

Long term plans for: (insert name of subject)

Our Curriculum Drivers are:

Wellbeing

Aspirations

Outdoor Learning

These key drivers are integral to all that we do at Glade, to ensure that all of our pupils leave us as happy, healthy and well-rounded individuals.



"Growing, Learning, Achieving with Dedication and Enthusiasm"



	KEY VOCABULARY FOR EACH YEAR GROUP IN SCIENCE
EYFS	<p>For EYFS this is a sample of the types of vocabulary they should be exposed to.</p> <p>What animals give us - Meat, roast chicken, bacon/ham, milk/cheese/ butter, wool, hair, eggs, honeycomb, honey.</p> <p>Environments – Environment, Woodland, valley, Playground. Recycling, compost. Changes</p> <p>Seasons: - Spring (growth, baby animals) - Summer - Autumn (Harvest) - Winter</p> <p>Weather: - Sun, rain, wind, snow, ice, frost, sleet, hail. - Cold/warm/hot, Day length, day light.</p> <p>Materials: - Bubble wrap, foil, plastic, fabric, paper, straw, sticks, bricks, metal, glass, properties, suitable, pipette, recycling.</p> <p>Living things – plants, grow, lifecycle, roots, shoots, stem, leaves, buds, flower, water, light, warmth, temperature, soil, compost</p> <p>Living things – animals, body parts, backbone, skeleton, soft body, shell, adapted, hibernate, migrate, predator, prey, nocturnal, adult/parent, baby.</p> <p>Lifecycle: - Egg, caterpillar, chrysalis, butterfly, birds (owl, duck), insects/bugs/ minibeasts (lacewing, ladybird, woodlouse, bee, wasp, spider, tarantula, earthworm, snail, locust, cricket, millipede, butterfly, caterpillar), fish, reptiles (snake, tortoise, gecko), amphibians, mammals (mouse, shrew, vole, hare, fox)</p> <p>General nature:- Natural, wild, wildlife, native.</p> <p>Habitats - Woodland, desert, ocean, jungle, Arctic.</p> <p>Microhabitats: - Log, stone, tree, dead leaves, soil</p> <p>British Autumn fruits and vegetables (e.g. apples, pears, beetroot, carrots, potatoes, butternut squash, sweetcorn, cauliflower).</p>
Year 1	See Separate sheet
Year 2	See Separate sheet
Year 3	See Separate sheet
Year 4	See Separate sheet
Year 5	See Separate sheet

Year 6

See Separate sheet



Long Term Plan (Content and Skills)

Subject	Autumn	Spring	Summer
EYFS	<p>Places</p> <ul style="list-style-type: none"> • Different animal habitats. • Seaside and Glade woodland <p>Objects</p> <ul style="list-style-type: none"> • Fruits and vegetables. • Dough and cooked bread. • Making bigger/smaller shadows. • Floating and sinking. 	<p>Living things</p> <ul style="list-style-type: none"> • Body parts of familiar animals. • What owls and other birds eat. • Nocturnal and diurnal animals. • Adult and baby animals. <p>Pet shop animals.</p> <ul style="list-style-type: none"> • How animals move. • Sounds animals make. <p>Contrasting environment visit (farm)</p>	<p>Materials –</p> <ul style="list-style-type: none"> • Waterproof and not waterproof. • Strong and weak. • Recyclable and not recyclable. • Which materials melt in the Sun and which do not? <p>Growing plants</p> <ul style="list-style-type: none"> • Seeds • Why do we water plants? • What plants can we grow – links to English
	<p>Across all three terms Simple Seasonal Changes</p> <ul style="list-style-type: none"> • Rainfall in Winter and Summer • Clothing we wear in different seasons • Changes in the environment around us 		
EYFS Skills	<ul style="list-style-type: none"> • Ask questions Demonstrate curiosity about the world around them. • Make predictions • With support or prompting, talk about what they think might happen based on their own experiences. • Decide how to carry out an enquiry Respond to prompts to say what happened to objects, living things or events. • Take measurements • Use senses and simple equipment to explore the world around them, e.g. binoculars and magnifying glasses. • Record data Talk to an adult about what has been found/found out. • With support, explain why some things occur. 		

	<ul style="list-style-type: none"> • Draw conclusions • With support, talk about what they have found out or what they think might happen next/ change based on their own experiences 		
1	<p>Animals Including Humans</p> <p>Ourselves</p> <ul style="list-style-type: none"> • Look at how we've changed • Look at our bodies • What can we hear? • How can we sort things using our senses? • Sensory explorers, making sensory boards/bottles <p>Everyday Materials</p> <p>Let's Build</p> <ul style="list-style-type: none"> • What materials can we find? • Matching materials • Magnets and metal • Sorting materials • Three little pigs and their building materials choices • The three alternative little pigs 	<p>Animals Including Humans</p> <p>Pets</p> <ul style="list-style-type: none"> • Environment observation • Where do woodlice live? • Imaginary pets • My animal is healthy and happy • Comparing animals • Bring a pet to school day (Animal observation) <p>Everyday materials</p> <p>Marvellous Materials</p> <ul style="list-style-type: none"> • Mending a torn umbrella • A pair of boots for... -DT link • Ice observation • Frozen rescue 	<p>Plants</p> <p>What's growing in our gardens?</p> <ul style="list-style-type: none"> • Going and growing outside • One potato, Two potato • Garden centre and seeds • What lives in a garden? • What's inside a flower? • Growing a flower • What's inside a tree <p>Everyday materials</p> <p>Marvellous Materials</p> <ul style="list-style-type: none"> • Puddle observation • Animal homes
	<p>Across All three terms</p> <p>Seasonal changes</p> <p>Wonderful Weather</p> <ul style="list-style-type: none"> • What do we know about weather? • Weather watching • Shadow fun • Weather station: Rainfall • Weather station: Wind direction <p>Weather station: temperature</p>		
Year 1 skills	<ul style="list-style-type: none"> • observe objects, living things and events using appropriate senses • describe objects living things and events using the appropriate language e.g. shiny, dull, rough, smooth • begin to compare one object, living thing or event with another and, where appropriate, begin sorting into groups 		

	<ul style="list-style-type: none"> • measure in non-standard units e.g. hand spans, unifix cubes etc. • with help, test out an idea suggested to them • say what they think will happen • begin to record observations and non-standard measurements on a very simple table that has been provided for them • communicate what they have found out or observed through describing their observations (talking) • communicate their observations through drawings and pictures • communicate some observations through writing e.g. word labels, or simple sentences depending on their level of ability • collect evidence to try to answer a question 		
2	<p>Animals Including Humans Healthy animals</p> <ul style="list-style-type: none"> • Hatching eggs • Babies! • Stranded survival needs! • Healthy hearts • Deep inside my lunch box • Pack a healthy picnic <p>Everyday Materials Materials Matter</p> <ul style="list-style-type: none"> • Mopping up • Are bricks absorbent? • Waterproof materials • Printing • Resist the wax • Melting and moulding 	<p>Everyday Materials Squash, bend, twist, stretch</p> <ul style="list-style-type: none"> • Which ball is the bounciest • Which fabric stretches most? • Testing rigidity • Tough and flexible • Which is the strongest paper? • Paper bridges <p>Living Things and their habitats Habitats</p> <ul style="list-style-type: none"> • Dead or alive? • Micro habitats • Habitat dioramas • Food chains • Designing a bug hotel • Making a bug hotel 	<p>Living Things and their habitats Gardens and allotments</p> <ul style="list-style-type: none"> • Making a playground allotment • Making a micro-habitat • Farming and food chains • Food chain game • Transfer of energy • We are what we eat - food technology link <p>Plants Ready Steady Grow!</p> <ul style="list-style-type: none"> • Spreading seeds • Spreading seeds • Hydroponics in the classroom • Growing cress • How has the bean grown?

- | | | | |
|--|---|--|--|
| | | | |
| | <ul style="list-style-type: none">• observe and describe objects, living things and events using scientific language by comparing one thing against another e.g. rougher smoother• recognise similarities and differences in objects, living things and events• sort things into groups using scientific groupings e.g. waterproof and not waterproof• order objects, living things and events through their observations• put forward their ideas about how to find things out• with help, suggest ideas about how to collect data to answer questions• say what they think might happen in an investigation and compare with what did happen• measure in non-standard units and then, where appropriate, standard units. These will include length and mass• begin to recognise when something in a test is not fair and with help, start to think about how to make it fair• record observations and measurements on a prepared table and, where appropriate, begin to construct their own simple two column table.• record their data, with help, on a simple bar chart or block graph• say what happened and begin to try and give a simple explanation for the observation• communicate their observations through talking, drawing pictures, picture diagrams and writing• use simple texts with help, to find information• collect evidence to try to answer a question | | |

3	<p>Plants Roots and Shoots</p> <ul style="list-style-type: none"> • Space to grow • Roots, shoots and so much more – labelling diagrams • Water for life • Plant investigation • Flower power – Observational drawing • More about flowers – Flower pollination/ importance of bees • Seed dispersal <p>Rocks Rocks and fossils</p> <ul style="list-style-type: none"> • Rock stars! Classifying rocks • Rock detectives – comparative testing • Rock survey • Fantastic fossils • Soil detectives - comparative testing • Rock and fossil museum – Presentation PowerPoint 	<p>Animals including humans Keeping healthy</p> <ul style="list-style-type: none"> • Food for thought • A balanced diet - teeth • Bones and skeletons • Muscle and movement • Health and fitness investigation • Personal trainer presentation - research project <p>Healthy eating DT Link project</p>	<p>Forces and Magnets Amazing Magnets</p> <ul style="list-style-type: none"> • May the force be with you! • Acting forces – comparative testing • Magnetic attraction • Poles apart • Magnetic fun – designing a game • Fun of the fair – making and evaluating a game <p>Light Light and Shadows</p> <ul style="list-style-type: none"> • What is light? • Reflectors and lights • Mirror, Mirror – bending light • Shadows • Shadow investigation • What an performance- shadow performance link with English
	<ul style="list-style-type: none"> • observe and describe objects and events by comparing similarities and differences and by using language which is appropriate to KS2 • suggest a wide range of scientific criteria to group and order their observations • put forward their own ideas and be helped to refine these into a form that can be tested • suggest what the outcome might be in a test (prediction) and begin to explain why using everyday experience • suggest how they will test out their own idea or question or one suggested to them • construct their own simple two column table and record their observations and measurements without assistance • record their data unaided on simple bar charts (where the axes are given e.g. time intervals) 		

	<ul style="list-style-type: none"> • measure in standard units – length, mass, time, temperature, volume of liquid • explain why an aspect of a test may be unfair and how they could make it fair • explain their observations using simple cause and effect • draw conclusions from results and begin to use scientific knowledge to suggest explanations for them • identify simple patterns in results and make simple generalisations from them e.g. the higher the ramp the further the toy car travels • communicate their findings through writing, posters, pictures and verbally • begin to use texts by themselves to find out information • think about how they could improve their work • begin to recognise why it is important to collect data to answer questions 		
4	<p>States of Matter States of Matter Scientists</p> <ul style="list-style-type: none"> • Solid or liquid? • It's a bit gassy • Particle party – temperature taker • Evaporation and condensation • Make it rain • Science fair – PowerPoint/ Presentation of states of Matter <p>Electricity It's Electric</p> <ul style="list-style-type: none"> • Electrical fun • Understanding electrical safety • Building a circuit 	<p>Sound Listen Up</p> <ul style="list-style-type: none"> • Sound walk • Good vibrations • Pitch and Volume - Investigation • Pardon? – Muffling sound investigation • SSSHHHHhhhh! – Sound travelling investigation • Rock Star challenge – designing ear defenders <p>Living Things and their habitats Name that Living Thing</p> <ul style="list-style-type: none"> • What is that? – Life processes poster • Local living things – what are they? • How are living things classified 	<p>Animals including humans Are these your teeth?</p> <ul style="list-style-type: none"> • Excuse me are these your teeth? – Animal teeth • What happens to my food? • What does the small intestine do? • What did this poo? • Who's the predator? • How did you know? – Presentation <p>Living Things and their habitats Help Our Habitats</p> <ul style="list-style-type: none"> • Our environment • Other changes – Natural and man-made changes

	<ul style="list-style-type: none"> • Good conductor, Bad conductor • Explain what you know 	<ul style="list-style-type: none"> • Closer inspection – branching database • Enormous insects – Model of insect • I'm thinking of a living thing – Knowledge quiz 	<ul style="list-style-type: none"> • Climate change • Impact of change • Help Our habitat • Positive impacts
	<ul style="list-style-type: none"> • carefully observe and describe objects, living things and events, using language appropriate to KS2, by comparing and grouping their observations • put forward their own testable ideas in a form that needs less refinement by the teacher • suggest what might happen in a test (prediction) and begin to give explanations some of which are based on scientific knowledge and understanding • set up their own test to test out their ideas or ideas suggested to them • set up an investigation recognising what to change and what to measure, controlling at least two factors and saying why it is important to do so • construct a variety of tables to record observations and measurements such as data from investigations, surveys etc. • record their data unaided on bar charts and begin to label and define their own axes • measure in standard units and choose the most appropriate form of measuring • begin to select the equipment they need for an investigation • explain their observations and results using cause and effect which is beginning to be based on scientific knowledge and understanding • communicate their findings verbally and through writing, drawings and diagrams • identify simple trends and patterns in results and suggest explanations for some of these • explain what the evidence shows and whether it supports any prediction made 		

	<ul style="list-style-type: none"> • use texts independently to find information • recognise why it is important to collect data to answer questions • collect evidence in a variety of contexts to test an idea or prediction 		
5	<p>Earth and Space Space Presenters</p> <ul style="list-style-type: none"> • Coming up with the intergalactic goods! – Movement of the earth and planets • Planetary scales – model the solar system • How the solar system works • Day and Night- Changing shadows • Sun dial designers – time zone detectives • A moon Month <p>Properties of Materials Refugee Materials</p> <ul style="list-style-type: none"> • Survival materials challenge – classifying materials • Keeping hot, Keeping cold • Food packaging challenge • Cleaning material challenge • Electrical health and safety • Keeping the sound contained 	<p>Changes of Materials Changing Materials</p> <ul style="list-style-type: none"> • Soluble solutions • Separation Solutions • Chemistry of Cooking • Oxidation sensation – Irreversible change investigation • Chemistry Kitchen – Key Scientists • Science Fair – Audience testing – Explanation writing <p>Forces May the Forces be With You</p> <ul style="list-style-type: none"> • Forces mission training camp – Isaac Newton theory • Parachuting in - Investigation • Lever and Pulley challenge • Bike Lever Challenge – Friction testing • Goldilocks path Challenge – Friction on surfaces • Boat Challenge – water resistance 	<p>Living Things and their habitats Art of Living</p> <ul style="list-style-type: none"> • Sexual reproduction in flowers • Asexual reproduction in flowers • Insect and amphibian lifecycles • Mammals and birds- lifecycles • Lifecycles from around the world – comparative research • Meeting and becoming natural scientists – presentation <p>Animals including humans Life Explorers</p> <ul style="list-style-type: none"> • Gestation Gurus – Human life stages • Foetal development – human or animal • Growth and change – baby and child • Growth and change – Adolescence and puberty • Growth and change – Adults and Old age • Human timeline
	<ul style="list-style-type: none"> • observe and describe things in careful detail using scientific language • sort and classify objects, living things and events with precise criteria e.g. solid, liquid, gas • put forward their own testable ideas in a form that can be tested 		

- make predictions based on scientific knowledge of what might happen in a test and explain why
- plan how to collect sufficient evidence to test an idea
- set up their own investigation to test out a prediction
- set up and carry out investigations which are fair
- identify factors that need to be considered in different contexts
- construct their own tables to record observations
- record data on tables, bar charts and graphs where they label the axes, and where appropriate begin to plot data on line graphs
- begin to measure precisely in standard units and to choose the most appropriate equipment for the task
- begin to repeat observations and measurements when appropriate
- explain their observations and results using cause and effect based on science knowledge
- interpret and predict from bar charts and line graphs
- identify patterns in their data and suggest explanations for these using scientific knowledge
- select the most appropriate way to communicate their findings through evaluative, not just descriptive, writing, diagrams and presentations
- select information from a range of sources
- suggest improvements in their work giving reasons
- recognise whether conclusions drawn from data match any predictions made

	<ul style="list-style-type: none"> recognise that scientific ideas are based on evidence 		
6	<p>Living Things and their habitats Marvellous Microorganisms</p> <ul style="list-style-type: none"> Finding Linnaeus – Key scientist Odd One Out – Classifying Classification charts – Aliens/ sweets Classification in your backyard Quirky creatures – micro-organisms investigation New creature features – Design classification process <p>Evolution and Inheritance Game of Survival</p> <ul style="list-style-type: none"> Inheritance detective Mutations and adaptations Extreme survival Meet the evolutionary pioneers Evolutionary trees and Fossils Presentation/ Own animal DT link - biomimicry 	<p>Electricity Electrical Celebration</p> <ul style="list-style-type: none"> Electrical festive challenge – Designing lights for a festival – what challenges are there? Playing with electricity – Investigating circuits Designs, ideas and circuit diagrams Create a dimmer switch Create festive lights prototypes Entering the ‘Dragon’s Den’ – explain design features <p>Light Crime Lab Investigation</p> <ul style="list-style-type: none"> Light Specialist required- Light travelling, behaviour etc. Light travels in straight lines Up periscope Shadow giants – thief shadow Rainbow world A trick of the colourful light filters 	<p>Animals including humans The Art of Being Human</p> <ul style="list-style-type: none"> Blood composition and function The heart Nutrient detective The circulatory systems A healthy body; diet exercise and lifestyle A healthy body; Drugs and alcohol <p>Second Look Science The science of Sport</p> <ul style="list-style-type: none"> Tantalising turf – grass investigation Sports kits and equipment enquiries – materials testing Harnessing Sports forces – friction, air resistance Human body and sports – Body investigation Sports talent – Inheritance or training Lighting up Sports stadium- circuits and conductors
	<ul style="list-style-type: none"> observe and describe objects, living things and events in precise detail using correct scientific language independently set up a fair test make predictions based on science knowledge and understanding identify factors that are relevant to a particular situation measure accurately e.g. to the nearest degree, millimetre etc. 		

- select the most appropriate equipment for the task
- decide when repeat observations and measurements need to be made
- select the most appropriate way to record and present results
- begin to present data as line graphs where appropriate
- interpret and make predictions from bar graphs and line graphs
- say whether the evidence supports any predictions made
- select information from a wide range of sources
- identify trends or patterns in results that do not fit
- explain results using scientific knowledge and understanding
- evaluate their work and identify ways to improve it
- consider how scientists have combined evidence from observations and measurements with creative thinking to suggest new ideas and explanations for phenomena

Year 6 extension targets

Children will be given the opportunity to develop the following skills

to identify the key factors they need to consider in order to collect evidence in a variety of situations

to set up and carry out fair tests in which they independently control a number of key factors

to measure with precision a variety of quantities (time, mass, volume, temperature etc.) using instruments with fine divisions

to identify how much data to collect in order to answer a question, ensuring the evidence is sufficient

to identify measurements and observations that do not fit the main pattern or trend in data and suggest reasons for these

to choose scales for graphs that enable them to show the data effectively

to decide when observations and measurements need to be repeated to give more reliable data and to be able to say why checking observations and results is important