Science	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	**Animals including Humans**	**Materials**	**Rocks**	**Digestive System**	**Reversible and Irreversible Changes**	**Evolution and Inheritance**
Enquiry Question	**Am I an Animal?**	**What would Traction Man use to build our school?**	**What is beneath your feet?**	**What happens to the food we eat?**	**Can materials change?**	**Who am I?**
Autumn 2	*Seasonal Changes*		*Forces and Magnets*	*Habitats*	**Earth and Space**	Living Things and their Habitats
Enquiry Question				*Who eats who?*	**Is there anybody out there?**	
Spring 1	**Plants**	Plants	*Animals including Humans*	**Sound**		**Circulatory System**
Enquiry Question	**Are all leaves the same?**	How does your garden grow?		**How do we hear?**		Why is the heart the most important muscle we own?
Spring 2		***Animals including Humans***	**Plants**	*Matter*	**Forces**	**Light**
Enquiry Question		***How can I grow up to be healthy?***	**Do plants have legs?**	*Where have all the puddles gone?*	**Can you feel a force?**	**How do we see things?**
Summer 1						Electricity
Enquiry Question						How bright is your bulb?
Summer 2	**Materials**	**Habitats**	**Light**	**Electricity**	**Animals including Humans Life Cycles**	
Enquiry Question	**What does Beegu think of life on planet Earth?**	**Do living things depend on each other?**	**Do shadows change?**	**Could we cope without electricity?**		

SCIENCE Nursery	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS QUESTION KEY KNOWLEDGE	Throughout EYFS focus is to be placed on the statutory framework for EYFS and the ELG. This includes: physical development, communication and language and understanding of the world. **Communication and language**: Understanding: children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events. **Physical development:** Health and self-care: children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently **Understanding the world**: People and communities: children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions. The world: children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. Technology: children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes					
TEXT						

Questioning and Enquiring	**Show curiosity about objects, events and people Playing & Exploring Questions why things happen Speaking: 30-50 months Engage in open-ended activity Playing & Exploring** **Take a risk, engage in new experiences and learn by trial and error Playing & Exploring**
Investigating, recording and reporting findings, drawing conclusions.	Find ways to solve problems / find new ways to do things / test their ideas Creating & Thinking Critically Develop ideas of grouping, sequences, cause and effect Creating &Thinking Critically Know about similarities and differences in relation to places, objects, materials and living things ELG: The World Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world The World: 30-50 months Closely observes what animals, people and vehicles do The World 8-20 months Use senses to explore the world around them Playing & Exploring
Observing, measuring and pattern-seeking.	Make links and notice patterns in their experience Creating & Thinking Critically Choose the resources they need for their chosen activities ELG: Self Confidence & Self Awareness Handle equipment and tools effectively ELG: Moving & Handling Create simple representations of events, people and objects Being Imaginative: 40-60+ months
Identifying, grouping and classifying.	Answer how and why questions about their experiences ELG: Understanding Make observations of animals and plants and explain why some things occur, and talk about changes ELG: The World Develop their own narratives and explanations by connecting ideas or events ELG: Speaking Builds up vocabulary that reflects the breadth of their experience Understanding: 30-50 months

SCIENCE RECEPTION	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS QUESTION KEY KNOWLEDGE	Throughout EYFS focus is to be placed on the statutory framework for EYFS and the ELG. This includes: physical development, communication and language and understanding of the world. **Communication and language**: Understanding: children follow instructions involving several ideas or actions. They answer 'how' and 'why' questions about their experiences and in response to stories or events. **Physical development:** Health and self-care: children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently **Understanding the world**: People and communities: children talk about past and present events in their own lives and in the lives of family members. They know that other children don't always enjoy the same things, and are sensitive to this. They know about similarities and differences between themselves and others, and among families, communities and traditions. The world: children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes. Technology: children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes					
TEXT						

Questioning and Enquiring	**Show curiosity about objects, events and people Playing & Exploring Questions why things happen Speaking: 30-50 months Engage in open-ended activity Playing & Exploring** **Take a risk, engage in new experiences and learn by trial and error Playing & Exploring**
Investigating, recording and reporting findings, drawing conclusions.	Find ways to solve problems / find new ways to do things / test their ideas Creating & Thinking Critically Develop ideas of grouping, sequences, cause and effect Creating &Thinking Critically Know about similarities and differences in relation to places, objects, materials and living things ELG: The World Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world The World: 30-50 months Closely observes what animals, people and vehicles do The World 8-20 months Use senses to explore the world around them Playing & Exploring.
Observing, measuring and pattern-seeking.	Make links and notice patterns in their experience Creating & Thinking Critically Choose the resources they need for their chosen activities ELG: Self Confidence & Self Awareness Handle equipment and tools effectively ELG: Moving & Handling Create simple representations of events, people and objects Being Imaginative: 40-60+ months
Identifying, grouping and classifying.	Answer how and why questions about their experiences ELG: Understanding Make observations of animals and plants and explain why some things occur, and talk about changes ELG: The World Develop their own narratives and explanations by connecting ideas or events ELG: Speaking Builds up vocabulary that reflects the breadth of their experience Understanding: 30-50 months

SCIENCE Y1	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS	ANIMALS INCLUDING HUMANS		PLANTS		MATERIALS	***SEASONAL CHANGES (to be taught throughout the year)**
QUESTION	Am I an animal?		Are all leaves the same?		What is the best material?	
KEY KNOWLEDGE	• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals • identify and name a variety of common animals that are carnivores, herbivores and omnivores • describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets) • identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense		• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees		•distinguish between an object and the material from which it is made •identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock •describe the simple physical properties of a variety of everyday materials •compare and group together a variety of everyday materials on the basis of their simple physical properties	• **observe changes across the four seasons** • **observe and describe weather associated with the seasons and how day length varies**
TEXT	Bog Baby		Jack and the baked bean stalk		Beegu	

Questioning and Enquiring	**Ask simple questions** about the world around them stimulated by their exploration of the world. Use what they see and their own ideas to offer answers to questions. Use simple secondary resources to find answers.
Investigating, recording and reporting findings, drawing conclusions. (comparative and fair testing)	**Perform simple tests** to explore a question or idea suggested to them, and discuss ideas of how to find things out. **Present evidence they have collected** in simple tables, charts or diagrams **to help in answering questions. Present Findings** by drawing or photographing evidence and label with support. Make suggestions to connect what has been observed and begin to recognise links between observations and answers to questions.
Observing, measuring and pattern-seeking.	Make measurements using non-standard units of measure, using equipment with whole number scales. **Observe** objects, living things, events and the world around them **closely, using** their senses and **simple equipment**. Recognise links and patterns between observations and answers to questions.
Identifying, grouping and classifying.	**Recognise** basic features, similarities and differences of objects or living things and using this to sort and group them based on simple features eg: colour. Sort and group objects or living things in different ways by observing, comparing and describing.

SCIENCE Y2	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS	Use of everyday materials		PLANTS	Animals including humans		Living things and their habitats
QUESTION	How useful are materials?		How does your garden grow?	How will I grow up healthy?		Do living things depend on each other?
KEY KNOWLEDGE	•identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses •find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching		•observe and describe how seeds and bulbs grow into mature plants •find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	•notice that animals, including humans, have offspring which grow into adults •find out about and describe the basic needs of animals, including humans, for survival (water, food and air) •describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene		•explore and compare the differences between things that are living, dead, and things that have never been alive •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 •describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food
TEXT	Traction man		Not a driver.	Handa's surprise		Wild

Questioning and Enquiring	**Ask simple questions** about their experiences and observations of objects, living things or events, use these observations to suggest ways to discover an answer or solve a problem, **recognising that some questions can be answered in a variety of ways.** Find information using secondary sources.
Investigating, recording and reporting findings, drawing conclusions.	Identify things to measure or observe that are relevant to the question or ideas they are investigating **using a simple test** Suggest a practical way of how to find things out, recognising that some ways of investigating a question or idea are more appropriate than others. **Gather and record data** in appropriate ways with increasing independence **to help in answering questions** by drawing tables and bar charts, including labels. **Report on and record findings** as drawings, photographs, labelled diagrams, orally, as displays, or in simple prepared tables or charts using appropriate simple scientific. Recognise when results meet predictions or not Ask a new question based on observations or own experience, which may be testable
Observing, measuring and pattern-seeking.	Make measurements using non-standard and standard units of measure. **Use equipment** that is provided for observation and measuring **correctly. Observe closely**, using simple equipment. Use observations and ideas to suggest answers to questions. Observe changes over time and with support begin to notice patterns and relationships.
Identifying, grouping and classifying.	Make comparisons Identify differences, similarities or changes within things to do with science between basic features or components of objects, living things or events to support **identification and/or classification** **Sort and group** objects, living things or events on the basis of their observations by making drawings of things in the real world and explain why

SCIENCE Y3	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS	ROCKS	**FORCES AND MAGNETS**	PLANTS	**ANIMALS INCLUDING HUMANS**		LIGHT
QUESTION	What is beneath my feet?		Do plants have legs?	Is chocolate good for us?		Do shadows change?
KEY KNOWLEDGE	•compare and group together different kinds of rocks on the basis of their appearance and simple physical properties •describe in simple terms how fossils are formed when things that have lived are trapped within rock •recognise that soils are made from rocks and organic matter	•compare how things move on different surfaces •notice that some forces need contact between 2 objects, but magnetic forces can act at a distance •observe how magnets attract or repel each other and attract some materials and not others •compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials •describe magnets as having 2 poles •predict whether 2 magnets will attract or repel each other, depending on which poles are facing	•identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers •explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant •investigate the way in which water is transported within plants •explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal	•identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat •identify that humans and some other animals have skeletons and muscles for support, protection and movement		•recognise that they need light in order to see things and that dark is the absence of light •notice that light is reflected from surfaces •recognise that light from the sun can be dangerous and that there are ways to protect their eyes •recognise that shadows are formed when the light from a light source is blocked by a solid object •find patterns in the way that the size of shadows change
TEXT	The pebble in my pocket.	The iron man - not a driver	The boy who grew dragons	Funny bones		Orion and the dark

Questioning and Enquiring	**Suggest relevant questions** that can be explored, investigated and tested further using different types of science enquiry, identifying which questions can be tested and which can't in a classroom environment. Begin to decide when and how to use secondary sources and carry out own research.
Investigating, recording and reporting findings, drawing conclusions.	**Plan and carry out simple practical enquiries, comparative and fair tests** relevant to the questions or ideas they are investigating, identifying that at least one variable that needs to be kept the same when conducting a fair test and begin to recognise when a test is not fair, suggesting improvements. **Gather and present evidence and data using simple scientific language and vocabulary.** Make independent choices to present as writing, **drawing, labelled diagrams**, display, through ICT, **keys**, **bar charts or tables to help in answering questions. Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions** using notes, simple tables and standard units to help decide how to record and analyse data. **Use results** of enquiries to consider whether they meet predictions and explain why. With help **use results,** observations or own experience **to prompt new questions and predictions for a further test Use straightforward scientific evidence to answer questions**, support findings and make predictions. Say whether what happened was what they expected, acknowledging any unexpected outcomes.
Observing, measuring and pattern-seeking.	**Take simple, accurate measurements and/or careful observations using standard units** (including time in minutes and seconds) relevant to questions or ideas under investigation. Begin to make systematic, careful observations and look for naturally occurring patterns and relationships. Learn to **use a range of equipment** for measuring and observing **including thermometers and data loggers.** Begin to draw simple conclusions by looking for changes, patterns, similarities and differences.
Identifying, grouping and classifying.	**Identify and group** objects, living things, processes or events by linking them to the characteristics of known objects, living things, processes or events. Begin to identify similarities, differences or changes related to simple scientific ideas and processes. Discuss criteria for sorting, grouping and classifying and use simple keys.

SCIENCE Y4	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS	ANIMALS INCLUDING HUMANS – LIVING THINGS IN THEIR HABITATS		SOUND	STATES OF MATTER		ELECTRICITY
QUESTION			How do we hear?	Where have all the puddles gone?		Is this electric?
KEY KNOWLEDGE	•describe the simple functions of the basic parts of the digestive system in humans •identify the different types of teeth in humans and their simple functions •construct and interpret a variety of food chains, identifying producers, predators and prey		•identify how sounds are made, associating some of them with something vibrating •recognise that vibrations from sounds travel through a medium to the ear •find patterns between the pitch of a sound and features of the object that produced it •find patterns between the volume of a sound and the strength of the vibrations that produced it •recognise that sounds get fainter as the distance from the sound source increases	•compare and group materials together, according to whether they are solids, liquids or gases •observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) •identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature		•identify common appliances that run on electricity •construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers •identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery •recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit •recognise some common conductors and insulators, and associate metals with being good conductors
TEXT	The incredible book eating boy		Guitar genius	Charlie and the chocolate factory		
Questioning and Enquiring	**Ask relevant questions that can be answered by using the appropriate scientific enquiry, research or experiment/test. Refine the question asked so that any test or experiment carried out can give a more precise outcome. I can decide when and how research will help and carry out research on my own.**					
Investigating, recording and reporting findings, drawing conclusions.	**Plan and carry out simple practical enquiries, comparative and fair tests** relevant to the questions or ideas they are investigating. Identify one or more control variables from those provided when conducting a fair test. Decide whether a fair test is the best way to investigate their question or idea. **Gather and present simple scientific data in a variety of ways** Select the most useful ways of presenting information given a range of choices including tables and bar charts where intervals and ranges agreed through discussion, **to help in answering questions.** **Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions .**Use notes, simple tables and standard units to help decide how to record and analyse data **Record findings using more complex scientific language, drawings, labelled diagrams, keys, bar charts and tables** **Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions,** Identify when repeated results may be appropriate **Use straightforward scientific evidence to support their findings**, make further predictions and explain their findings. Identify new questions that may arise from the data and suggest ways of improving their enquiry based on the data. Look for changes, patterns, similarities and differences to help draw conclusions and answer questions. Identify scientific evidence they have used in drawing conclusions					
	Take accurate measurements using more complex standard units and parts of units such as parts of units of length, mass, volume, weight, time, heat **Choose from a range** provided **appropriate equipment** for measuring and observing,					

SCIENCE Y5	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS	PROPERTIES AND CHANGES TO MATERIALS	EARTH AND SPACE		FORCES		ANIMALS INCLUDING HUMANS/LIVING THINGS IN THEIR HABITAT
QUESTION	Can materials change?	What is my place in the universe?		Can you feel a force?		How does life begin?
KEY KNOWLEDGE	•compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets •know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution •use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating •give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic •demonstrate that dissolving, mixing and changes of state are reversible changes •explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda	•describe the movement of the Earth and other planets relative to the sun in the solar system •describe the movement of the moon relative to the Earth •describe the sun, Earth and moon as approximately spherical bodies •use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky		•explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object •identify the effects of air resistance, water resistance and friction, that act between moving surfaces •recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect		•describe the changes as humans develop to old age •describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird •describe the life process of reproduction in some plants and animals.
TEXT	Kensuke's kingdom	cosmic		The man who walked between the towers		Charlotte's web
Questioning and Enquiring	**Refine a scientific question** so that it can be investigated and tested, recognising that some questions may not be answered by the investigation chosen and **be able to suggest changes to either the question or the investigation.** Choose an appropriate type of science enquiry that can provide the best outcomes and evidence. Begin to recognise which secondary sources will be the most useful to research their ideas					
Investigating, recording and reporting findings, drawing conclusions.	**Plan enquiries** deciding when it is appropriate to carry out a fair test or another type of practical enquiry from a range suggested. Identify one or more control variables in investigations, clarifying which are control, dependent and independent variables in a fair test which they conduct. **Select appropriate ways** and the most useful ways **of gathering and presenting scientific data** of increasing complexity from models, writing, drawing, display, through ICT, tables or graphs (choosing appropriate ranges and intervals). Use correct scientific symbols where appropriate in recording. **Present findings in written form, displays and other presentations** including orally, **explaining results and conclusions drawn from results**. Identify causal relationships in reporting outcomes where appropriate. **Use test results to draw conclusions,** recognising and explaining why results are reliable or not the test may need improvements to improve reliability **Use test results** to prompt **new questions** and **make predictions for setting up further tests.**					
Observing, measuring and pattern-seeking.	**Take measurements using a range of scientific equipment with increasing accuracy and precision**, selecting suitable ranges and intervals the ranges and intervals used. With support, recognise that some measurements and observations may need to be repeated. Begin to identify patterns found in the natural environment and begin to make their own decisions about what observations to make, what measurements to use, how long to make them for, and whether to repeat them.					

SCIENCE Y6	AUTUMN	AUTUMN	SPRING	SPRING	SUMMER	SUMMER
FOCUS	LIVING THINGS, EVOLUTION AND INHERITANCE		ELECTRICITY	LIGHT		ANIMALS INCLUDING HUMANS
QUESTION	Who am I?		How bright is your bulb?	How do we see things?		
KEY KNOWLEDGE	•describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals •give reasons for classifying plants and animals based on specific characteristics •recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago •recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents •identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution		•associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit •compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches •use recognised symbols when representing a simple circuit in a diagram	•recognise that light appears to travel in straight lines •use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye •explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes •use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them		identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood •recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function •describe the ways in which nutrients and water are transported within animals, including humans
TEXT	Wonder		Goodnight Mr Tom			Pig heart boy

Questioning and Enquiring	**Recognise scientific questions to which they do not yet have definitive answers using a range of scientific enquiries to explore possible answers. Use observations and any data gathered to construct a further testable question or to conduct further research. Recognize which secondary sources will be the most useful**
Investigating, recording and reporting findings, drawing conclusions.	**Recognise significant variables** in investigations selecting the most suitable to investigate **controlling variables where appropriate.** **Recognise which type of practical enquiry is most appropriate** to the question or idea being investigated, before planning and carrying out the enquiry Explain why variables are significant in the context of the enquiry being undertaken. Justify the choice of practical enquiry made as being most appropriate. Decide on the most appropriate formats to present sets of scientific data such as using line graphs for continuous variables. **Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs** **Report and present findings from enquiries, including conclusions, causal relationships and explanations of results in oral and written form such as displays and other presentations,** Make increasingly appropriate choices about effective recording and reporting of findings using scientific language, understanding and vocabulary confidently **Use and compare test results to make predictions for setting up further comparative and fair tests.**
Observing, measuring and	Decide whether it is appropriate **to repeat observations or measurements** and explain how this will impact on their data collection. **Choose and use correctly the appropriate equipment to support**

YEAR 1 SCIENCE: ANIMALS INCLUDING HUMANS (AUT 1)
Am I an Animal?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 1 SCIENCE: PLANTS (SPRING 1)
Are All Leaves the Same?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 1 SCIENCE: MATERIALS (SUMMER 1)
What Does Begu Think of Life on Planet Earth?

KEY QUESTIONS/LEARING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 2 SCIENCE: MATERIALS (AUTUMN 1)
What Would Traction Man Use to Build Our School?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 2 SCIENCE: PLANTS (SPRING 1)
How Does Your Garden Grow?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 2 SCIENCE: ANIMALS INCLUDING HUMANS (SPRING 2)
How Can I Grow Up to Be Healthy?

KEY QUESTIONS/LEARING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 2 SCIENCE: HABITATS (SUMMER 2)
Do Living Things Depend on Each Other?

KEY QUESTIONS/LEARING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 3 SCIENCE: ROCKS (AUTUMN 1)
What is Beneath My Feet?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 3 SCIENCE: FORCES AND MAGNETS (Autumn 2)
?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 3 SCIENCE: ANIMALS INCLUDING HUMANS (SPRING 2)

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 3 SCIENCE: LIGHT (SUMMER 2)
Do Shadows Change?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 4 SCIENCE: DIGESTIVE SYSTEM (AUTUMN 1)
What Happens to the Food We Eat?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 4 SCIENCE: HABITATS (AUTUMN 2)
Who Eats Who?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 4 SCIENCE: SOUND (SPRING 1)
How Do We Hear?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 4 SCIENCE: MATTER (SPRING 2)
Where Have All the Puddles Gone?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 4 SCIENCE: ELECTRICITY (SUMMER 2)
Could we Cope Without Electricity?

KEY QUESTIONS/LEARING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 5 SCIENCE: REVERSIBLE AND IRREVERSIBLE CHANGES (AUTUMN 1) Can Materials Change?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 5 SCIENCE: EARTH AND SPACE (AUTUMN 2)
Is there anybody out there?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 5 SCIENCE: FORCES (SPRING 2)
Can you Feel a Force?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 5 SCIENCE: ANIMALS INCLUDING HUMANS/LIFE CYCLES (SUMMER 2)

KEY QUESTIONS/LEARING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 5 SCIENCE: REVERSIBLE AND IRREVERSIBLE CHANGES (AUTUMN 1) Can Materials Change?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 6 SCIENCE: EVOLUTION AND INHERITANCE (AUTUMN 1)
Who Am I?

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 6 SCIENCE: LIVING THINGS AND THEIR HABITATS (AUTUMN 2)

KEY QUESTIONS/LEARNING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

YEAR 6 SCIENCE: CIRCULATORY SYSTEM (SPRING 1)
Why is the heart the most important muscle we own?

KEY QUESTIONS/LEARING CHALLENGES	
LC1	
LC2	
LC3	
LC4	
LC5	
LC6	
LC7	

Year 1: Materials Knowledge Mat – What is the best material?

Subject Specific Vocabulary

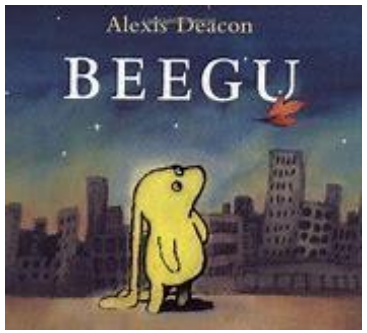
materials	What something is made of, e.g. wood or plastic.
wood	The material that comes from a tree. It varies in hardness.
plastic	A 'man-made' material that can be shaped or moulded to any shape.
metal	A tough and strong material which can be heated and shaped into anything.
glass	hard brittle usually transparent substance commonly made from sand
man made	things that are created by people
natural	things that exist in nature and are not made by people
stretch	A stretchy material is one that is like elastic.
stiff	A stiff material is firm and hard and not flexible.
bend	A bendy material is one that can be twisted and is flexible.
waterproof	A material that does not allow water or liquid through.
shiny	A shiny material is sparkly or glossy and sometimes glittery.

Prior Knowledge

1. Foundation Stage: Knowledge of similarities and differences in relation to objects and materials (eg; clothes they wear in winter)
2. Objects feel and look different based on the material they are made from.

Investigate

- How are materials similar / different to each other?
- Can you sort natural materials from man-made materials?
- What is the best material for……



Sticky Knowledge

1 Glass is used for …

- **Windows** in houses and cars to see through.
- **Mirrors** – to see yourself – reflection.

2 Metal is used for …

- **Strength** –in construction of planes, cars and trains and especially tall buildings.

3 Wood is used for …

- **Doors** – most doors are made from wood.
- **Furniture** – most furniture is made of wood, often special wood.

4 Plastic is moulded or shaped …

- to form any shape from buckets to animal jelly casts.

Year 1: Animals Knowledge Mat – Am I an animal?

Subject Specific Vocabulary

fish	A fish is a scaly skinned creature with a spine that swims in water and breathes using gills.
amphibians	All amphibians begin their life in water with gills and tails. Examples are frogs and newts.
reptiles	Are animals that are cold-blooded. Most lay eggs and their skin is covered with hard, dry scales.
birds	Birds have feathers and wings. They lay eggs and are warm-blooded animals.
mammals	Mammals are also warm blooded animals. They breath air and have a backbone. some common mammals are: • **pets** such as dogs, cats, hamsters • **farm** animals such as cows, sheep and horses • **wild** animals such as foxes, hedgehogs, lions and giraffes • **humans**
carnivore	A carnivore is a meat-eating animal that gets its food from killing other animals.
herbivore	A herbivore eats plants.
omnivore	An omnivore eats plants and meat.
vertebrates	Vertebrates are animals that have a backbone. There are five groups of vertebrates:
Invertebrates	Invertebrates are animals that do not have a backbone.

Prior knowledge

- The names of some common animals.
- The parts of the human body and how they are associated with each sense.

Investigate

- use observations in the local environment to compare animals or through videos and photographs
- describe how to identify and group animals
- group animals according to what they eat
- research how to take care of animals taken from the local environment and how to return them safely

Sticky Knowledge about animals

- ❑ Fish have smaller brains, relative to their body size, in comparison to most other animals.
- ❑ Chickens wash with dust rather than water and clean their feathers with their beaks.
- ❑ Giant Arctic jellyfish have tentacles that can reach over 36 metres in length.
- ❑ Tigers can grow up to a length of 3 metres and weigh up to 300 kilograms when fully developed.
- ❑ The cheetah is the fastest animal to roam the earth with top speeds of 113 km per hour.
- ❑ Dolphins use whistling, clicking and other sounds to communicate with each other.
- ❑ Camels can survive up to six months without water or food due to the fatty tissues stored in their humps.
- ❑ There are about 400 million+ dogs in the entire world. The average life of a dog depending on the breed can vary from 10 to 14 years.
- ❑ Reptiles can be found on every continent of this world very easily except for Antarctica.

Year 1: Plants Knowledge Mat - Are all leaves the same?

Subject Specific Vocabulary

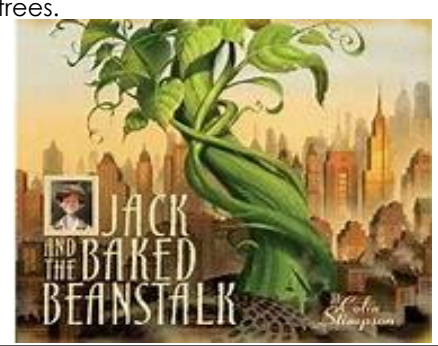
seed	the small, hard part from which a new plant grows
bulbs	The resting stage of a plant that is usually formed underground.
deciduous	Deciduous is the name given to trees that lose their leaves in autumn and are bare in the winter.
evergreen	Evergreen is the name of trees that have leaves all year round.
trunk	the large main stem from which the branches grow
roots	the parts of a plant that grow under the ground
leaf/leaves	the parts of a tree or plant that are flat, thin, and usually green
flowers	the part of a plant which is often brightly coloured and grows at the end of a stem
petal	thin coloured or white parts which form part of the flower
garden	a piece of land next to a house, with flowers, vegetables, other plants, and often grass
wild	plants that live or grow in natural surroundings and are not looked after by people
vegetable	A vegetable is a plant or part of a plant which is used as food, for example cabbage or potato.
weed	a wild plant that grows in garden and prevents the plants that you want from growing properly

Prior Knowledge

- Make observations of plants and know that plants grow
- Talk about how plants can change

Investigate!

- Plant a bean or a seed and watch it grow. Record your observations in a diary.
- Go on a wild plant hunt! Create a tally chart to show how many of each plant you have found and then use the information to answer questions.
- Go on a tree hunt around the School grounds - what types of trees can you see? Collect fallen leaves and identify which tree they came from using pictures to help you. Sort the leaves between deciduous and evergreen trees.



Sticky Knowledge about plants

- ❑ Some trees can live for thousands of years.
- ❑ Around 2000 different types of plants are used by humans to make food.
- ❑ Some plants are carnivores. A well known example of a carnivorous plant is the Venus Flytrap.
- ❑ Sweet peas and marigolds can be fast growing plants. These flowers can germinate in 5-10 days!
- ❑ As well as looking beautiful, trees help purify the air and provide food and shelter for all sorts of creatures.
- ❑ Water and nutrients travel up the tree trunk, through the branches and all the way out to the leaves
- ❑ Many common plants are very poisonous. Some are probably growing in your backyard. Daffodils, hydrangea, foxglove and many others can make you very sick.
- ❑ Many plants have healing powers and have been used for thousands of years for medicine.
- ❑ Some trees can grow to around 100 metres (328 feet) in height!

Year 1: Seasonal Change Knowledge Mat

Subject Specific Vocabulary

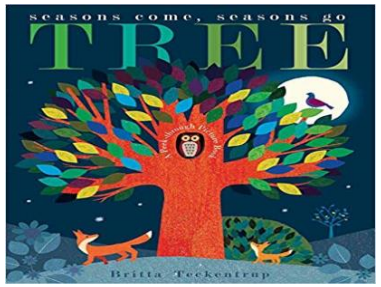
Autumn	The time of year between September and November. Many leaves fall off the trees.
Spring	The time of year between March and May. There is usually lots of signs of new growth in Spring.
Summer	The hottest season in the UK. It happens between June and August. The longest day is June 21st.
Winter	The coldest season in the UK. We can have snow in this season. It occurs between December and February.
seasons	The **seasons** are four different times during the year with different types of weather.
weather	Weather is what the sky and the air outside are like, such as cold and cloudy.
temperature	It is measurement of hot or cold that can be measured using a thermometer.
thermometer	This is the instrument that measures the temperature.
weather symbol 	These are signs used to help us understand more about our daily weather.
day	the part of a day when it is light; the time between sunrise and sunset
night	the time after sunset and before sunrise while it is dark outside (no sunlight is visible).

Prior Knowledge

- They talk about the features of their own immediate environment and how environments might vary from one another.
- They can talk about the changes that happen in these environments

Investigate

- Go on a wild plant hunt and observe the changes in each season
- Go on a tree hunt in the school grounds and identify the colour and shape of the leaves in the different seasons.



Sticky Knowledge about seasonal change

- ❑ In the UK we have four seasons: spring, summer, autumn and winter. Summer is the hottest season and winter the coldest.
- ❑ Spring starts when the day and night are the same length (usually 21st March. However, many say that Spring starts on March 1st).
- ❑ In summer the longest day of the year is around June 21st and in winter the shortest day of the year is usually December 21st.
- ❑ When we have our summer it is winter in the southern hemisphere. When we have our winter Australia has its summer.
- ❑ In the USA and many other countries the season 'Autumn' is known as the 'Fall'. This is because so many leaves fall from the trees in Autumn.