SCIENCE
YEAR 3-4
Cycle B – Unit 7

Healthy Foods

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RANGE

Interdependence of organisms

2. the need for a variety of foods and exercise for human good health
7. how humans affect the local environment

KEY VOCABULARY

balanced diet
nutrition
fruit/vegetables
starch
meat/fish/eggs
dairy
fat/sugar
salt (sodium)
carbohydrate
vitamins
table
bar chart
axis
tally
scale
units

Developing thinking
(Plan-Develop-Reflect integrated into activities)

LNF – Main Numeracy Strands covered*

Strand:
Developing numerical reasoning
Elements:
Identify process and connections
Represent and communicate
Review

Strand:
Using data skills
Elements:
Collect and record data
Present and analyse data
Interpret results

**Refer to LNF numeracy framework for details of specific skills within each element.*

LNF – Literacy (writing) opportunities

Element: Organising information and ideas
Writing accurately

Writing to inform, instruct and find out

Developing ICT

School to identify and provide opportunities for developing this skill within the scope of the unit.

Curriculum Cymreig

School to identify and provide opportunities for developing this skill within the scope of the unit.

Personal and social education

School to identify and provide opportunities for developing this skill within the scope of the unit.

Science – Medium Term Planning (half termly)

Year Group	**3/4**	Term	**Cycle B – unit 7**	Unit Title	***Healthy Foods***

Range: ***Interdependence of organisms***
2. the need for a variety of foods and exercise for human good health
7. how humans affect the local environment

Cross Curricular Links:

Skills (Principal skills in bold italics)	**Suggested activities**	**Resources and web links**	**Assessment Opportunities**
PLAN Identify gaps in prior knowledge ***Plan the process/method to be used*** **DEVELOP** Make careful observations and measurements Begin to check observations ***Make comparisons and identify and describe patterns and trends in data*** **REFLECT** Suggest how the method could have been improved	**1. Big Question: How do scientists 'measure' growth?** Intro to topic and discussion of what pupils understand by 'growth'. Show video clip of stages in plant/animal life cycle as stimuli and/or pictures of stages in human life cycle. Pupils note down the skill milestones associated with progression from baby-toddler-infant-junior-adolescent-adult. Record diagnostic assessment – mind map, KWL grid or ideas poster etc. **Introduce the skill – Planning an investigation. 'Measuring hands' activity: OAM unit 1, p.8** • Introduce task and discuss ideas • Create a tally record using the whole class data. Try to avoid printed worksheets and challenge pupils to create own simple tables. • Discuss the results and create an oral presentation of the results (groups to decide the presenters). • Groups to create a mind map of the skills used during the task. **Introduce the skill – Planning an investigation. 'Planning steps' activity: OAM unit 1, p.13** • Use this activity as a basis to model an investigation plan for pupils. • Consider a focus on groups/pair records. • Highlight what makes an investigation plan 'good' – this will be the pupils' success criteria. • Record these success criteria in a notebook or in pupils' books. • **More able: create bar graph with support.** **Practise the skill - Planning an investigation 'Investigating growing' activity: SEM unit 8, p.10** • Discuss the results of the previous task – what can be improved? • Challenge the pupils to raise testable questions and investigate. • Can pupils complete their own simple plan? • Recap on SI units for measure and record findings in a table. • Assist pupils in identifying patterns and trends. • More able: create bar graph with support **To write to inform** **Text type: science write-up/report**	http://resources.hwb.wales.gov.uk/VTC/2008-09/science/cripsat/human_body/eng/index.html http://www.echalk.co.uk/ 2006 Optional Assessment Materials Interactive planning boards (to plan method)	Use preferred diagnostic strategy/tool ***Can pupils plan with some independence? (Level 3)*** Can pupils produce their own tally? (Level 2) Can pupils use an empty table format ? (Level 3) Can pupils create bar charts with axes provided? (Level 3) ***Can pupils identify simple patterns? (Level 3)***

PLAN Plan the process/method to be used **DEVELOP** Make comparisons and identify and describe patterns and trends in data ***Form considered opinions and make informed decisions*** **REFLECT** Linking learning to similar situations within and outside school	**2. Big Question: How do we create a food diary?** Discuss our diet in relation to that of ancient human beings. What are the differences? Are we eating healthily? What should we be eating? Show pupils video clip of apes and/or monkeys feeding. What are the main constituents of their diet? **Introduce the skill – Conclusions. 'Healthy eating and Healthy choices' activities: NGfL KS2 science** • Explore activities and discuss pupils' ideas. • Challenge pupils to draw conclusions on evidence. Discuss fact and opinion in science. • Discuss how people hold different interpretations on topics. • Draw pupils to a consensus and help pupils make an informed decision about healthy lifestyles. **Practise the skill – Conclusions. 'Food diary' activity: SEM unit 8, p.16** • Introduce the activity and encourage pupils to select their own food groups to record against. • How will they record? Written comment or tally? How frequently? • Pupils create bar graph of findings. • What main conclusions can be drawn from their data? • Pupils create a healthy eating 'report card' for themselves. Do their diets need to be changed in any way? • More able: select own method for communicating ideas. **To write to inform** **Text type: science write-up/report**	http://www.arkive.org/ http://resources.hwb.wales.gov.uk/VTC/2008-09/science/cripsat/healthy_lifestyles/eng/index.html 2007 Scientific Enquiry Materials	Can pupils plan with some independence? (Level 3) Can pupils create a bar graph with axes provided? (Level 3) Can pupils begin to organize findings, including simple tables and bar charts? (Level 3) ***Can pupils make decisions by weighing up evidence? (Level 3)***

PLAN ***Plan the process/method to be used*** Control hazards and risks (hygiene) **DEVELOP** Make comparisons and identify and describe trends in data ***Form considered opinions and make informed decisions*** **REFLECT** Link learning to similar situations within and outside school.	**3. Big Question: Can we find out which crisps are the healthiest?** **Introduce the skill – Find evidence/information and consider safety.** Ask pupils to bring in two packets of their favourite brands and/or flavours of crisps. Tell pupils they have been chosen to research the 'healthiest' type of crisps for a new café. • Encourage the pupils to brainstorm the characteristics of 'tasty' crisps. Consider diamond ranking the properties. • Ask pupils to devise a taste test. • How will pupils consider health and safety? • How would they hold the test? How would they measure and record taste? What are the hygiene issues associated with this activity? **Practise the skill – Conclusions.** • Encourage the pupils to arrange the crisps according to fat/salt content using a Venn diagram. • Are the crisps which have a high fat content saltier? In which other way can we group the crisps? • How will pupils record findings for each brand? (Tabulate) • How will pupils show findings? (Bar graph) • Can pupils make comparisons and make informed decisions? (Email, letter, poster etc.) • More able: the Carroll diagram to try and arrange the crisps (high/low fat content against high/low cost). • Discuss the results and report back to the owner of the café via letter or email. **To write to inform** **Text type: science write-up/report**	Selection of crisps/brands Large Venn and Carroll templates	***Can pupils plan with some independence? (Level 3)*** ***Can pupils make decisions by weighing up evidence? (Level 3)*** Can pupils link learning to familiar situations? (Level 3)
PLAN Identify gaps in prior knowledge ***Make predictions using prior knowledge*** **DEVELOP** Control hazards and risks (hygiene) **REFLECT** ***Suggest how the method could have been improved***	**4. Big Question: Do you know which foods are salty?** Discuss previous examples of taste test activities in school. From memory, can pupils list examples of salty foods and non-salty foods? **Introduce the skill – Predict. 'Salt in my food' activity: SEM unit 8, p.22** • Consider giving pupils a taste test of small amounts of foods with higher and lower salt content, e.g. breads, baked beans, fruit, pizza, processed meats etc • Challenge pupils to predict high salt foods - record predictions. • How will pupils score/rank their taste test? • Gather findings from taste test. **Practise the skill – Suggesting improvements to a method. SEM unit 8, p.23** • Review the taste test. How can it be improved? • Ask pupils how they would find out about the amount of salt in different foods. • Research salt content and tabulate findings. Consider producing bar chart of findings. • Can pupils create a small flyer for parents to include in pupils' lunch boxes (explaining which foods are high in salt). • Share examples of health-related persuasive leaflets. Discuss simple success criteria for pupils' leaflet. **To write to inform** **Text type: science write-up/report**	2007 Scientific Enquiry Materials	***Can pupils use everyday ideas to make predictions? (Level 3)*** ***Can pupils suggest how the method could be improved? (Level 3)***

PLAN Suggest how to find relevant information and ideas. **DEVELOP** Able to find relevant information ***Make comparisons and identify and describe patterns/trends in data*** Distinguish between facts and opinions in science. **REFLECT** Linking the learning to similar situations within and outside school	**5. Big Question: What *is* 5-a-day?** Introduce a variety of fruit and vegetables and discuss origins. Record pupils' ideas. **Introduce the skill – Review findings. 'Far away fruit salad' activities: NGfL KS2 science** • Discuss aspects of healthy diets in context of fruits shown. • Ask pupils to raise questions linked to fruits? Use examples given if necessary. • Discuss/explain the concept of 'air miles'. **Practise the skill – Review findings. 'Making a fruit salad' activity: NGfL KS2 science** • Use information on food air miles to sort fruits by distance travelled to UK. • Ask pupils to identify those foods that have high air miles. • Can pupils sort foods by air miles? • How will pupils record their findings? • More able: select own method of recording findings. Create own bar chart. **Practise the skill – Review findings. Healthy eating articles: BBC Newsround site** • Ask pupils to use the Newsround website to search for answers to their questions (there are a number of fantastic articles related to health, lifestyle and diet etc) • Search using BBC browser search box, e.g. 'Newsround healthy eating'. • Can pupils find information on 5-a-day? • What other interesting articles can pupils find? • Consider giving pupils 5 short articles from the website to sort by fact and opinion and/or plan and perform a short TV report on healthy eating. **To write to inform and explain** **Text type: notes/script**	Variety of websites and books etc http://resources.hwb.wales.gov.uk/VTC/ngfl/2007-08/esdgc/far_away_fruit_salad/index.html http://www.bbc.co.uk/newsround/	Can pupils suggest where to find evidence, information and ideas? (Level 3) ***Can pupils identify simple patterns? (Level 3)***
COMMUNICATE ***Use relevant scientific vocabulary*** **DEVELOP** ***Know about hazards and risks*** **REFLECT** Linking the learning to similar situations within and outside school	**6. Big Question: Can you plan a healthy meal?** Introduce a variety of fruit and vegetables and discuss origins. Record pupils' ideas. **Introduce the skill – using relevant scientific vocabulary** Discuss aspects of healthy diets in context of fruits shown. Ask pupils to recap on their earlier food diary work and assess how healthy their meals are. • Introduce/review key food group vocabulary: (1) fruit & vegetables; (2) starchy foods; (3) meat, fish, eggs and beans; (4) dairy produce and (5) fat and sugar. **Practise the skill – using relevant scientific vocabulary** • Use information to produce an information leaflet/poster/letter to communicate their knowledge about food groups. • Can pupils plan a balanced meal and/or weekly meal planner. • Consider allowing pupils to interview school cook or prepare a healthy snack/sandwich. • Discuss food safety and hygiene. Consider challenging pupils to create a poem to communicate their ideas and/or recipe instructions for a healthy meal. **To write to inform and explain** **Text type: poem**	Variety of websites and books etc Kitchen utensils and variety of chosen ingredients http://resources.hwb.wales.gov.uk/VTC/ngfl/2007-08/esdgc/far_away_fruit_salad/index.html http://www.nhs.uk/Livewell/Goodfood/Pages/Healthyeating.aspx http://www.bbc.co.uk/newsround/	***Can pupils use equipment correctly and safely? (Level 3)***

PLAN ***Select success criteria*** ***Set up and control a fair test, controlling variables*** **DEVELOP** Use apparatus and equipment safely Make careful observations and measurements **REFLECT** Begin to evaluate outcome against success criteria	**7. Big Question: How can we test oranges?** **Introduce the skill – Planning an investigation 'Oranges' activity: Our OAM topic 2, p.11** Ask pupils to list possible investigations that they could investigate. Consider concept cartoon of pupils' ideas as stimuli. Model a 'good' planning sheet on the IWB. Help pupils identify key features (success criteria). Recap on measuring equipment, SI units and scales. **Practise the skill - Planning an investigation. Are bigger oranges juicier?** Challenge the pupils to think about what determines how much juice is in an orange. Pupils have been asked to investigate on behalf of a supermarket chain. Size? Price? Origin? • Pupils to arrange ideas and justify their reasons. • Allow the groups to decide what to investigate – amount of juice versus size, cost or the origin of the orange. • Discuss with pupils how to plan and carry out an investigation by selecting appropriate equipment. • More able pupils: setting simple criteria for success and select own equipment. • Collect data and help pupils construct a bar chart. Model examples of a 'good' bar chart. • Present their findings to the supermarket owner. **To write to inform** **Text type: science write-up/report**	2005 'Our OAMs' assessment booklet oranges squeezers various size measuring cylinders Interactive planning templates	***Can pupils agree on some basic success criteria? (Level 3)*** ***Can pupils plan with some independence and also understand the concept of fairness? (Level 3)***

REFLECT ***Describe how they have learned, and identify the ways that worked the best.*** Link the learning to similar situations, within and outside school.	Revisit initial diagnostic assessment. Can pupils demonstrate understanding at end of topic and discuss new skills learned and/or practised?	Use preferred AfL strategy	***Can pupils say what worked and didn't work? (Level 3)***
Evaluation			