KS1 & 2 SCIENCE Curriculum Mapping

SCIENCE : KEY STAGE ONE- The Pioneers		
Subject Content from Programme of Study	**STEAM Topic Title & Outcome**	**When will pupils be taught this?**
Plants (Y1) – to learn to identify a variety of common wild and garden plants and trees, including evergreen and deciduous.	Who's Awake in the Middle of the Night (Nocturnal Woodland Animals)	Cycle B, Spring 2nd Half
Plants (Y1) – to identify and describe the basic structure of a plant or tree	Who's Awake in the Middle of the Night (Nocturnal Woodland Animals)	Cycle B, Spring 2nd Half
Animals (Y1) – identify and name a variety of common animals including fish, amphibians, reptiles, birds, mammals	What's it Like in the Wild?	Cycle A, Summer 2nd Half & intro in Cycle B, Spring 2nd Half
Animals (Y1) – identify and name a variety of common carnivores, herbivores and omnivores	Who's Awake in the Middle of the Night (Nocturnal Woodland Animals)	Cycle B, Spring 2nd Half
Everyday Materials (Y1) – to distinguish between an object and the material from which it is made and to identify and name a variety of everyday materials such as wood, glass, plastic, metal, rock, water	Amazing Architecture: Landmarks & Castles	Cycle B, Autumn 1st Half
Everyday Materials (Y1) – to describe physical properties of a variety of everyday materials. To compare and group together materials based on their physical properties.	Amazing Architecture: Landmarks & Castles	Cycle B, Autumn 1st Half
Seasonal Changes (Y1) – to observe changes across the four seasons, to observe and describe weather associated with the seasons and how day length varies.	-	Runs through Cycle A across 4 season: Autumn 1, Autumn 2, Spring 2, Summer 1.
Living things and their habitats (Y2) Pupils should be taught to explore and compare the differences between things that are living, dead, and things that have never been alive	What's Special About Cornwall? *Beaches & Tourism*	Cycle A, Summer 1st Half
(Y2) Pupils should be taught to 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	What's it Like in the Wild?	Cycle A, Summer 2nd Half

(Y2) Pupils should be taught to identify and name a variety of plants and animals in their habitats, including micro-habitats	What's Special About Our Beautiful Cornwall? -*Rockpool and seaside microhabitats* Who's Awake in the Middle of the Night -*Woodland habitat*	Cycle A, Summer 1st Half & Cycle B Spring 2nd Half
(Y2) Pupils should be taught to 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.	Who's Awake in the Middle of the Night -*Woodland habitats*	Cycle B Spring 2nd Half
(Y2) Plants Pupils should be taught to observe and describe how seeds and bulbs grow into mature plants	Where Does Our Food come from?	Cycle B, Summer 1st Half
Y2Pupils should be taught to find out and describe how plants need water, light and a suitable temperature to grow and stay healthy	Where Does Our Food come from?	Cycle B, Summer 1st Half
Y2 Animals, including humans Pupils should be taught to notice that animals, including humans, have offspring which grow into adults	How Can I Stay Healthy?	Cycle B, Summer 2nd Half
Y2 Pupils should be taught to find out about and describe the basic needs of animals, including humans, for survival (water, food and air)	How Can I Stay Healthy? & What's It Like to be an Astronaut?	Cycle B, Summer 2nd Half & Cycle A, Spring 1st Half
Y2 Pupils should be taught to describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	How Can I Stay Healthy? & What's It Like to be an Astronaut?	Cycle B, Summer 2nd Half & Cycle A, Spring 1st Half
Y2 Uses of everyday materials Pupils should be taught to identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses	How Do We Keep Our Coasts Safe? *Lighthouses Topic* & How Do You Look After A Penguin?	Cycle A, Autumn 1st Half & Cycle B, Spring 1st Half
Y2 Pupils should be taught to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching	What's Making All That Noise?	Cycle B, Autumn 2nd Half

SCIENCE : LOWER KEY STAGE TWO – The Innovators		
Subject Content from Programme of Study	**STEAM Topic Title & Outcome**	**When will pupils be taught this?**
Y3 Plants Pupils should be taught to identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers	How Can We Manage Our Waste? - Paradise from a Wasteland (Tin Forest Topic)	Innovators- Cycle B, Summer 1st Half
+Y3 Pupils should be taught to 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		
+Y3 Pupils should be taught to investigate the way in which water is transported within plants		
+Y3 Pupils should be taught to explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.	Why Do Bees Fly? (mini topic)	Innovators- Cycle A, Summer 2nd Half
Y3 Animals, including humans Pupils should be taught to 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	How Can I Stay Fit and Healthy? (Whole School Mini Topic)	Innovators- Cycle A, Summer 2nd Half
+Y3 Pupils should be taught to identify that humans and some other animals have skeletons and muscles for support, protection and movement.		
Y3 Rocks Pupils should be taught to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties	What Secrets Are Hidden Within Rocks?	Innovators- Cycle B, Spring 2nd Half
+Y3 Pupils should be taught to describe in simple terms how fossils are formed when things that have lived are trapped within rock		
+Y3 Pupils should be taught to recognise that soils are made from rocks and organic matter.		
Y3 Light Pupils should be taught to recognise that they need light in order to see things and that dark is the absence of light	What Time Is It?	Innovators- Cycle B, Autumn 1st Half
+Y3 Pupils should be taught to notice that light is reflected from surfaces		
+Y3 Pupils should be taught to recognise that light from the sun can be dangerous and that there are ways to protect their eyes		

+Y3 Pupils should be taught to recognise that shadows are formed when the light from a light source is blocked by a solid object		
+Y3 Pupils should be taught to find patterns in the way that the size of shadows change.		
Y3 Forces and magnets Pupils should be taught to compare how things move on different surfaces	Who Were the People Behind the Scenes of Modern Aviation?	Innovators- Cycle A, Spring 1st Half
+Y3 Pupils should be taught to notice that some forces need contact between two objects, but magnetic forces can act at a distance	How Do You Join Things Together?	Innovators- Cycle B Spring 1st Half
+Y3 Pupils should be taught to observe how magnets attract or repel each other and attract some materials and not others		
+Y3 Pupils should be taught to 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		
+Y3 Pupils should be taught to describe magnets as having two poles		
+Y3 Pupils should be taught to predict whether two magnets will attract or repel each other, depending on which poles are facing.		
Y5 Forces Pupils should be taught to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Who Were the People Behind the Scenes of Modern Aviation?	Innovators- Cycle A, Spring 1st half
+Y5 Pupils should be taught to identify the effects of air resistance friction, that act between moving surfaces	Who Were the People Behind the Scenes of Modern Aviation? *Air resistance*	Innovators- Cycle A, Spring 1st half
Y4 Animals, including humans Pupils should be taught to describe the simple functions of the basic parts of the digestive system in humans	What Should We Eat and How Can We Stay Healthy?	Innovators- Cycle B, Summer 2nd Half
+Y4 Pupils should be taught to identify the different types of teeth in humans and their simple functions		
+Y4 Pupils should be taught to construct and interpret a variety of food chains, identifying producers, predators and prey		
Y4 States of matter Pupils should be taught to compare and group materials together, according to whether they are solids, liquids or gases	Water, Water Everywhere but None of it to Drink	Innovators- Cycle A, Autumn 1st Half

+Y4 Pupils should be taught to 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)		
+Y4 Pupils should be taught to identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.		
Y4 Sound Pupils should be taught to identify how sounds are made, associating some of them with something vibrating	How is Technology Used to Communicate? *NB- Sound, the Ear & Electrical Circuits all in the same topic.*	Innovators- Cycle B, Autumn 2nd half
+Y4 Pupils should be taught to recognise that vibrations from sounds travel through a medium to the ear		
+Y4 Pupils should be taught to find patterns between the pitch of a sound and features of the object that produced it		
+Y4 Pupils should be taught to find patterns between the volume of a sound and the strength of the vibrations that produced it		
+Y4 Pupils should be taught to recognise that sounds get fainter as the distance from the sound source increases.		
Y4 Electricity Pupils should be taught to identify common appliances that run on electricity		
+Y4 Pupils should be taught to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers		
+Y4 Pupils should be taught to 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.		
+Y4 Pupils should be taught to recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit		
+Y4 Pupils should be taught to recognise some common conductors and insulators, and associate metals with being good conductors.		

SCIENCE : UPPER KEY STAGE TWO – The Pioneers		
Subject Content from Programme of Study	**STEAM Topic Title & Outcome**	**When will pupils be taught this?**
Y5 Living thing and their habitats Pupils should be taught to describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird	What's in the Woods? *If you go down to the woods today….*	Pioneers- Cycle A, Spring 2nd Half
+Y5 Pupils should be taught to describe the life process of reproduction in some plants and animals.	What's in the Woods? *If you go down to the woods today….* How Can I Grow Fit & Healthy? *Growing & Changing (RE)*	Pioneers- Cycle A, Spring 2nd Half (Plants & Animals) Pioneers- Cycle B, Summer 2nd Half (human reproduction)
Y5 Animals, including humans Pupils should be taught to describe the changes as humans develop to old age.	How Can I Grow Fit & Healthy *Growing & Changing (RE)*	Pioneers- Cycle B, Summer 2nd Half (human reproduction)
Y5 Forces Pupils should be taught to explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object	Who Were the People Behind the Scenes of Modern Aviation?	Innovators- Cycle A, Spring 1st half
+Y5 Pupils should be taught to identify the effects of air resistance, water resistance and friction, that act between moving surfaces	Who Were the People Behind the Scenes of Modern Aviation? *Air resistance* What Makes it Wheelie Fast? *Air and water resistance and friction*	Innovators- Cycle A, Spring 1st half Pioneers- Cycle B Summer 1st Half
+Y5 Pupils should be taught to recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	What Makes it Wheelie Fast?	Pioneers- Cycle B Summer 1st Half
Y5 Properties and changes of materials Pupils should be taught to 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	How Do You Balance things?	Pioneers- Cycle B, Autumn 2nd Half
+Y5 Pupils should be taught to know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution		
+Y5 Pupils should be taught to use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating		

+Y5 Pupils should be taught to demonstrate that dissolving, mixing and changes of state are reversible changes		
+Y5 Pupils should be taught to give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic	How Do you Build A ____?	Pioneers- Cycle A, Autumn 1st Half
+Y5 Pupils should be taught to 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.		
Y5 Earth and space Pupils should be taught to describe the movement of the Earth, and other planets, relative to the Sun in the solar system	How Could Other Planets Be Habitable for Humans?	Pioneers, Cycle A, Spring 1st half
+Y5 Pupils should be taught to describe the movement of the Moon relative to the Earth		
+Y5 Pupils should be taught to describe the Sun, Earth and Moon as approximately spherical bodies		
+Y5 Pupils should be taught to use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.		
Y6 Living things and their habitats Pupils should be taught to 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	What Impact Does Tourism Have On Us?	Pioneers Cycle B, Spring 1st Half
+Y6 Pupils should be taught to give reasons for classifying plants and animals based on specific characteristics.		
Y6 Animals, including humans Pupils should be taught to identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood	How Can I Stay Fit & Healthy? *Including the Heart & circulatory system. & The Nansledan Olympics*	Pioneers Cycle A, Summer 2nd Half
+Y6 Pupils should be taught to recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function		
+Y6 Pupils should be taught to describe the ways in which nutrients and water are transported within animals, including humans.		
Y6 Evolution and inheritance Pupils should be taught to recognise		Pioneers Cycle A, Summer 1st Half

that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago	What Has Been Discovered by Voyages? *Evolution & Maritime Topic*	
+Y6 Pupils should be taught to recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents		
+Y6 Pupils should be taught to identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.		
Y6 Electricity Pupils should be taught to associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit	How Can We Prepare for the Future? *Renewable Energy and becoming Carbon Neutral*	Pioneers Cycle A, Autumn 2nd Half
+Y6 Pupils should be taught to 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		
+Y6 Pupils should be taught to use recognised symbols when representing a simple circuit in a diagram.		
Y6 Light Pupils should be taught to recognise that light appears to travel in straight lines	What is Light and What Exactly is a Black Hole?	Pioneers- Cycle B, Autumn 1st half
+Y6 Pupils should be taught to 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		
+Y6 Pupils should be taught to 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		
+Y6 Pupils should be taught to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.		