Progression Map for Science

Year 1	Asking Questions	Identifying and classifying	Observing over time	Pattern seeking	Comparative and fair testing	Research using secondary sources
Autumn 1 **Animals inc Humans**	What is an animal?	TAPS - Six types of animals Omnivore, herbivore, carnivore		Venn diagram of animals that are herbivore, omnivore or carnivore		Owls – English Elephants – English Bugs - English
Autumn 2 **Seasonal change** **Plants (Trees)**	What changes can we see? What are the different types of weather?	Identify and name a variety of deciduous and evergreen trees. Identify parts of a tree Identify different types of weather	How does a tree change over the year? TAPS – Leaf look	Which clothing is appropriate for the weather?	Comparing deciduous and evergreen trees	
Spring 1 **Materials**	What type of material is appropriate for the purpose? What are the physical properties of wood, glass, plastic, metal and rock?	Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials. Group properties of wood, glass, plastic, metal and rock.		Look at the difference between objects and the material it is made from.	TAPS- Does the material float or sink? Compare properties of wood, glass, plastic, metal and rock	
Spring 2 **Seasonal Change** **Materials**	What types of materials are used to make our school? What are the 4 seasons? What does a spring bulb look like?	Group objects according to their materials and properties. Identify the current season. Identify a spring bulb.	TAPS- Seasonal change		Which materials are absorbent /waterproof? What would be the best material to make a jacket for Mr Cook?	
Summer 1 **Plants**	What is a plant?	Identify and name a variety of common wild and garden plants. Label the parts of a plant Identify which plants grow in the local environment. TAPS – Structure of a plant		What are the most popular wild plants on the school grounds? (Bar graph)		
Summer 2 **Animals inc Humans (body)**	What is a body? What are the 5 senses?	TAPS – identifying body parts Identify the 5 senses	How does my height change over the year?		Is our sense of smell better when we can't see?	

Year 2	Asking Questions	Identifying and classifying	Observing over time	Pattern seeking	Comparative and fair testing	Research using secondary sources
Autumn 1 **Animals inc Humans**	What is offspring? What does survival mean?	Adults and offspring Life cycle		TAPS Assessment Handspan	Exercises – measuring heart rate	English Non-chronological report about bears
Autumn 2 **Living things and their habitats**	What is a habitat? What is a microhabitat? What is a food chain?	TAPS Assessment Living, dead and never lived Food chains		Making a habitat for a worm		
Spring 1 **Materials**	What are the different uses of materials? Which material is suitable for which job?	Different materials and their properties		Suitability of materials – recording data	TAPS Assessment- Material hunt	
Spring 2 **Materials**	Who is Charles Macintosh? Who is John Dunlop? Why are these people important to materials?	Famous material inventors			TAPS Assessment Making boats to float out of different materials	
Summer 1 **Plants**	What is a plant and where do we find them? What do you think growth would be like in different conditions?	What plants need to stay healthy	TAPS Assessment Comparing plant growth in different conditions		Grow and measure a cress head	
Summer 2 **Plants**	Where would we find trees? What is the purpose of leaves? What is CO2/oxygen?	Key parts of a tree		The purpose of leaves on a tree (photosynthesis)		

Year 3	Asking Questions	Identifying and classifying	Observing over time	Pattern seeking	Comparative and fair testing	Research using secondary sources
Autumn 1 Animals inc Humans	Animals (TAPS), can children ask questions about the diversity of human skeletons and turn questions into a form that can be investigated.	Identify and classify different types of nutrition and food groups needed by humans.		Labelling the human skeleton, circulatory system and muscular system. Key (label food groups colour coded – Autumn 2022).	Do male humans have larger skulls than females? Table of results (Investigation) - including oral and written explanation.	Research of animals throughout English non-chronological reports.
Autumn 2 Rocks	How would you classify these rocks (appearance, texture, purpose)? What are fossils and how are they formed? Which rocks are most permeable?	Identify and classify different types of rocks. Identify and classify different types of soil/process of soil formation.		Comparing rocks in TAPS assessment (table can be used to compare).	Comparing rocks in TAPS assessment (table can be used to compare).	Opportunity to research different types of rocks.
Spring 1 Forces and magnets	What is a force? What is gravity and how was Newton important? What is a pulley and what is its purpose? What are magnets and what does it mean to attract and repel?	Identify the poles of a magnet and different forces (gravity, friction).	Forces TAPS (friction) - observations.		Make predictions for new values – which shoe grip would be most suitable? Suggest improvements – based on what we learned which material would be best...?	
Spring 2 Forces and magnets	What is a force? What is gravity and how was Newton important? What is a pulley and what is its purpose? What are magnets and what does it mean to attract and repel?	Identify different forces.		TAPS – Testing the strength of magnets.	TAPS – Testing the strength of magnets.	
Summer 1 Plants	What are the basic needs of plants? What are the functions of a plant? How many types of seeds are there and how are they dispersed? What is the life cycle of a plant?	Identify and classify different plants and seeds.	Observing seeds over time	Observe how plants grow based on the water it is given. (Bar chart and key) Accurate drawings of plant and its parts. Key/bar charts to monitor growth conditions of plants.	Compare whether the colour of flowers affects pollination. TAPS – How much water do plants need?	
Summer 2 Light	What does dark mean? What is reflection? Name reflective materials. What is UV and why should we protect our eyes? What happens when we block light?		Take accurate measurements using equipment to measure light (check data logger functions). Observe shadows over time.	Test materials and surfaces to see which materials are reflective. TAPS – can everything make a shadow?	Light – display and present results relating to creating their own curtain.	

Year 4	Asking Questions	Identifying and classifying	Observing over time	Pattern seeking	Comparative and fair testing	Research using secondary sources
Autumn 1 **Animals inc Humans**	TAPS - liquids damaging teeth.	Identifying types of teeth Classifying animals; herbivores, carnivores, omnivores Identifying carnivore and herbivore teeth Identifying components of a food chain and classifying these		Labelling parts of the digestive system in a diagram Labelling teeth in a diagram Gather data on which liquids damage teeth Venn diagrams; carnivores, herbivores and their teeth Construct food chains	Predicting parts of the human digestive system Predicting how liquids damage teeth Use results to draw conclusions Displays and presentations Oral and written explain	Researching why humans need teeth Studying food chains Researching the different components of a food chain
Autumn 2 **Living things and their habitats**		To know what classification is and how to classify. Differences between vertebrate and invertebrate Classifying vertebrates and invertebrates		TAPS- Local survey (Use a table to record results/presented in a chart/graph)		Looking at information on vertebrates and invertebrates
Spring 1 and 2 **States of matter**		Gather record and classify info in a variety of words Practically sort materials into their states of matter Draw a diagram to show the process of condensation Labelled diagrams of states of matter.	Investigate how materials change their states TAPS – Cornflour slime		Investigate what temperature causes materials to change state Investigate which conditions are best for evaporation TAPS –drying Key. Suggest improvements Make predictions	Use secondary sources to explain states of matter Create an animated presentation on evaporation and condensation
Summer 1 **Electricity**	Ask relevant questions about electricity and use scientific enquiry to answer them TAPS- Electrical conductors	Group electrical devices based on their power source To know what a complete circuit is and draw a labelled diagram Identify and label the components of a series circuit Differences between conductors and insulators and constructing circuits with both		Bar chars use of electricity across the country		
Summer 2 **Sound**		To know the parts of the ear- label a diagram	Take accurate measurements	Conduct a sound logging survey Explore the correlation between pitch and the object producing the sound Explore the correlation between the volume of a sound and the strength of the vibrations that produced it.	Investigate how sound is made TAPS – String telephone (drawings where appropriate) raise further questions	

Year 5	Asking Questions	Identifying and classifying	Observing over time	Pattern seeking	Comparative and fair testing	Research using secondary sources
Autumn 1 **Animals inc Humans**		Comparing gestations in tables Labelling foetus. Venn diagram – key changes in boys and girls.		Scatter graph on human growth. Bar and line graph. Recording animal's gestations. Timeline.	TAPS – Growth survey.	Use secondary resources to compare children's growth.
Autumn 2 **Living things and their habitats**	Local plants and animals	Classifying animals. Diagram of reproduction in humans. Carroll diagram – similarities and differences Classify animals Labelling plants and animals.	Bean growth.		Present findings about local plants and animals	TAPS – Life Cycle Research
Spring 1 **Properties and changes in materials**	Ask questions about what materials are used for and why.	Classifying various materials materials.	Times intervals when testing materials Repeated readings TAPS – Sugar cube experiment	Record results and find comparisons. Taking measurements using thermometers, length, time.	Testing materials Predictions about materials Create plan/fair test of each material tested. Explain how a material dissolves Present how materials can be separated	
Spring 2 **Properties and changes in materials**	Ask questions about what materials are used for and why.	Classifying various materials materials.	Times intervals when testing materials TAPS – Sugar cube experiment	Record results and find comparisons.	Testing materials Predictions about materials Create plan/fair test of each material tested.	
Summer 1 **Space and Earth**	Ask questions about space.	Labelling Demonstrate using malleable materials the Sun, Earth and Moon as approximately spherical bodies and how they orbit, relative to one another		How the sun, moon and Earth work together creating day/night and weeks/months/years Night and day timetable	Compare/explain the Earth with other planets. TAPS – Solar System Research	Research various theories about space whether the earth is flat or spherical. Create presentation about an aspect of space. TAPS – Solar System Research
Summer 2 **Forces**		Identifying and labelling forces in action. Identify and labelling mechanisms.	TAPS – Water resistance	Compare how various objects fall/why? TAPS – Water resistance Graph – friction.	Conclusion on how weight and mass compare Fair test on how objects fall. TAPS – Water resistance Fair test – friction.	Isaac Newton.

Year 6	Asking Questions	Identifying and classifying	Observing over time	Pattern seeking	Comparative and fair testing	Research using secondary sources
Autumn 1 Animals inc Humans	Impact of drugs and lifestyle – debate. Which type of moving exercise has the greatest effect on our heart rate?	Human circulatory system. Labelling heart and lungs Line graph of heart rate Table of results – heart rate and different meals.	Resting heart rate throughout the day.	Is there a pattern between what we eat for lunch and how fast we can run? Measuring pulse rate.	Does the time of day affect heart rate when exercising? Repeated readings – lunch and exercise TAPS - Impact of stationary exercise on heart rate. Written Presentation and display of alveoli Conclusions AND degree of trust– heart rate	Understand nutrients and their purpose
Autumn 2 Living things and their habitats	Who was Carl Linnaeus? What are micro-organisms?	Classify living things into broad groups according to observable characteristics. Classification keys TAPS: Give reasons why a particular invertebrate belongs to a certain group	Mould on bread over time.		Mould on bread over time. Reporting findings with conclusions.	Research the Linnaeus system. Supporting or refute ideas.
Spring 1 Evolution and Inheritance **Spring 2 Evolution and Inheritance**	What is a fossil? Why don't people look like their family?	Identify animals from images of fossils Use diagrams and labels	Compare the skeletons of apes, humans and Neanderthals. Report or present findings. Record findings in a table. How has the earth changed over time? Identifying scientific evidence How have the features of animals changed over time?	Recognise fossils as evidence for evolution.	is there a pattern between the size and shape of a bird's beak and the food it will eat? Casual relationships	TAPS: Recognise that fossils provide information about living things that inhabited the Earth millions of years ago. Oral and written forms. Identifying scientific evidence Adaptation and evolution
Summer 1 Electricity	*How does electricity flow through a circuit?*	What is the difference between current and voltage? Diagrams and labels	Observing the effect of volts – predicting and observing results. Using test results to make predictions Scatter graph of volts and level of light.	Does wire length affect how components in a circuit work? Plan enquiry Use a range of equipment TAPS: How can you change the brightness of the bulb choosing from the available equipment?	Conductive dough. Use diagrams and labels Using results to make new predictions based on previous investigation. *Casual realtionships and degree of trust* What impact does voltage have on electrical appliances	
Summer 2 Light	TAPS: Raising and sorting light questions	Label the different parts of the eye. Diagrams and labels	Observation – What happens to light when it shines through a prism? TAPS: Investigating shadows.		Planning and conducting an investigation based on a question – different light sources Presenting findings and conclusions. Using equipment to measure light levels. Graph of results Prediction – What will happen to an image behind or under water?	Know how simple optical instruments work e.g. periscope, telescope, binoculars, mirror, magnifying glass etc.