SCIENCE
YEAR 3-4
Cycle A – Unit 5

Habitats and food chains

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KEY VOCABULARY

habitat
food chain
predator
prey
adapt
tally
table
bar chart
axes
predict

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

RANGE

Interdependence of organisms

4. through fieldwork, study the plants and animals found in two contrasting local environments, *e.g. identification, nutrition, life cycles, place in environment*
5. the interdependence of living organisms in those two environments and their representation as food chains.
6. the environmental factors that affect what grows and lives in the environment, *e.g. sunlight, water availability, temperature*

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 term)

Year group	3/4	Term	**Cycle A – Unit 5**	Unit title	**Habitats and food chains**

Range: ***Interdependence of organisms***
4. through fieldwork, study the plants and animals found in two contrasting local environments, *e.g. identification, nutrition, life cycles, place in environment*
5. the interdependence of living organisms in those two environments and their representation as food chains.
6. the environmental factors that affect what grows and lives in the environment, *e.g. sunlight, water availability, temperature*

Cross Curricular Links:

Skills	Suggested activities	Resources and web links	Assessment Opportunities
PLAN ***Identify gaps in prior knowledge.*** ***Plan the process/method to be used.*** **DEVELOP** Use apparatus and equipment Make careful observations. **REFLECT** Describe how they have learned, and identify the ways that worked the best.	**1. Big Question: What types of plants and animals live in our local environment?** Show video of ladybird from http://www.arkive.org/ at start of session. Find further video clip of animal related to ladybird by habitat. Ask pupils to predict what animals and plants live within their local area, e.g. school garden or wilderness area. **Introduce the skill – Plan the method/approach to be used** • *Can you think of other plants and animals that live in our local environment?* Children to make a Graffiti board of their ideas/words relating to big question (groups of 3-4). • Groups plan how to collect information, including resources and recording methods. **Practise the skill – Plan the method/approach to be used** • Fieldwork; *Exploring /Classifying and Identifying*. Investigate plants and animals found on school field (children to decide on equipment and best area for hunt - could be a metre square sample but this may limit findings). • Repeat for a contrasting environment, e.g. hedgerow. Use of bug collectors/pooters/digital camera (for birds, plants, insects that cannot be collected). • Pupils record insects/plants - draw main features.	http://www.arkive.org/ http://resources.hwb.wales.gov.uk/VTC/2009-10/science/cripsat/e13-plants-animals/index.html http://resources.hwb.wales.gov.uk/VTC/ngfl/science/cynnal/english/index.html	***Can pupils plan the method with some independence? (Level 3)*** Can pupils measure using simple equipment? (Level 4)

PLAN ***Identify gaps in prior knowledge.*** ***Plan the process/method to be used.*** **DEVELOP** Use apparatus and equipment Make careful observations. **REFLECT** Describe how they have learned, and identify the ways that worked the best.	**2. Big Question: What types of plants and animals live in our local environment? …Cont.** **Practise the skill – Identify gaps in prior knowledge** • Gather everybody's info together and stick onto board. Sort into two environment sets. • Were there any plants or animals that you found in both environments? Use Venn diagrams to sort. Children to transfer findings to own labelled Venn diagram and/or Carroll diagrams. Describe any patterns in their findings e.g. were there more plants in the hedgerow because it is sheltered? • Challenge pupils to explain patterns. • More able: use digital cameras to record findings. Pupils to decide to record measurements of plant heights etc and tabulate. Pupils create own bar graphs. Reflection Caterpillar (reflect on activity and describe what they did/what worked/did not work).	http://www.echalk.co.uk/ http://www.bbc.co.uk/learningzone/clips/ http://resources.hwb.wales.gov.uk/VTC/2009-10/science/cripsat/e14-interdependence/index.html	***Can pupils plan the method with some independence? (Level 3)*** Can pupils measure using simple equipment? (Level 4)
PLAN ***Plan the process/method to be used.*** ***Select equipment.*** **DEVELOP** Identify, describe and begin to explain patterns and relationships. Form considered opinions.	**3. Big Question: What animals live in our pond area habitat?** **Introduce the skill – Plan the method/approach to be used** • In pairs or as a whole class activity, plan how pupils could investigate the question: What animals live in our pond area? • Make predictions on which animals will live in different parts of the pond. In small groups explore school pond area. (Safety – consider a risk assessment.) • Children to identify necessary collecting equipment. **Practise the skill – Identify gaps in prior knowledge** • Take a sample of pond weed for closer observation. Record each thing found onto a post-it note. • Why do you think the animals and plants you found in the pond area are living and growing there? Type up each reason they come up with to make quick diamond ranking cards. Print out enough copies for groups to sort onto diamond ranking template. Share group decisions. • Try a whole-and-part thinking grid to study simple adaptations in animals/insects. • Make a large-scale group Carroll diagram using post-it notes. Children to decide on 4 classification labels, e.g. Lives on water/lives on land/moves/does not move. • Record in workbooks or photograph large-scale Carroll diagram as evidence for books. **To write to inform and explain** **Text type: diagrams/notes**	http://resources.hwb.wales.gov.uk/VTC/2008-09/science/irf08-74/index.htm	***Can pupils plan the method with some independence? (Level 3)*** Can pupils use a given format to sort and/or communicate findings? (Level 3) Can pupils use scientific vocab to describe adaptations for habitat? (Level 4)

PLAN Plan observations that need to be made **DEVELOP** ***Make careful observations, using digital equipment at times.*** **REFLECT** Suggest how the approach/method could be improved	**4. Big Question: How do animals adapt to different habitats?** Select activities from OAM Unit 5 'Fantasy Animals' to gauge pupils' understanding of animals and adaptations to different habitats. Relate knowledge to the insects observed during the recent field work activities. **Introduce the skill – Make careful observations** • Show pupils a selection of video clips/photos to generate relevant vocabulary. Relate features/adaptations of animals to habitats. **Practise the skill – Make careful observations** • Use OAM Unit 5 task. **To write to inform and explain** **Text type: non-chronological report**	http://resources.hwb.wales.gov.uk/VTC/2009-10/science/cripsat/e14-interdependence/index.html http://resources.hwb.wales.gov.uk/VTC/2009-10/science/cripsat/e13-plants-animals/index.html	Use assessment criteria in OAM unit. These relate to science enquiry skills.
PLAN Plan the process/method to be used. **DEVELOP** ***Make comparisons and identify and describe patterns or trends*** ***Form considered opinions*** **REFLECT** Describe how they have learned, and identify the ways that worked the best.	**5. Big Question: Where do woodlice prefer to live?** Introduce pupils to the big question. Discuss and predict. Generate key vocabulary and challenge groups to map out a simple plan in order to test this question. - How do we know that woodlice prefer damp conditions? - How do we know mealworms prefer dark? - How can we find out what snails prefer to eat? - Do earth worms live above or below ground? **Introduce the skill – Make comparisons and form considered opinions** • Gather pupils' ideas and model a whole-class planning board. • How many woodlice should we use? • How long should we leave them to find out? • What sort of food should we give the snails? • How can we see worms if they're underground? **Practise the skill – Make comparisons and form considered opinions** • Challenge pupils to select simple equipment and and consider hygiene. • Set up investigation and plan to make systematic observations. • Discuss findings - model language patterns associated with conclusions. **To write to inform** **Text type: science write-up/report**		***Can pupils identify simple patterns and trends? (Level 3)*** ***Can pupils say what they have found out from their work? (Level 3)***

PLAN Suggest how to find relevant information and ideas. **DEVELOP** ***Use prior knowledge to explain.*** **REFLECT** Describe how they have learned and identify the ways that worked the best.	**6. Big Question: Who eats who in a habitat?** Review findings from recent field work. Discuss feeding relationship and introduce the terms predator and prey. **Introduce the skill – Use prior knowledge to explain** • How do scientists represent these relationships? • Groups to swap ideas and discuss most effective method of communicating food chains. • Show pupils accepted scientific representation of a food chain. Discuss. • Discuss different examples. Where do plants occur in the chains? Where do carnivores occur? **Practise the skill – Use prior knowledge to explain** • Challenge pupils to organise a series of pictures or post-it notes in order to represent the food chains in their chosen habitat. • Discuss and explain the feeding relationships using scientific vocabulary. • Pupils could use reference books to find relevant information regarding diets of animals and/or insects.	http://resources.hwb.wales.gov.uk/VTC/2009-10/science/cripsat/e14-interdependence/index.html	***Can pupils explain using everyday ideas? (Level 3)*** ***Can pupils explain using scientific language? (Level 4)***
COMMUNICATE ***Communicate clearly using writing, drawings and diagrams*** **DEVELOP** Use prior knowledge to explain. Form considered opinions. **REFLECT** Begin to evaluate outcomes against success criteria.	**7. Big Question: Can you find a home for the frog?** What would make an ideal home for a frog? (See p.129 in *Active Assessment* for ideas). **Introduce the skill – Communicate clearly using writing and diagrams** • Research the type of environment (introduce term 'habitat') that frogs like to live in – use of internet search engine/http://www.arkive.org/ reference books/CD Rom. • Children to suggest where to find information. More able may be able to suggest sources of information. • Think-Pair-Share - list important features of a home for a frog using 'more important'/'less important' sorting grid. Consider using a data-logger to find out what temperature/light levels are like in the pond area. **Practise the skill – Communicate clearly using writing and diagrams** • Making things: decide upon appropriate materials needed to construct frog's home. Use diagrams to communicate ideas. Collect necessary materials and make the design. • Consider homework task: ask pupils to create a mini habitat inside a shoe box. • Communication: act as an estate agent trying to sell design to a frog. Design and print a simple advert using science vocabulary. • Two stars and a wish – self-evaluation. Swap books with a peer who can add evaluative comment (underneath design sheet). **To write to inform and explain** **Text type: non-chronological report/advertisement**	http://www.echalk.co.uk/ http://www.bbc.co.uk/learningzone/clips/ http://www.arkive.org/	***Can pupils begin to organise their findings and display these in a given format? (Level 3)*** Can pupils organise and communicate their findings using scientific language, including tables and charts? (Level 4)

REFLECT Describe how they have learned, and identify the ways that worked the best. Link the learning to similar situations, within and outside school.	Add ideas to graffiti boards using coloured pen to show increased understanding at end of topic. Reflection caterpillar (on whole topic)		Can pupils say what worked and didn't work? (Level 3) Can they describe how they have worked, including strategies? (Level 5) Can pupils suggest ways to improve their work? (Level 4)

Evaluation