

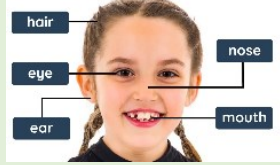







Holmesdale
Yearly Knowledge and Skills Progression
Subject: Science We follow the KAPOW Curriculum for Science
Year group: 1

We have identified 3 BIG IDEAS that run through our science curriculum. These are evident threads that run through the year groups –
1. Cause and effect. 2. Change. 3. Structure and functions. These are highlighted throughout the maps.

<p>Forces and Space: Seasonal Changes</p>  <p>Exploring how seasonal changes affect trees, weather patterns and daylight hours.</p>	<p>Materials: Everyday Materials</p>  <p>Comparing and grouping materials based on their properties.</p>	<p>Animals: Sensitive Bodies</p>  <p>Identifying and naming body parts and conducting practical activities with the senses to spot patterns and answer questions.</p>	<p>Animals: Comparing Animals</p>  <p>Comparing and grouping animals based on similarities and differences in their characteristics, physical features and diets.</p>	<p>Plants: Introduction to Plants</p>  <p>Identifying and naming a variety of plants and investigating if beans need water for growth.</p>	<p>Making Connections: Investigating Science Through Stories</p>  <p>Consolidating knowledge of plants and animals through picture books and practical investigations.</p>
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Autumn Term 1 – Everyday Materials

Knowledge:

- To identify everyday materials.
- To recognise the difference between objects and materials.
- To describe the properties of materials.
- To group materials based on their properties (absorbency).
- To group materials based on their properties (waterproofness).

To group materials based on their properties (toughness).

Skills:

- To sort objects into groups based on the materials they are made from.
- To make observations and record data.
- To plan a test and suggest what might happen.
- To answer questions based on results.

Key Vocabulary:

fabric	property
glass	absorbent
group	data
material	group
metal	opaque
object	property
plastic	transparent
rock	waterproof
wood	tough

End points:

By the end of the unit, year 1 children to know:

- Objects are items or things.
- A material is what an object is made from.
- A variety of everyday materials, including wood, plastic, glass, metal, water and rock.
- Property refers to how a material can be described.
- Materials can be grouped based on their physical properties.

By the end of the unit, year 1 children to have skills in:

- Posing questions: Responding to suggestions on how to answer questions.
- Planning: Beginning to recognise whether a planned test is fair. With support, deciding if suggested observations are suitable.
- Predicting: Suggesting what might happen, often justifying with personal experience.
- Observing (qualitative data): Using their senses to describe, in simple terms, what they notice or what has changed.
- Recording (tables): Using a prepared table to record results including simple observations.
- Grouping and classifying: Grouping based on visible characteristics.

- Analysing and drawing conclusions: Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.

How can we enrich this at Holmesdale?

Toy workshop - Mrs Hill
 Outdoor learning
 Woodland
 Investigations

Autumn Term 2 – Seasonal Changes

Knowledge:

- To identify how the weather changes across the four seasons.
- To identify events and activities that take place in different seasons.
- To recognise how trees change across the four seasons.
- To recognise that daylight hours change across the four seasons
- To observe changes across the four seasons.
- To plan and carry out a weather report

Skills:

- To record data in a pictogram.
- To gather and record data about how seasons change over time.

Key Vocabulary:

autumn	Diwali
season	Easter
spring	Lunar New Year
summer	deciduous tree
symbol	evergreen tree
weather	temperature
winter	conclusion

sun
fog
rain
snow
thunder and lightning
cloudy
windy
hail

data
pictogram
record
sunrise
sunset
predict
temperature
thermometer

End points:

By the end of the unit, year 1 children to know:

- The name and order of the four seasons: spring, summer, autumn and winter.
- That it is unsafe to look directly at the Sun.
- The weather associated with the four seasons and how it changes (in the UK).
- That day length varies across the four seasons, with fewer daylight hours in the winter and more in the summer.

By the end of the unit, year 1 children to have skills in:

- Posing questions: Exploring the world around them and raising their own simple questions.
- Predicting: Suggesting what might happen, often justifying with personal experience.
- Observing (qualitative data): Using their senses to describe, in simple terms, what they notice or what has changed.
- Researching: Gathering specific information from one simplified, specified source.
- Recording (tables): Using a prepared table to record tally frequency.
- Graphing: Representing data using pictograms.
- Analysing and drawing conclusions: Using their results to answer simple questions.

How can we enrich this at Holmesdale?

Outdoor learning
Woodland

Spring Term 1 – Sensitive Bodies

Knowledge:

To name parts of the human body.

To name the body parts used for each sense.

To identify the body parts used for the sense of taste and touch.

To identify the body parts used for the sense of smell and sight.

To identify the body part used for the sense of hearing.

To recognise how the senses are used in everyday life.

Skills:

To sort body parts into groups.

To spot patterns in data.

To use the senses to make observations.

To recognise that scientists are always making new discoveries. (Science in Action).

To investigate how sound changes as you move further away.

To recognise the importance of the senses in certain jobs (Science in Action).

Key Vocabulary:

body	blind
compare	direction
group	obstacle
data	research
hearing	sight
senses	smell
sight	distance
smell	hearing
taste	investigation
touch	loud
sweet	pattern
sour	quiet
bitter	volume
salty	action
taste	feeling
touch	sense

sensitive

End points:

By the end of the unit, year 1 children to know:

- The key parts of the human body (including head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth and teeth).
- The five main senses: sight, smell, hearing, taste and touch.
- The skin is used for touch, the tongue is used for taste, the nose is used for smell, the eyes are used for sight and the ears are used for hearing.

By the end of the unit, year 1 children to have skills in:

- Posing questions: Recognising there are different types of enquiry (ways to answer a question).
- Observing (qualitative data): Using their senses to describe, in simple terms, what they notice or what has changed.
- Measuring (quantitative data): Using non-standard units to measure and compare.
- Recording (diagrams): Drawing and labelling simple diagrams.
- Recording (tables): Using a prepared table to record results including numbers and simple observations.
- Grouping and classifying: Grouping based on visible characteristics.
- Analysing and drawing conclusions: Using their results to answer simple questions.

How can we enrich this at Holmesdale?

Outdoor learning

Woodland

Feeling Good Week

Spring Term 2 – Comparing Animals

Knowledge:

To name and describe the physical features of a range of animals.

To sort animals into groups based on their similarities and differences.

To identify characteristics specific to mammals, birds, reptiles, amphibians and fish.

To recall the diets of carnivores, herbivores and omnivores.

Skills:

To research using non-fiction texts.

To gather and record data to help in answering questions.

To know about famous scientists throughout history (Science in Action).

Key Vocabulary:

amphibian	carnivore
bird	herbivore
fish	hunt
mammal	omnivore
reptile	block chart
group	data
body	pet
compare	record
differences	tally
feature	observe
similarities	research
diet	scientist

End points:

By the end of the unit, year 1 children to know:

- A variety of common animals (including fish, amphibians, reptiles, birds and mammals).
- The main body parts of common animals (arms, legs, wings, tails, fins, head, trunk, horns, tusks and shell).
- A carnivore is an animal that eats other animals and to give some examples.
- A herbivore is an animal that eats only plants and to give some examples.
- An omnivore is an animal that eats both animals and plants and to give some examples.

By the end of the unit, year 1 children to have skills in:

- Posing questions: Recognising there are different types of enquiry (ways to answer a question).
- Planning: Deciding if suggested observations are suitable, with support.
- Observing (qualitative data): Using their senses to describe, in simple terms, what they notice or what has changed.
- Researching: Gathering specific information from one simplified, specified source.
- Recording (diagrams): Drawing and labelling simple diagrams.
- Grouping and classifying: Grouping based on visible characteristics.
- Graphing: Representing data using pictograms and block charts.

- Analysing and drawing conclusions: Using their results to answer simple questions.

How can we enrich this at Holmesdale?

Outdoor learning
Woodland
Science Week
Cross curricular links – PSHE

Summer Term 1 – Introduction to Plants

Knowledge:

- To identify plants and their features.
- To recall some of the roles that flowering plant parts have.
- To name some trees and their parts.
- To identify similarities and differences between deciduous and evergreen leaves.
- To recall that seeds and bulbs come from plants.
- To recognise that seeds need water for growth.

Skills:

- To plan an investigation.
- To draw and label a diagram.
- To sort flowers into groups.
- To measure and compare leaves.
- To recognise that observations do not always match predictions.
- To use observations to find answers to questions.

Key Vocabulary:

data	stem
feature	garden plants
flower	grouping
growth	identification
investigation	wild plants

leaf
observe
plant
roots
seed
shoot
stem
trunk
diagram
leaf
observe

blossom
branch
deciduous
evergreen
measure
bulb
prediction
seed
edible
fruit
research

End points:

By the end of the unit, year 1 children to know:

- A variety of common plants and how they differ.
- That deciduous trees lose their leaves seasonally but evergreen trees do not.
- The basic structure, including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches and stem, of a variety of common plants, including flowering plants and trees.
- To begin to understand how plants grow and change over time.

By the end of the unit, year 1 children to have skills in:

- Posing questions: Exploring the world around them and raising their own simple questions. Recognising there are different types of enquiry (ways to answer a question). Responding to suggestions on how to answer questions.
- Planning: With support, deciding if suggested observations are suitable. Ordering a simple method.
- Predicting: Suggesting what might happen, often justifying with personal experience.
- Observing (qualitative data): Using their senses to describe, in simple terms, what they notice or what has changed.
- Measuring (quantitative data): Using non-standard units to measure and compare.
- Researching: Gathering specific information from one simplified, specified source.
- Recording (diagrams): Drawing and labelling simple diagrams.
- Recording (tables): Using a prepared table to record results including: numbers; simple observations.
- Grouping and classifying: Grouping based on visible characteristics.
- Analysing and drawing conclusion: Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.

How can we enrich this at Holmesdale?

- Outdoor learning
- Woodland
- Gardening (Mrs Hill)

Summer Term 2 – Making Connections

Knowledge:

- To observe changes across the seasons.
- To describe and compare the features of animals.
- To identify differences in animal features.
- To describe the properties of everyday materials.
- To identify animals that are carnivores, herbivores and omnivores.

Skills:

- To spot patterns in data.
- To carry out research to find specific information.
- To use a ruler to measure.
- To plan how to carry out a test.

Key Vocabulary:

data	measure
life cycle	mammal
measure	reptile
pattern	similarities
season	material
trunk	natural
weather	object
bird	predict
compare	property
difference	test
feature	waterproof

mammal
research
similarity
amphibian
differences
fish

carnivore
diet
group
herbivore
hunt
omnivore

End points:

By the end of the unit, year 1 children to know:

- A variety of common plants and how they differ.
- That deciduous trees lose their leaves seasonally but evergreen trees do not.
- The basic structure, including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches and stem, of a variety of common plants, including flowering plants and trees.
- To begin to understand how plants grow and change over time.

By the end of the unit, year 1 children to have skills in:

- Posing questions: Exploring the world around them and raising their own simple questions. Recognising there are different types of enquiry (ways to answer a question). Responding to suggestions on how to answer questions.
- Planning: Beginning to recognise whether a planned test is fair. With support, deciding if suggested observations are suitable.
- Predicting: Suggesting what might happen, often justifying with personal experience.
- Observing (qualitative data): Using their senses to describe, in simple terms, what they notice or what has changed.
- Measuring (quantitative data): Beginning to use standard units and read simple scales to measure and compare. Beginning to use simple measuring equipment to make approximate measurements.
- Researching: Gathering specific information from one simplified, specified source.
- Recording (tables): Using a prepared table to record results including:
 - numbers; simple observations.
- Grouping and classifying: Grouping based on visible characteristics.
- Analysing and drawing conclusions: Using their results to answer simple questions. Beginning to recognise when results or observations do not match their predictions.

How can we enrich this at Holmesdale?

Outdoor learning
Woodland
Gardening (Mrs Hill)

Assessment

YEAR 1

1. Knowledge: Teachers RAG-rate every child after every unit/half termly (GD, M, B) on spreadsheet
2. Scientific Enquiry: Teachers RAG-rate every child after every unit/half termly (GD, M, B) – being particularly mindful about the enquiry foci for the unit - on the same excel spreadsheet.

Overall Summative Judgement to be recorded on Arbor at the end of the year: GD (greater depth), M (meeting), or B below meeting).

Diversity and Cultural Capital

Caterpillars.
Different toys from the past.
Different celebrations through the seasons e.g. Christmas, Hannuka.
Different pets within class and around world.

Barriers & Scaffolds

Possible barriers:

Limited prior exposure to scientific vocabulary.
Difficulty understanding abstract terms (e.g. living vs non-living, habitat, suitable material).
EAL learners may not have home language equivalents for scientific words.
Confusion between everyday vs scientific meanings (e.g., volume, property, force).
Difficulty linking new knowledge with prior learning.
Overwhelm when too many steps are introduced at once.
Challenges with multi-stage tasks (e.g., planning a fair test).

Difficulty using rulers, syringes, measuring spoons, pipettes.
Labelling diagrams with accuracy.
Writing speed impeding independent recording.
Losing track of multi-step inquiry tasks.
Forgetting instructions for observation over time.
Struggling with transitions during hands-on learning.
Struggling to generate or understand questions.
Finding it hard to predict using prior knowledge.
Difficulty measuring accurately or reading scales.
Challenges interpreting and comparing results.
Difficulty retaining names, features, or comparisons.
Forgetting steps in germination or lifecycles.
Confusion between similar scientific terms (absorbent/ waterproof).
Sensory overload during investigations (noise, movement).
Difficulty with unexpected outcomes.
Accessing outdoor environments (mobility, sensory sensitivity).

Possible scaffolds:

Pre-teach key vocabulary using real objects, images, and actions.
Use Now/Next and dual-coded picture cards.
Provide sentence stems, e.g.: “I observe that...” “This material is suitable because...” “The plant needs ___ to grow.”
Use word banks on tables during investigations.
Repeat vocabulary through songs, stories, drama, actions and chants.
Use small-step modelling (“I do → we do → you do”).
Revisit EYFS learning explicitly before year 1 learning (e.g. living vs non-living → habitats).
Provide worked examples: simple diagrams of food chains, labelled plant diagrams.
Reduce cognitive load by providing structured templates: e.g. provide a simple table.
Provide alternatives to writing: stampers, sorting mats, photos with verbal commentary, ‘cutting & sticking’.
Use digital tools (tablets to take photos and annotate).
Give pre-drawn diagrams for children to label.
Use thick pencils, chunky tweezers, child-safe droppers.
Small group work, adult led if necessary.
Encourage paired roles: one child measures, the other records.
Provide visual task sequences (1: Observe → 2: Test → 3: Record → 4: Conclude).
Use timers, sand timers, or traffic-light systems during investigations.

Give clear and repeated modelling of each stage.
Assign roles: Scientist, Recorder, Equipment Manager, Reporter.
Offer chunked tasks, stopping between each stage to review outcomes.
Provide question prompts: "What will happen if we...?" "How could we test...?"
Give prediction sentence frames with picture cues.
Offer guided measuring: colour-coded rulers, standard units strips.
Use structured comparison tables (Sorting into "changed / didn't change", etc.).
Use guided analysis questions, e.g.: "What do you notice?" "Did anything surprise you?" "How do your results compare with your prediction?"
Use retrieval routines: 2-minute quizzes, picture recalls, pair-share.
Create Knowledge Organisers with key facts and vocabulary.
Spiral revisit questions: "Last year we learned... this year we are adding..."
Use cumulative comparisons (e.g., "What's the same / What's different?").
Offer low-stimulus versions of activities (quiet zone table, headphones).
Provide predictable routines, visual cues for each stage.
Offer adapted outdoor tasks (e.g., tray-based microhabitats).
Use tactile and multi-sensory resources (natural objects, textured materials).