

year 4

BIA Science Term
by Term Scheme
of Work



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Term by Term Objectives

year 4

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Summer	Living Things and Their Habitats Name That Living Thing!			Living Things and Their Habitats Name That Living Thing!			Living Things and Their Habitats Help Our Habitats!			Living Things and Their Habitats Help Our Habitats!		

(1) Subject to change. Please visit the website or call-in for regular updates.

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Term by Term Objectives

week	1	Term	Summer 1
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year 4

Science Year 4 Living Things and Their Habitats :Help Our Habitats!

A living thing?

Objectives

Become an expert in the 7 characteristics of a living thing. Make a poster and explain life processes to younger children. Sort living things in a variety of ways.

Science Objectives

- i) Recognise that living things can be grouped in a variety of ways.
- ii) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Identify differences, similarities or changes related to simple scientific ideas and processes.

You Will Need

Provided Resources

- Living things poem
- MRS NERG explanation sheet
- MRS NERG PowerPoint

Additional Resources

- Large sheets of paper (some for rough work, some for posters)



week	1	Term	Summer 1
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Science Year 4 Living Things and Their Habitats :Help Our Habitats!

A living thing?

Teaching and Activities

Teaching

- Understand the characteristics of a living thing and to begin to consider that living things can be grouped in a variety of ways.

Activities

- Understand the 7 characteristics of a living thing.
- Explain one of the characteristics in more detail to someone else.
- Discuss which living things they would expect to find in their local environment.
- Consider which living things they would definitely not find locally and why.
- Begin to understand that living things can be grouped in a variety of ways.
- Ask relevant questions about living things and their habitats.

Investigation - sorting, classifying and identifying

- Ask relevant questions about living things and their habitats and begin to group them.

Vocabulary

Alive, dead, never been alive, movement, reproduction, sensitivity, nutrition, excretion, respiration, growth, habitat, local

Term by Term Objectives

week	2	Term	Summer 1
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Science Year 4 Living Things and Their Habitats :Help Our Habitats!

Local living things - what are they?

Objectives

Take a trip within the local environment, observe habitats and record the different living things you find.

Science Objectives

i) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Make systematic and careful observations.
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.



year 4

You Will Need

Provided Resources

- Post-it notes record sheet (1 each)

Additional Resources

- Clipboards (1 each)
- Cameras (as many as possible)
- S- mall plastic bags or petri dishes for samples
- Tweezers
- Magnifying glasses (as many as possible)
- Plastic teaspoons and paintbrushes
- Flipchart



week	2	Term	Summer 1
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Science Year 4 Living Things and Their Habitats :Help Our Habitats!

Local living things - what are they?

Teaching and Activities

Teaching

- Ask questions about the local habitats and to carefully observe and record the living things in the local area.

Activities

- Ask questions about local habitats and consider how to answer them.
- Take a trip within their local environment (the school grounds or further if possible).
- Carefully observe the micro-habitats they can see around them.
- Record different living things they can see (animals and plants).
- Gather a small sample of different leaves and photos/notes of different animals.

Investigation - exploring, sorting, classifying and identifying

- Observe local habitats and record living things they see around them.

Vocabulary

Habitat, living thing, alive, dead, never been alive, plant, animal, insect, local, natural, man-made, observation, record, vertebrate, invertebrate, arachnid, question

Term by Term Objectives

week	3	Term	Spring 1
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year 4

Science year 4 Living Things and Their Habitats :Help Our Habitats!

How are living things classified?

Objectives

Look carefully at features of the living things you found in the local area. Make a branching database to sort and identify the local invertebrates. This can be linked to a mathematics block on statistics and data handling.

Science Objectives

- i) Recognise that living things can be grouped in a variety of ways.
- ii) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Working Scientifically

1. Ask relevant questions and use different types of scientific enquiries to answer.
2. Gather, record, classify and present data to help answer questions.
3. Record findings using simple scientific language, drawings, labelled diagrams and keys.

You Will Need

Provided Resources

- Classification PowerPoint
- Classification sheets
- Plenary PowerPoint

Additional Resources

- Photos of living things from field trip
- Large sheets of paper

Term by Term Objectives

week	3	Term	Spring 1
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Science year 4 Living Things and Their Habitats :Help Our Habitats!



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year 4

How are living things classified?

Teaching and Activities

Teaching

- Observe features of living things and sort them into different groups.

Activities

- Understand why it is useful to classify living things.
- Answer questions about the features of insects, arachnids and plants found in the local area.
- Create a branching database/dichotomous key to sort and identify local invertebrates.
- Understand why it is important to make accurate observations when describing features of living things.

Investigation - sorting, classifying and identifying

- Create a branching database to sort and identify local invertebrates.

Vocabulary

Classify, sort, group, similar, different, branching database, identify, variety, question, explore, key

Term by Term Objectives



year 4

week	4	Term	Spring 1
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Science year 4 Living Things and Their Habitats :Help Our Habitats!

Closer inspection

Objectives

Use a branching database/dichotomous classification key. Make accurate observational drawings of an invertebrate found in the local environment.

Science Objectives

- i) Recognise that living things can be grouped in a variety of ways.
- ii) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data logger.

You Will Need

Provided Resources

- Drawing PowerPoint
- Images of British invertebrates

Additional Resources

- Drawing paper and pencils
- Rulers
- Magnifying glasses
- Watercolour paints
- Sticky tack



week	4	Term	Spring 1
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Science year 4 Living Things and Their Habitats :Help Our Habitats!

Closer inspection

Teaching and Activities

Teaching

- Know that scientists are able to classify living things by closely observing them.

Activities

- Use a branching database/dichotomous classification key.
- Look at the photographs by artist Levon Biss.
- Discuss the photographs and consider whether or not they like them and why.
- Make careful and accurate observational drawings of an invertebrate found in the local environment.
- Make a larger scale drawing of the insect to show the details more clearly.

Investigation - classifying and identifying

- Make close observational drawings and large-scale drawings. Understand that tiny details of features help with classification.

Vocabulary

Observation, details, identify, classify, invertebrate

week	5	Term	Spring 1
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Science year 4 Living Things and Their Habitats :Help Our Habitats!

Enormous insects

Objectives

Make a group large-scale drawing of an insect. Understand that accurate knowledge of the features of living things is vital to classification. Test your knowledge of classification by playing a game.

Science Objectives

- i) Recognise that living things can be grouped in a variety of ways.
- ii) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Working Scientifically

1. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.

You Will Need

Provided Resources

- Images of British invertebrates (same sheet as previous session)
- Liquorice Allsorts dichotomous key resource
- How to expand an image sheet

Additional Resources

- A2 drawing paper
- Drawing pencils
- Colouring pencils
- Collage materials

Term by Term Objectives



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year 4

week	5	Term	Spring 1
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Science year 4 Living Things and Their Habitats :Help Our Habitats!

Enormous insects

Teaching and Activities

Teaching

- Notice the tiny details that will help scientists to further classify living things and to record these details in a careful drawing of insects.

Activities

- Collaborate with others to contribute to a large-scale drawing of an insect.
- Understand that it is the tiny details that will help scientists further classify living things.
- Complete their independent drawing.
- Test their knowledge of the classification of living things by playing a game.

Vocabulary

Observation, classify, detail

Term by Term Objectives



year 4

week

6

Term

Spring 1

Science year 4 Living Things and Their Habitats :Help Our Habitats!

I'm thinking of a living thing...

Objectives

Write a branching database for a variety of living things. Test your classification key by playing 'Guess Who?' Demonstrate your learning to younger children.

Science Objectives

- i) Recognise that living things can be grouped in a variety of ways.
- ii) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.

Working Scientifically

1. Use straightforward scientific evidence to answer questions or to support findings.

You Will Need

Provided Resources '

- Guess Who PowerPoint
- Guess Who resource sheet

Term by Term Objectives



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year 4

week

6

Term

Spring 1

Science year 4 Living Things and Their Habitats :Help Our Habitats!

It's electric!

Teaching and Activities

Teaching

- Create and use a classification key to name a variety of living things in the wider environment.

Activities

- Write a branching database for a variety of living things from the wider world.
- Test their classification key by playing 'Guess Who?'
- Demonstrate an understanding of their learning by explaining it to others.

Investigation - researching and analysing secondary sources, classifying and identifying

- Write a branching database for a variety of living things in the wider environment.

Vocabulary

Question, classify, group, teach

Term by Term Objectives



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year 4

week

7

Term

Spring 2

Science year 4 Help Our Habitats!

Our environment

Objectives

How has our local environment changed? Consider aspects of your school grounds that have changed and have a class debate about a hypothetical scenario that would bring about environmental change.

Science Objectives

i) How has our local environment changed? Consider aspects of your school grounds that have changed and have a class debate about a hypothetical scenario that would bring about environmental change.

Working Scientifically

- How has our local environment changed? Consider aspects of your school grounds that have changed and have a class debate about a hypothetical scenario that would bring about environmental change.

You Will Need

Provided Resources

-Cameras to photograph the outside area, letter from school governors, good/bad evaluation sheets, teachers' notes.

Additional Resources

- Cameras to photograph the outside area, letter from school governors, good/bad evaluation sheets, teachers' notes.

Term by Term Objectives



year 4

week	7	Term	Spring 2
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Science year 4 Help Our Habitats!

Our environment

Teaching and Activities

Teaching

- Begin to consider how the local environment has changed and why these changes may have happened.

Activities

- Take a walk around their school environment.
- Consider how it might have changed.
- Begin to think about why the changes have happened.
- Take part in a class debate about a proposed change to an area in the school environment.

Investigation - exploring

Take a walk around their school environment and consider how and why changes have happened.

Vocabulary

Environment, change, living thing, danger

Term by Term Objectives



year 4

week

8

Term

Spring 2

Science year 4 Help Our Habitats!

Other changes

Objectives

Who made these changes? Consider natural and man-made changes to the environment. How living things adapt to these changes? Can you design a living thing that could survive all these natural environment changes?

Science Objectives

i) Recognise that environments can change and that this can sometimes pose dangers to living things.

Working Scientifically

- Ask relevant questions and use different types of scientific enquiries to answer them.

You Will Need

Provided Resources

- Independent task sheet
- Adaptation PowerPoint

Term by Term Objectives



year 4

week

8

Term

Spring 2

Science year 4 Help Our Habitats!

Other changes

Teaching and Activities

Teaching

- Consider some of the natural changes that could happen to an environment and to understand what some living things can do to survive such changes.

Activities

- Think about regular changes such as tides and seasons.
- Consider if the changes are natural or man-made.
- Design a living thing that could withstand a huge range of changes to their environment.
- Begin to think about some big changes such as climate change.

Investigation - exploring

- Consider natural and manmade changes to the environment.

Vocabulary

Change, adapt, danger, threat

week	9	Term	Spring 2
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Science year 4 Help Our Habitats!

Climate change

Objectives

What is climate change? Conduct an experiment to investigate how the greenhouse effect works. Use the results to discuss how people are causing climate change.

Science Objectives

i) Recognise that environments can change and that this can sometimes pose dangers to living things.

Working Scientifically

- Set up simple practical enquiries and comparative and fair tests.
- Make systematic and careful observations and, where appropriate, take accurate measurements using thermometers.
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

You Will Need

Provided Resources

- Climate change PowerPoint

Additional Resources

- Thermometers
- Glass jars
- Graph paper



week	9	Term	Spring 2
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Science year 4 Help Our Habitats!

Climate change

Teaching and Activities

Teaching

- Use a simple enquiry to demonstrate the effect of a greenhouse and relate this to climate change.

Activities

- Look in more detail at climate change.
- Explain what they already know about it.
- Conduct an experiment that highlights what the 'greenhouse effect' is.
- Record temperatures over time on a table and a graph.

Investigation - exploring, analysing

- Look in more detail at climate change.

Vocabulary

Climate, change, danger, greenhouse, thermometer, test, carbon dioxide, results, graph, table

Term by Term Objectives



year 4

week

10

Term

Spring 2

Science year 4 Help Our Habitats!

Impact of change

Objectives

What are some of the impacts to living things if an environment changes?

Become an expert on one particular reason for environmental change.

Create an information poster about what you have learnt and what people can do to help.

Science Objectives

i) Recognise that environments can change and that this can sometimes pose dangers to living things.

Working Scientifically

-Identify differences, similarities or changes related to simple scientific ideas and processes.

You Will Need

Provided Resources

- Impact PowerPoint
- Notes worksheet

Additional Resources

- Poster paper
- Cress mound and mud mound (see Teachers' Notes)
- Watering can
- Small plastic houses (monopoly)

Term by Term Objectives



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year 4

week

10

Term

Spring 2

Science year 4 Help Our Habitats!

Impact of change

Teaching and Activities

Teaching

-Recognise that changes to an environment can be dangerous to living things and to begin to understand what can be done to reverse some of the changes.

Activities

- Explore what the impact of some environmental changes are, both positive and negative.
- Learn about bumblebees and what the impact of their declining numbers are.
- Look at the potential impact of deforestation.
- Understand what they can do to help minimise the impact of climate change.
- Understand some of the changes that have caused the number of hedgehogs to decline.

Investigation - analysing

-Look at some information on the impacts to living things if an environment changes.

Vocabulary

Impact, change, positive, negative, danger, living thing

Term by Term Objectives



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week	11	Term	Spring 2
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Science year 4 Help Our Habitats!

Help our habitat

Teaching and Activities

Teaching

- Investigate sound-proofing materials by planning and conducting a fair test, considering all the variables and how to record the results.

Activities

- Consider reasons needed to reduce sounds and reasons for not reducing sounds.
- Work in a group to plan an investigation that will find out which material will best reduce sound.
- With help, consider the different variables of their test and plan how to ensure their investigation is fair.
- Record the results of the investigation and use the results to draw a conclusion.

Investigation - pattern seeking, fair testing, exploring over time, problem solving

- Plan and conduct an investigation into which material best reduces the sounds we hear.

Vocabulary

Investigation, fair-test, factor (variable), prediction, results, resources, planning, muffle

Term by Term Objectives



year 4

week

12

Term

Spring 2

Science year 4 Help Our Habitats!

The rock star challenge

Objectives

Present your ear defenders design, and explain your findings.

Science Objectives

- i) Identify how sounds are made, associating some of them with something vibrating.
- ii) Recognise that vibrations from sounds travel through a medium to the ear.
- iii) Find patterns between the pitch of a sound and features of the object that produced it.
- iv) Find patterns between the volume of a sound and the strength of the vibrations that produced it.
- v) Recognise that sounds get fainter as the distance from the sound source increases.

Working Scientifically

- Use straightforward scientific evidence to answer questions or to support findings.
- Gather, record, classify and present data in a variety of ways to help answer questions.

You Will Need

Provided Resources

- iAssessment sheet

Additional Resources

- Musician masks (1 for each adult)

Term by Term Objectives



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year 4

week

12

Term

Spring 2

Science year 4 Help Our Habitats!

The rock star challenge

Teaching and Activities

Teaching

- Answer questions about the results of the investigation into sound reduction and demonstrate an understanding of sound, including how it is made and how it travels.

Activities

- Describe product to others.
Demonstrate understanding of sound by explaining why their product is the best.
Provide evidence to show that the results of their product testing came from a fair test.
Present findings to a panel of judges.
Evaluate product against the original criteria.

Investigation - problem solving

- Present ear defenders design and explain findings.

Vocabulary

Fair-test, evidence, results, conclusion, evaluate