Subject: Science Year 2: Microhabitats

NC/PoS:

- identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other
- identify and name a variety of plants and animals in their habitats, including microhabitats

Prior Learning (what pupils already know and can do)

Know that we need to look after our world (animals and plants) Know that plants are important in keeping them healthy. Know that different animals are found in different environments (farmyard, forest) Know the basic needs of animals (air, water, food, shelter) Know plants and animals found in local environment. Know that living things grow and have life cycles. Know plants need light, water, air, nutrients and space.

Check the children can recall the following key facts from the unit *Science, Year 2, Living things: Habitats*:

- A habitat is where plants and animals live.
- There are a variety of habitats, including woodland, ocean, rainforest and coastal.
- A habitat provides living things with what they need to grow and survive.
- Living things depend on each other for food and shelter.

End Goals (what pupils MUST know and remember)

- Know what a microhabitat is - a small, specialized habitat within a larger habitat – decomposing log (earthworm, centipede, beetle), temporary pool of water (water mites), and under rocks (worm, ant, cricket)

Key Vocabulary: living things, dead, alive, movement, respiration, sensitivity, growth, reproduction, excretion and nutrition, habitat, natural environment, microhabitat, decomposing logs, under rocks, producer, consumer, energy, nutrients

Session 1: Use resources from Kapow lesson 1: Identifying and classifying minibeasts review prior learning

Children revisit: We need to look after our world (animals and plants) and that plants are important in keeping people healthy. Different animals are found in different habitats and the basic needs of animals are air, water, food, shelter. Living things grow and have life cycles and plants need light, water, air, nutrients and space.

Recall the following:

- A habitat is where plants and animals live.
- There are a variety of habitats, including woodland, ocean, rainforest and coastal.
- A habitat provides living things with what they need to grow and survive.
- Living things depend on each other for food and shelter.

Working scientifically LO: To classify a variety of minibeasts.

Collect some leaf litter on a tray and complete the ***Attention Grabber.*** Focus on the following questions:

- **Is the leaf litter a habitat?** (The leaf litter is a small habitat for living things like minibeasts. It is called a microhabitat.)
- **What does the prefix 'micro-' mean?** (Small.)

From the ***Main Event*** children use the minibeast cards to identify different minibeasts.

Play the link: BBC Bitesize - What are minibeasts?

Make sure children can answer the following:

What is the scientific name for minibeasts? (Invertebrates.)

Do the grouping activity in your Floorbook, grouping the minibeasts from their cards into 'Eight or more legs' and 'Less than eight legs'. Discuss other ways the minibeasts could be grouped.

To finish use the *Presentation: Classifying minibeasts* to explore how simple classification keys can be used to identify living things (the children do not need to create their own)

Session 2: Use resources from Kapow lesson 2: Introduction to scientific enquiry
Recap and recall: Display the *Presentation: Sorting animals* and ask pairs to discuss possible criteria for sorting the animals into two groups.
LO: I can give examples of how microhabitats suit the needs of minibeasts.
Watch https://www.youtube.com/watch?v=B4wcFZngFzw microhabitats
Then look at the *Presentation: Microhabitats (in Lesson 3) to prepare for next week's minibeast hunt.*
Children learn a habitat is a natural environment in which a particular animal or plant lives and that a microhabitat is a small, specialized habitat within a larger habitat. Examples of microhabitats are decomposing logs/under stones (centipedes, beetles, woodlice), soil (earthworms, millipedes) and under leaves (ants, woodlice), grass (ladybug, spiders). Plants provide shelter for animals. NB: some minibeasts live in more than one microhabitat.
Ensure the children are able to answer the following questions:

- **What is a microhabitat?** (A small area with conditions different from those of the surrounding habitat.)
- **What kind of minibeasts might you find in a microhabitat?**

Children record in their books an example of a minibeast that they might find in each microhabitat. You could use the *Presentation: Where does it live? (wrapping up section of Lesson 3) to help)*
Vocabulary: habitat, natural environment, microhabitat, decomposing logs, soil, under rocks

Session 3: Use resources from Kapow lesson 3:
Recap and recall: Use the *Presentation: Minibeast memory game*

Show children the *Activity: Minibeast survey* and give them a copy one each or between two clipped to a whiteboard for them to record their findings on the 'Minibeast Hunt'.
Teacher/TA can record for a group if need be.
Inform the pupils they will draw and label the types of minibeasts they find in four microhabitats on the school grounds. Show the pupils a copy of the *Resource: Minibeast identification chart* and take some copies outside to help with identification if needed.

Vocabulary: habitat, natural environment, microhabitat, decomposing logs, soil, under rocks

Session 4: Use resources from Kapow lesson 4: Planning an experiment
Recap & recall: Food chains. Show BBC link & refer to Science skills poster.
Working scientifically LO: To ask questions and plan how to carry out an experiment.
Use the ***Attention Grabber*** to explain how scientists research
Using Using resources from the ***Main Event*** section discuss then write on WB: 'Do woodlice prefer damp or dry conditions?'
Explain how we're going to carry out this experiment next week but first we need to plan it.
Work through the *Presentation: Planning an experiment*, slides 2-8, which show the experiment in order. Use an A3 version of the ordering worksheet: discuss, cut out & order the experiment together for the Floorbook.
The ***Wrapping Up*** section to identify and address any miscoceptions.
Vocabulary: method, test, conditions

Session 5: Use resources from Kapow lesson 5: Woodlice experiment
Ask GM to help find woodlice in advance.
Recap and recall: Display the *Presentation: Woodlouse and crab* and ask pairs to discuss similarities and differences and microhabitats.
Working scientifically LO: To carry out an experiment and record data in a table.
Use the ***Attention Grabber*** to remind the children what we're trying to find out. Show the children the table which we'll complete after the experiment so chn need to be observing throughout the experiment.
Carry out experiment as per the *Presentation: Experiment demonstration* from the the ***Main Event*** section – to be done whole class or in small grps depending on how many woodlice.

Children use the class data and discussion to complete the *Activity: My woodlice experiment* as a class and draw a conclusion.
Children can write up the experiment in next week's lesson.
Vocabulary: comparative/fair test, conclusion, condition, method, results, tally

Session 6:
Recap and recall: Create a class mind map of everything the children have learned about microhabitats in the Floorbook- children can write facts on stickers or post-it notes that can be stuck in.
The aim of this lesson is to write up last week's experiment:

1. Write the investigation question at the top.
2. Complete the results table by copying the tally data from their group table.
3. Write a conclusion (referring to the class conclusion if necessary).

Those who can should do this directly into their books: the worksheet can be used as a scaffold or written or as an adaption if needed- children could just be given the table section of the sheet to stick into their write up.
Complete the Unit Quiz.

Link to career scientist:
https://pstt.org.uk/application/files/6116/2851/6247/Ecological_entomologist_-_Dr_Ben_Woodcock.pdf
Environmentalist, climate scientist, wildlife biologists, conservationists