is the same as the iron in nails then watch the following clip.

- BBC Learning Zone Clip 2265 'Proving there is Iron in our Breakfast cereal [*Flash*] *http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2265*

Possible questions to follow up video:

- List some of the substances that make up our bodies.
- Where do these substances come from?
- Did anything in this video surprise you?
- What did you already know?
- What further questions do you have as a result of this video clip?
- Are there any investigations that you could carry out?
- If so, discuss with your teacher and make a plan.

Conduct **Experiment 8**: Iron in Breakfast Cereal in the Royal Society of Chemistry (RSC) Classic Chemistry Experiment [*external link: PDF*]
http://www.rsc.org/education/teachers/learnnet/pdf/LearnNet/rsc/Kev1-10.pdf

How do we absorb bits of metal like iron?

Explain to pupils that our stomachs contain hydrochloric acid. The following reaction could be demonstrated by the teacher or carried out by pupils in small groups. (Eye protection and caution needed when using acid!)

- Place some iron filings in a test tube containing dilute hydrochloric acid.
- Describe your observations – What do you see and hear? Do you notice a smell? Does the test tube become warmer?

Follow up task: (Links with Home Economics)

- Look at breakfast cereals at home.
- Record how much iron they contain in (I) a 30g serving and (ii) in 100g.
- As a class do a 'league table' of different cereals in terms of their iron content.

This could link with the practical investigation described earlier – check if your measurement of the iron content agrees with the label.

What else do we need to eat to stay healthy?

Ask the pupils to watch the clip and complete the following grid, either as a class, in small groups or individually.

- BBC Learning Zone Clip 2271 -Food needed by the human body [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2271

What I knew already:	What I have learned from watching the video:	Questions I still have:

Discuss this feedback from pupils. Where possible address their questions. It may be helpful to watch the video again.

Food tests in the lab

Complete this section with some standard food tests. (No food may be eaten or tasted in the lab). Pupils carry out chemical tests to determine the nutrients in different samples of food. For example:

- Iodine test for starch.
- DCPIP test for vitamin C.
- Benedict's Reagent for simple sugars.
- Biuret test for protein.

If pupils are familiar with these food tests, challenge them with a mystery substance. Their task is to guess the substance using the combined results of food tests that they have carried out.

How does food affect our bodies?

Ask pupils why we need to eat; then watch the following clip and see if they would like to add to their answers:

- BBC Learning Zone Clip 2288– Why do we need to eat? [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2288

Do the pupils have any further questions as a result of watching this clip? Summarise the reasons why we need food:

- For energy
- Growth
- Repair
- Protection
- Insulation

The body uses materials in food to build and maintain organs and systems in the body. What systems and organs do pupils already know about?

- BBC Science: Human body Interactive games [*Flash activities*]
  http://www.bbc.co.uk/science/humanbody/body/index.shtml

These activities could be done as a class using an interactive whiteboard or on individual computers with pupils working in small groups/individually. There are a number of games, each with fact files and further links.

- Organs
- Muscles
- Skeleton
- Nervous system
- Puberty (overlap with personal development)

Research task

The teacher and pupils may decide to explore a system organ in more detail.

- BBC Health: The Digestive System [*article*]
  http://www.bbc.co.uk/health/healthy_living/nutrition/healthy_digestive.shtml
- BBC Science: The Human Body -The Liver [*article*]
  http://www.bbc.co.uk/science/humanbody/body/factfiles/liver/liver.shtml

The digestive system, for example, would be most relevant to this thematic unit.

Pupils could work in small groups to tell the story of part of the digestive system.

For example, 'I am the liver'

- This is what I look like ...
- These are some of the things that I do ...
- Without me, you would ...
- Some of the things that can go wrong with me are ...
- To keep me healthy you could/need to ...

Pupils could present their stories using a variety of methods: orally, as a wall display, using presentation or animation software, as a storybook, etc.

Growing Your own Food

Ask pupils what they know already about photosynthesis, then watch the following clip.

- BBC Learning Zone Clip 212– Photosynthesis [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=212

Discuss with pupils if they have learned any new facts from the video. What further questions do they now have? If pupils feel up to the challenge, there is a test about green plants at the end of all the fact sheets on them. Further resources about photosynthesis can be found:

- BBC KS3 Bitesize - Photosynthesis [*article*]
  http://www.bbc.co.uk/schools/ks3bitesize/science/biology/green_plants_1.shtml
- SAPS (Science and Plants for schools) : Photosynthesis [*external link: article*]
  http://www-saps.plantsci.cam.ac.uk/pubphoto.htm

Seeds and germination

Introduce the topic of seeds and germination with the following video clips:

- BBC Learning Zone Clip 69– Growing plants [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=69

- BBC Learning Zone Clip 63 Seeds [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=63

Working in small groups, ask pupils to decide what seeds need to start growing. They may wish to watch the video clips a second time. Do all groups agree? Ask the pupils to plant some seeds, such as herb or sunflower seeds. They could also plant bulbs such as snowdrop or daffodil. If planting bulbs, explain how they are different to seeds. Further activities on seeds and germination can be found:

- SAPS (Science and Plants in Schools) Germination and Growth [*external link: article*] http://www-saps.plantsci.cam.ac.uk/prac_growth.htm

Let's get gardening!

A school garden is a project that needs to be run over at least a couple of months. Pupils could plant vegetables and eat them in a celebration meal at the end of the year or whenever the harvest is ready. Some local authorities in Northern Ireland run school gardening projects as part of Agenda 21 and Health Action Zones.

Information and advice about schools' gardening is available at the following links:

- RHS School Gardening [*external Link: article*]
  http://www.rhs.org.uk/SCHOOLGARDENING/default.aspa
- Garden Organic: School Organic Network [*external Link: article*]
  http://www.gardenorganic.org.uk/schools_organic_network/index.php
- Teachernet Growing schools initiative [*external Link: article*]
  http://www.growingschools.org.uk/

You can grow plants and donate them for sale at Oxfam garden centres. Oxfam also have a resource, Seeds of Learning, to support learning in this area which includes flower and herb seeds.

- Oxfam – Gardening for Africa [*external link: article*]
  http://www.oxfamireland.org/oxfamgarden/

Consider what kind of soil is in your garden. This will affect your decision about what to grow. The following site will help you to analyse the soil in your plot.

- BBC Gardening: How to be a gardener: soil [*article*]
  http://www.bbc.co.uk/gardening/htbg/module1/analysing_your_soil.shtml

You may wish to explore organic gardening. No chemicals are used to kill weeds and pests. Flowers are used to attract insects which help plants grow healthily and avoid predators. [Organic food is further explored in the Local and Global Citizenship unit.] Decide what you would like to grow in the garden with the help of the following sites.

- BBC TANDY: Growing Your Own: Digging the Soil [*Flash audio*] http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/science/lets_get_gardening.shtml
- BBC TANDY: Growing Your Own: Planting potatoes [*Flash audio*] http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/science/lets_get_gardening.shtml
- BBC Learning Zone Clip 68 – How fruit grows [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=68
- BBC Gardening: Organic Gardening [*article*] http://www.bbc.co.uk/gardening/basics/techniques/organic_index.shtml
- BBC Gardening: How to be a gardener [*Real Media Video*] http://www.bbc.co.uk/gardening/htbg/module7/
- BBC Gardening: Growing Fruit and Vegetables [*article*] http://www.bbc.co.uk/gardening/basics/techniques/growfruitandveg_index.shtml

The Science in Cooking

Cooking food is a chemical change and is a useful context to explain this concept in science. As an introduction, watch the following clips:

- BBC Learning Zone Clip 90 Taste [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=90
- BBC Learning Zone Clip 91 From raw to cooked [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=91

In small groups, ask pupils to think of other foods which change when they are cooked.

- Describe what they are like at the start.
- Describe how the food changes due to cooking.

- Is there any way that the food could be changed back to its pre-cooked version.

Take feedback from pupils on what they discussed. Use their information to list the main characteristics of chemical changes. It may be useful to view the following video and website.

- BBC Learning Zone Clip 92 Cooking eggs [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=92
- BBC Schools GCSE Bitesize: Cooking and Chemical Changes [*article*] http://www.bbc.co.uk/schools/gcsebitesize/science/ocr_gateway/carbon_chem/1_cooking2.shtml

Chemical and physical changes

It may be appropriate at this stage to compare reversible (physical) changes with irreversible (chemical) changes. Review the following animation and fact sheet.

- BBC Schools: Science Clips: Reversible and Irreversible changes [*Flash Activity*] http://www.bbc.co.uk/schools/ks2bitesize/science/activities/reversible_irreversible.shtml
- BBC KS3 Bitesize: Chemical Reactions Vs Physical Changes [*article*] http://www.bbc.co.uk/schools/ks3bitesize/science/chemistry/chem_react_2.shtml

Chemistry in the kitchen; celebrity chef Heston Blumenthal has championed the chemistry of cooking. By learning about the science of chemical reactions in food cookery he has developed unique cooking techniques and dishes, in the process earning Michelin stars for his Fat Duck restaurant. Watch the RSC Kitchen Chemistry Video Clips which feature Heston discussing the science behind his cooking

- RSC Kitchen Chemistry videos [external links: video] http://www.rsc.org/education/teachers/learnnet/kitchenchemistry/00_video.htm

Now try the following experiments. As no food can be tasted or eaten in a lab environment, the following chemistry activities must be carried out in a kitchen or Home Economics room.

These links describe the science behind/in different cooking activities:

- School Science: Cooking is Chemistry worksheet [*External Link: PDF*] http://resources.schoolscience.co.uk/Salters/pdfs/volone/SCC1_Prac11.pdf
- Royal Society of Chemistry: Kitchen Chemistry [*External link: article*] http://www.rsc.org/education/teachers/learnnet/kitchenchemistry/00.htm
- Exploratorium: Science of Cooking [*External link: article*] http://www.exploratorium.edu/cooking/
- Science of Cooking [*external link: article*] http://www.scienceofcooking.com/
- BBC Food Making honeycomb (as part of recipe for knickerbocker glory) [*article*]
- http://www.bbc.co.uk/food/recipes/database/knickerbockerglory_9379.shtml

Home Economics Unit - Let's get Cooking

This unit looks at the concept of a healthy balanced diet. Pupils explore how healthy their own diet is and how they could make improvements and look at practical cooking skills. The connection between food and culture is also explored.

Learning Intentions

Home Economics:	**Key Concept – Healthy Eating** Explore ways to achieve a healthy diet. Develop practical skills in the safe, hygienic, healthy and creative use of foods to plan, prepare, cook and serve a range of meals. Develop the practical skills in the safe use of a range of utensils and appliances in the preparation, cooking and serving of a variety of dishes.
Links with Personal Development:	**Key Concept – Personal Health** Investigate the influences on physical and emotional/mental personal health.
Links with Modern Languages:	Present an understanding of their own culture and of the culture associated with the language.
Links with Science:	Explore physical, chemical and biological effects on personal health.
Links with	**Key Concept – Diversity and Inclusion**
Local and Global Citizenship	Investigate factors that influence individual and group identity

Pupils are learning:

- About the essential aspects of a healthy balanced diet.
- To examine evidence to decide if they have a healthy diet. (Thinking, Problem-Solving and Decision-Making)
- To set personal targets and manage their behaviour towards a more healthy diet. (Self Management)
- To carry out a class survey on the amount of fruit and vegetables eaten per day. (Using Mathematics)
- To make new connections between ideas/information. (Being Creative)
- To apply practical cooking skills and follow a recipe to plan, prepare, cook and serve a meal.
- About how cooking in other countries and cultures.

What is healthy eating?

Introduce the concept of healthy eating with the following clip. Amanda Jones is an athlete. Discuss with the class what her recommendations for a healthy diet are? What do you think is a balanced diet? Do you have one?

- BBC Learning Zone Clip 2289: Five types of food [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2289

Listen to the following audio file:- Angela McCombe is a dietician and she gives some recommendations for a healthy diet. Ask the pupils to complete a 3-2-1 activity with this audio file. Ask them to write down three things that they knew already, two new things they've learned and one question which they now have.

- BBC TANDY: Back to Basics: Bread [Flash audio]
  http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/home_economics/what_is_healthy_living.shtml

Ask pupils to keep a food diary over a number of days. Ask them to analyse the nutritional content of what they are eating in terms of carbohydrate, protein, fats, vitamins and minerals.

- BBC Healthy Living - Food Diary [*article*]
  http://www.bbc.co.uk/health/healthy_living/your_weight/reaching_diary.shtml#diary_to_print_off
- BBC Healthy Living - Nutrition [article]
  http://www.bbc.co.uk/health/healthy_living/nutrition/

Ask the class to watch the following clip and look at the websites. Do a class survey on how many fruit and vegetables are eaten at the start of the unit and then do a comparison when finished and see if their eating habits have improved.

- BBC learning Zone Clip 61– Why do we need to eat fruit and vegetables? [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=61
- British Heart Foundation: Healthy Eating [*external link: article*]
  http://www.bhf.org.uk/keeping_your_heart_healthy/healthy_eating.aspx
- British Heart Foundation: 'Five a day' food diary [*external link: article*]
  http://www.bhf.org.uk/publications/view_publication.aspx?ps=1000636

Play the following interactive game which gives information on the components of a healthy diet and explains cholesterol, low density (LDL) and high density (HDL) lipoproteins:

- BBC Bitesize Diet and exercise [*Flash Activity*]
  http://www.bbc.co.uk/schools/gcsebitesize/science/aqa/human/dietandexerciseact.shtml

A Balanced Diet?

Some people choose to be vegetarians for ethical, health or other reasons. Discuss this option with the class and ask them what recommendations they would make to someone choosing a vegetarian balanced diet.

- BBC Newsround: What is a Vegetarian [*article*]
  http://news.bbc.co.uk/cbbcnews/hi/newsid_2020000/newsid_2027600/2027694.stm
- BBC Video Nation: Very Vegetarian [*Real Media Video*]
  http://www.bbc.co.uk/videonation/articles/s/stoke_vegstories2.shtml

What other restricted diets are there? How can those affected ensure that they have a balanced diet?

- BBC Health: Coleliac [*article*]
  http://www.bbc.co.uk/health/conditions/coeliac1.shtml

Food and Technology

Can we use science and technology to make foods more healthy? Talk to the pupils about products such as 'super' milk which have had some of the fat removed and substances like vitamins and omega 3 oils added. Ask pupils if they can think of any other examples. The following articles may stimulate/support discussion:

- BBC News: Feeding Frenzy [*article*]
  http://news.bbc.co.uk/1/hi/business/6040446.stm
- BBC News: Not that Naughty but still nice [*article*]
  http://news.bbc.co.uk/1/hi/health/7047428.stm

Get Cooking!

Watch the following video and discuss with pupils how we can prepare healthy meals. What tips would they have? They try the carousel activity.

- BBC Newsround: Healthy Eating [*Flash video*]
  http://news.bbc.co.uk/cbbcnews/hi/newsid_2940000/newsid_2945000/2945096.stm

Carousel activity:

With pupils arranged in groups of 4-6, give out flip chart pages with a healthy eating stem written at the top, one to each group (some examples are given below). Ask pupils to write down their suggestions for completing the statement. After a few minutes, each group leaves their sheet where it is and moves onto the next one. They tick what they agree with that has already been written and if possible add further suggestions. This is done until all groups have completed each sheet.

Stems could include:

- Quick healthy meals I could cook at home are ...
- My favourite healthy meal is ...
- A healthy meal is one with ...
- I could reduce fat in my diet by ...
- I could reduce sugar in my diet by...
- My favourite way of cooking vegetables is ...
- I could eat more fruit each day by...
- I could add more fibre to my diet by ...

Healthy cooking!

Explore the following website:

- BBC 'Get Cooking' Online cooking tutorials [*articles & Flash video*]
  http://www.bbc.co.uk/food/get_cooking/

Find out how to source, prepare and cook healthy meals. Within this site, you may choose to focus on a particular area such as vegetables, pasta, herbs and salads, fish, etc. Try one of the interactive video recipes, which can be paused as each stage is completed. Examples include minced turkey stir-fried with basil, mixed vegetable curry and macaroni cheese.

- BBC 'Get Cooking' Interactive Recipes [*Flash Video*]
  http://www.bbc.co.uk/food/get_cooking/main/index.shtml

How Does Food Relate to my Culture?

What we eat is heavily influenced by where we came from and our family influence. Different cuisines are connected to different cultures. Explore how a diverse community is reflected in the food available. Watch the following clip and ask the pupils some questions (It may be necessary to go replay video and pause at appropriate piece). What foods did they recognise? Which had they not seen before? What countries/cultures are represented in the video?

- BBC Learning Zone clip 2290 - Eating a varied diet [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2290

Explore in more detail a particular country/culture/religion and its cuisine. Discuss how the food and cooking practices reflect a particular culture. Prepare a dish from a particular region in the world. What different ingredients and/or techniques are used? The following are some video clips and recipe ideas:

Sikh traditions

- BBC Learning Zone clip 490 – Sikh food [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=490
- BBC Newsround: Recipes for Diwali [*article*]
  http://news.bbc.co.uk/cbbcnews/hi/world/newsid_2387000/2387543.stm

Judaism

- BBC Learning Zone clip 486 – Judaism and food [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=486
- BBC Food: Passover Meal [*article*]
  http://www.bbc.co.uk/food/news_and_events/events_passovermeal.shtml

Indian cookery

- BBC Food: Focus on Indian food [*Flash Video*]
  http://www.bbc.co.uk/indianfoodmadeeasy/
- BBC Food: Madhur Jaffrey recipes [*Flash Video*]
  http://www.bbc.co.uk/food/get_cooking/main/index.shtml?section=2&id=../chefs/xml/006.xml

Italian food

- Learning Zone Clip 2401 Bologna - Pasta Capital of the World (*Flash Video* - some Italian spoken) http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2401
- Learning Zone Clip 2403 Italian ice-cream [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=2403
- BBC Food: Recipes: Pasta Dough [*article*] http://www.bbc.co.uk/food/recipes/database/freshpastadough_3067.shtml
- BBC Tees Recipes: BBC - Tees Parmo - Recipes - Basic tomato sauce [article] http://www.bbc.co.uk/tees/food/international_food/italian/italian5.shtml
- BBC Food: Recipes- Summer Ices [article] http://www.bbc.co.uk/food/recipes/mostof_ices.shtml

Chinese food

- BBC Learning Zone Clip 1332 – What people like to eat for breakfast and lunch (*Flash Video* some Chinese spoken) http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=1332
- BBC Food: Recipes- Quick hot and sour noodle soup [*article*] http://www.bbc.co.uk/food/recipes/database/quickhotandsournoodl_89280.shtml

Throughout the world, food is used to bring people together during special occasions and festivals. Choose a festival and find out more about it. Pupils could present their findings as a project. They could cook a particular dish associated with their chosen festival and as a class/year group, re-enact some aspects of the festival. The following links maybe helpful:

- BBC KS3 Citizenship: festivals [*article and Flash interactivity*] http://www.bbc.co.uk/northernireland/schools/11_16/citizenship/ethnic-minorities/flyonthewall.shtml
- BBC Food: News and Events [*article*] http://www.bbc.co.uk/food/news_and_events/events_index.shtml
- BBC Learning Zone Clip 1347 – Chinese New Year [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=1347

Local and Global Citizenship Unit - The cost of our food

This unit looks at the cost of our food from environmental and ethical viewpoints. Where some of our foods come from is investigated and the welfare of battery chickens is explored Issues around where our foods come from such as food miles, fair trade, GM and organic foods are also examined.

Learning Intentions

Local and Global Citizenship	**Key Concept – Human Rights and Social Responsibility** Investigate the principles of social responsibility and the role of individuals, society and government in promoting these. **Key Concept – Democracy and Active Participation** Investigate an issue from a range of viewpoints and suggest action that might be taken to improve or resolve the situation.
Links with Geography	Explore how we can exercise environmental stewardship and help promote a better quality of life for present and future generations, both locally and globally.
Links with Science	Explore some ethical dilemmas arising from scientific developments Explore issues related to Citizenship

Pupils are learning:

- To consider the source of their food.
- About animal welfare.
- To view an issue from a range of viewpoints. (Thinking, Problem-Solving and Decision-Making)
- Concepts such as food miles, GM foods, fair trade and organic foods.
- To select and evaluate information for a purpose. (Managing Information)

Where does our food come from?

In the following Newsround article, many eight year olds thought that eggs came from cows. Discuss whether children in Northern Ireland better informed?

- BBC Newsround: Where does you food come from? [*article*] http://news.bbc.co.uk/cbbcnews/hi/newsid_6400000/newsid_6404600/6404687.stm

Have a class discussion about where our food comes from both in terms of particular animals/crops and countries of origin.

Yoghurt: Any surprises in this video? Find out where yogurt is produced in Northern Ireland.

- Learning Zone Clip 1442- Inputs, Processes and Outputs about the story of yoghurt [*Flash Video*] http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=1442

Bread: Listen to this clip about how a particular brand of bread is produced in Northern Ireland

- BBC TANDY Back to Basics: Bread [Flash Audio] http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/where_does_our_food_come_from.shtml

Here are some answers. Ask pupils to come up with appropriate questions.

Answer	Possible questions
50	How many years has the batch loaf been in production?
Yeast	What makes the bread rise?
Vegetable oil	What stops the bread from sticking?
80	How many minutes does it take a loaf to cook?
1800	How many loaves can be cooked in an hour?
200,000	How many loaves are sold per week in Northern Ireland by this company?

It may be useful to replay the audio clip. Ask pupils to find out the names of companies that produce bread in Northern Ireland? Which is the closest?

Apples: - Listen to the following clips about apple production in Armagh.

- BBC TANDY: Down on the Farm: Apples 1 [Flash Audio]
- BBC TANDY: Down on the Farm: Apples 2 [Flash Audio]
- BBC TANDY: Down on the Farm: Apples 3 [Flash Audio]

http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/where_does_our_food_come_from.shtml

Questions for discussion:

- In what ways is water used in apple production?
- How has apple production changed over the years?
- How many sizes of apples are there?
- Where do the apples you buy at home come from? Have you ever been aware that you've bought apples that came from Armagh?
- Have you learned anything new about apple production?

Chickens

The conditions in which chickens are reared have featured in the news lately. Watch the following clip on Hugh Fernley Whittingstall's campaign about battery chickens

- BBC News: Chef fails in bid to improve Chicken Welfare http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/where_does_our_food_come_from.shtml

Questions for discussion:

- What are the issues about battery chickens?
- What arguments does Hugh Fernley Whittingstall make?
- What arguments does Tesco make?

Find out more about the strategies that Hugh Fernley Whittingstall used in his campaign. Did he make a difference? Check out the choice and price range of chicken at your local supermarket? Ask the class to find the difference between the different types of chicken. Do they think they will taste any different. Then watch the following clip

- BBC Countryfile: Taste of Chicken http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/where_does_our_food_come_from.shtml

Questions for pupils:

- What are the different types of chicken being tested?
- What were the findings?
- What have you learned from this video clip?
- What further questions do you now have?

Food miles

Watch this video clip. Why have these people decided to grow their own food?

- BBC News: Village Grows its own Food [*Windows Media Video*] http://news.bbc.co.uk/player/nol/newsid_7010000/newsid_7011300/7011334.stm?bw=nb&mp=wm&news=1&bbcws=1
- BBC Bloom: Food Miles [*article*] http://www.bbc.co.uk/bloom/guides/foodmiles.shtml
- BBC Food: Food Miles [*article*] http://www.bbc.co.uk/food/food_matters/foodmiles.shtml

Ask the pupils to record the food they eat in one day. They then calculate how far each piece of food travelled from production to place of purchase; and add up their total food miles for one day of eating.

Ask pupils to commit to one step they will take to reduce their food miles – this could tie in with schools gardening project.

GM foods

Ask the class what are GM foods? The following web pages help to explain genetically modified foods.

- BBC Newsround: What are GM Foods? [*article*] http://news.bbc.co.uk/cbbcnews/hi/newsid_1740000/newsid_1746900/1746923.stm
- BBC Topics: GM Food *[article*] http://www.bbc.co.uk/topics/gm_food

The ideas behind genetic engineering are not new – artificial selection is the basis of modern farming. Animals were bred to encourage the characteristics familiar to us today. Modern wheat, barley and other crops bear little resemblance to the plants

they originated from. Listen to the following clip about choosing better varieties of plants.

- BBC TANDY: Growing Places: Plant Varieties [Flash Audio] http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/gm_foods.shtml

What kind of characteristics are they looking for in plants? Genetic engineering is a faster way of producing the characteristics we want in plants. (Genetic engineering is the method used to produce genetically modified (GM) foods). Read the following articles about genetically modified foods:

- BBC News: GM Tomatoes Fight Cancer [article] http://news.bbc.co.uk/1/hi/health/769507.stm
- BBC News: Quick Guide to GM Foods [article] http://news.bbc.co.uk/1/hi/sci/tech/5098468.stm

List five key points from each article. Place each of the points that you have written on a 'pmi' grid, where p stands for positive, m for minus and i for interesting:

Positive	Minus	Interesting

Watch the following video clips:

- BBC News: GM Crops http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/gm_foods.shtml
- BBC News The GM Debate For [flash Video] http://news.bbc.co.uk/1/hi/sci/tech/7425122.stm

Consolidate learning on this issue with a 'spectrum debate'. This strategy allows pupils to express where they stand when confronted with ambiguity or grey areas – on issues which are not black and white. Construct an imaginary line across the room with each end of the room represents opposing viewpoints, in this case totally

for GM foods and totally against GM foods. This imaginary line forms a spectrum of levels of agreement/disagreement with the midpoint representing neither for nor against. Pupils line themselves along this spectrum. They are free to explain their opinion and may move place in they change their mind during the debate. A debrief after the activity will highlight areas where there was agreement and areas which divided the class.

Fair Trade

Ask pupils what they know about fair trade already, then watch the following video clip:

- Learning Zone Clip 503- Ecuador's links with Trans-National companies [*Flash Video*]
  http://www.bbc.co.uk/apps/ifl/learningzone/clips/showrecord?Id=503

Ask pupils what they learned from the video? What further questions do they now have?

Pupils responses could be recorded on a grid:

What we know already:	New information from video:	Further questions:

Pupils research their further questions using the websites below.

- BBC Bloom: Fair trade [*article*]
  http://news.bbc.co.uk/cbbcnews/hi/newsid_2320000/newsid_2327600/2327671.stm
- BBC Food: Fair trade [*article*]
  http://www.bbc.co.uk/food/food_matters/fairtrade.shtml
- Fair trade [*article*]
  http://www.fairtrade.org.uk/

Do any of their questions remain unanswered? Discuss how they could find the answers, for example, inviting in a guest speaker; contacting a development organisation.

Organic Food

What is organic food? Using the websites below, ask pupils to find five facts about organic food.

- BBC Newsround: What is Organic Food? [*article*]
  http://news.bbc.co.uk/cbbcnews/hi/newsid_2320000/newsid_2327600/2327671.stm
- BBC Food: Organic Food [*article*]
  http://www.bbc.co.uk/food/food_matters/organicfood.shtml

Collate the class information. Watch the following news clip. What evidence is there that organic foods are better for you?

- BBC News: Organic Food 'better for you' [*Windows Media Video*]
  http://news.bbc.co.uk/player/nol/newsid_7060000/newsid_7067700/7067740.stm?bw=nb&mp=wm&news=1&bbcws=1

Listen to the following audio clips about organic farming and conventional farming. What are the advantages and disadvantages of organic food/farming?

- BBC TANDY: Growing Organically: Organic Crop [*Flash Audio*]
- BBC TANDY: Growing Organically: Organic Crop2 [*Flash Audio*]
- BBC TANDY: Growing Organically: Organic Food [*Flash Audio*]

http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/organic_food.shtml

Hot seating activity

A single 'hot seat' is placed facing the rest of the group arranged in a semi-circle. Pupils take on a role relevant to the debate, for example, for/against organic food or the view of consumer, a shopkeeper etc when they sit in the 'hot seat'. The rest of the group make up challenging questions for them.

When things go wrong ...

Ask pupils if they can think of problems with our food supply recently and over the past couple of years. Examples include the pork scare, foot and mouth, mad cow disease.

- BBC News: Pork Dioxin Scare http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/citizenship/when_things_go_wrong.shtml
- BBC News: Q & A Food and Mouth disease [*article*] http://news.bbc.co.uk/1/hi/uk/6930899.stm
- BBC Newsnight: Mad cow disease [*Flash Video*] http://news.bbc.co.uk/1/hi/programmes/newsnight/7894427.stm
- BBC News New Quick Test For Avian Flu [*Flash Video*] http://news.bbc.co.uk/1/hi/england/7561183.stm
- BBC News: Curry Sparks Egg Scare [*Windows Media Video*] http://news.bbc.co.uk/player/nol/newsid_6590000/newsid_6591700/6591705.stm?bw=nb&mp=wm&news=1&nol_storyid=6591705&bbcws=1

The class may research one food scare or break up into groups to research different ones.

Pupils must find enough information:

- To describe the food scare.
- What caused it.
- Action being taken by government/authorities.
- Their opinion of the action taken – how successful it was – what could have been done differently – lessons for the future.

What have we learned?

Discuss with pupils how this unit has changed their awareness of issues around food and where it comes from, or if it has made any difference.

Ask pupils to record one new thing that they have learned during this unit and one action that they are going to take. They then share this with a partner and then share in small groups. One member of each group then feeds back to the class.

This unit has explored the ethical and environmental costs of food which are tied in with the actual financial cost of food. The following website looks at issues around increasing food costs worldwide:

- BBC News Cost of Food [*article*]
  http://news.bbc.co.uk/1/hi/in_depth/world/2008/costoffood/default.stm

The class may wish to consider further action they wish to take now they have tasted some of the politics of food.

Employability Unit : The World of Work

This unit looks at Employability in the catering industry. Exploring the qualifications and experience needed to be a chef. The diversity of the local food industry is explored and a local food business is featured.

Learning Intentions

Employability	**Key Concept - Career Management** Investigate a variety of both familiar and unfamiliar jobs. Make use of appropriate information, advice and guidance to inform career management.
	Key Concept – Work in the Local and Global Economy Investigate the local impact of the global market.
	Key Concept – Enterprise and Entrepreneurship Explore the range of small businesses in the life of the community and consider possible implications for career planning.
Links with	**Key Concept – Healthy Eating**
Home Economics:	Investigate the impact of storage, preparation and cooking on food. (through online course on Masterchef web page)

Pupils are learning:

- About the work of a chef and the necessary steps to working in that field.
- To be aware of their personal strengths, limitations and interests. (Self-Management)
- To explore the reasons for and benefits of workers who have come from other European states and beyond.

- To consider the importance of small businesses in the Northern Ireland economy.

How can I become a chef?

Ask the class to name some celebrity chefs, and discuss what skills, experience and qualifications they have. Look at the following links on how to become a chef.

- BBC Masterchef: Becoming a Chef [*article*] http://www.bbc.co.uk/food/tv_and_radio/masterchef/training_index1.shtml
- Careers Advice: Chef job profile [*external link: article*] http://careersadvice.direct.gov.uk/helpwithyourcareer/jobprofiles/JobProfile?jobprofileid=151&jobprofilename=Chef
- Caterer.com Becoming a chef [*external link: article*] http://www.caterer.com/Content/CareerAdvice/BecomingAChef.html

Discuss the following topics with the class

- What did you not know/realise before about training to be a chef?
- Besides the obvious cooking skills, what other skills/characteristics are needed to be a chef?
- How could these skills be useful in other career areas?
- What do you like about this career?
- What do you not like?

Consolidation – Questions for consideration:

- What are the next steps in becoming a chef? – explore subject choices and qualifications needed.
- What are the prospects for this kind of work in Northern Ireland?
- What other jobs are available in the catering industry?
- How is the catering industry likely to change in the future?

If the class is still enthusiastic about becoming a chef, complete the BBC Masterchef course *[article]*
http://www.bbc.co.uk/food/tv_and_radio/masterchef/mc00001_index.shtml

Foreign Nationals in the local food industry

Listen to this audio clip of foreign nationals talking about working and living in Northern Ireland, along with their employer. Discuss with the class whether the food industry in Northern Ireland could function without them?

- BBC TANDY: Down on the Farm: Working on the farm. [*Flash audio*] http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/employability/ft_cl_youeat_emp_economy.shtml

Pupils complete a 'Consequence Wheel' on foreign nationals working in Northern Ireland.

The main action is placed in the centre circle. Direct consequences are linked to the main circle. Pupils try to think of as many direct consequences as possible. They then consider second order consequences, drawn in circles and linked to the direct consequences with double lines.



Enterprise and Entrepreneurship

Explore the range of small businesses in the community and consider possible implications for career planning. Listen to the following audio clips about the experiences of some small food businesses in Northern Ireland.

- BBC TANDY: Down on the Farm: Local produce [Flash Audio] http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/employability/ft_cl_youeat_emp_enterprise.shtml

Discuss whether the class has eaten any food that has come from this producer? What changes has this producer noticed?

- BBC TANDY: Back to Basics: Milk: Causeway Cheeses [Flash Audio] *http://www.bbc.co.uk/northernireland/forteachers/you_are_what_you_eat/employability/ft_cl_youeat_emp_enterprise.shtml*

- Causeway Cheese Company [external link: article]
  http://www.causewaycheese.com/index.php

Discuss with the class how this producer makes his product unique? Is the product always the same? Having listened to these clips, can you think of any small food businesses that you could set up? What raw materials would you need? Estimate the costs of your raw materials and your finished product. Could you make a profit? What health and safety steps would you need to consider?

What have we learned?

Ask pupils what new information they have learned about the world of work from this unit.

Has it had any impact at this stage on their future career choice? What further information, if any, do they now wish to find?

Pupils may find it useful to draw a mind map of the issues they have encountered in this unit.

A mind map is similar to the consequence wheel described above. Pupils start with a circle at the centre of the page with 'what I have learned' written inside. Using branches from this circle, pupils write in the main ideas, and then sub-branches if necessary. Pupils share their mind maps with each other and then feed in to a class debrief.