Science Long Term Map 24/25

Biology =
Chemistry =
Physics =

Intent – *We want our pupils to have a basic understanding of fundamental scientific concepts and processes relating to the natural world, physical forces and chemical changes which impact on daily life and for them to develop a curiosity of the world around them. Through this it will reinforce the understanding of cause and effect and also of unintended consequences. We aim to maximise their opportunities for practical experimentation and direct observations.*

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Step 0 **Scientific Vocabulary:** *question, find out, observe, describe, test, compare, measure, length, height, mass/weight, time, temperature, record, results, table, chart, pictograph, block graph, bar chart*	**How do plants grow** What is a seed? What stages do plants go through when growing? What happens if a plant gets no light? What happens if a plant doesn't get any food? **Vocabulary:** *Seeds, bulbs, grow, healthy, water, light, temperature, soil, nutrients,* **CC Links:** Geography Steps 1 – North Pole, Geography Steps 1 – My Local Area	**What are the main parts of my body?** What are the different parts of my body? If all bodies are the same how am I different? What can I measure on my body? How the adults in my class different to me? How are my features different? Can I predict how tall I will be when I am 18? **Vocabulary:** *Arm, hand, leg, ear, hair, mouth, eye, head, neck, foot, knee, nose*	**Why do we need to cook our food?** How do some foods change when they are heated? Why do we have to cook some foods? What foods can we mix together to make a new food? If we mix so foods can we separate them again? (Reversible and Irreversible) **Vocabulary:** *Whisk, bowl, spoon, knife, fork, jug, egg, oven, microwave, mix, turn, beat, hot, cold, cooking, apron, milk, cut, sift, sprinkle, hob, grate, slice, pour, chop, knead, blend, weigh, melt, stir* **CC Links:** Geography Steps 1 – North Pole	**How do we classify materials?** Can we classify things in the classroom? (In the categories Metal / Glass / Wood / Fabrics / Plastic?) What is breakable in the class? Why? What is unbreakable in the class? Why? What materials would we use to make a toy? Why are the windows not made of wood? Why are our clothes made of fabrics? **Vocabulary:** *Wood, plastic, glass, metal, water, rock, hard, soft, rubber, paper, fabric, brick, wool, classify*	**Why does it get dark at night?** How does the sun light the Earth? Why is it day time here but night time in Australia? Why do I have a shadow on a sunny day? How did people see at night in the past? **Vocabulary:** *sun, moon, sky, night, light dark, stars, clouds, shadow, morning, afternoon, evening, Summer, Winter, Autumn, Spring* **CC Links:** Geography Steps 1 – North Pole, Geography Steps 1 – My Local Area History Steps 2 - Romans	**Why does my tall tower fall over?** (Practical) How high can I build a tower before it falls over? Why did my tower fall over? How do the foundations of my tower affect how tall my tower is? Does the material I used affect my tower? How are the tallest buildings in the world built? D and T **Vocabulary:** *Build, design, tower, material, plan, challenge, blocks, structure, vertical, architect* **CC Links:** DT – Steps 2 – Fairground Wheels

	History Steps 2 - Romans History Steps 2 – Vikings History Steps 4 – The Great Fire RE Steps 0 – Creation Story RE Steps 0 – Noah and the Ark RE Steps 1 - Christmas Computing Steps 4 – Investigating Weather	**CC Links:** Geography Steps 1 – North Pole Geography Steps 4 – Brazil Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 1 – When my grandparents were young History Steps 5 – The Black Death DT – Healthy Eating (all stepss) RE Steps 0 – Creation Story Computing Steps 1 – Data (Animals) Music Steps 1 - Animals Art Steps 2 – Sculpture	Geography Steps 4 – Damaging the World Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 4 – The Great Fire DT – Healthy Eating (all stepss)	**CC Links:** Geography Steps 1 – My Local Area Geography Steps 2 – Angry Earth History Steps 1 – Romans History Steps 1 - Grandparents History Steps 2 – Ancient Egypt History Steps 3 – Mayans History Steps 4 – The Great Fire DT Steps 1 – Puppets DT Steps 2 – Fairground Wheels DT Steps 3 – Static Electricity DT Steps 4 – Slingshot Cars DT Steps 5 – Electronic Cards RE Steps 0 – Creation Story RE Steps 0 – Noah and the Ark RE Steps 1 – Christmas Computing Steps 1 – Rockets	History Steps 2 – Vikings History Steps 2 – Ancient Egypt History Steps 3 – The Mayans History Steps 4 – The Great Fire RE Steps 0 – Creation Story RE Steps 0 – Noah and the Ark RE Steps 1 - Christmas Computing Steps 1 – Media (Rockets) Computing Steps 2 – Rocket to the Moon Computing Steps 4 – Mars Rover Computing Steps 4 – Investigating Weather Music Steps 2 - Space Art Steps 5 – Photography	

Step 1	**Plants and Humans** Is a car alive?	**Chemical Changes** Why does my ice lolly melt?	**Push and Pull** Why does a stone fall quicker than a feather?	**Seasonal Changes** Why does our tree change throughout the year?	**Materials** Why are most houses made of brick?
Scientific Vocabulary (To be used across all topics) *question, answer, observe, equipment, sort, group, compare, differences, similarities, describe, measurements, test, results, secondary sources* *record – diagram, chart*	What do I need to stay alive? What does a puppy need to feel good? What do I need to feel good? What does a plant need to have to stay alive? What does a car do that I don't? What does a car do that I can? Can I classify the animate and inanimate? **Vocabulary:** *Movement, respiration, sensitivity, growth, reproduction, excretion, nutrition, carnivores, herbivores, omnivores, survival. Water, food, air, exercise, hygiene, vitamins, minerals, fat, protein, carbohydrates, fibre, compare* **CC Links:** Geography Steps 1 – North Pole Geography Steps 4 – Brazil Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 1 – When my grandparents were young History Steps 5 – The Black Death DT – Healthy Eating (all stepss) RE Steps 0 – Creation Story Computing Steps 1 – Data (Animals) Music Steps 1 - Animals Art Steps 2 – Sculptur	*What happens when I heat things?* *What happens when I freeze things?* *What happens when I add a chemical to a mixture?* *Do I know that some changes are reversible and some are irreversible?* **Vocabulary:** *Solid, liquid, gas, melt, freeze, temperature, condensation, process, ice, heat, materials* **CC Links:** Geography Steps 1 – North Pole Geography Steps 4 – Damaging the World Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 4 – The Great Fire DT – Healthy Eating (all stepss)	Why can I run faster downhill? Which toy will travel the furthest? How can I keep things afloat? Why can I pick up pins with a magnet? **Vocabulary:** *Push, pull, faster, slower, magnet, force, magnetic, surface, float, sink,* **CC Links:** History Steps 2 – Ancient Egypt History Steps 3 - Mayans. DT Steps 4 – Slingshot Cars	What are the key features of the 4 seasons in Enfield? How do the seasons affect what I eat and wear? How do the seasons affect our tree? **Vocabulary:** *Spring, Summer, Autumn, winter, thermometer, changes, day, night, day length, weather, temperature, season, week, month, year, moon* **CC Links:** Geography Steps 1 – North Pole, Geography Steps 1 – My Local Area History Steps 2 - Romans History Steps 2 – Vikings History Steps 4 – The Great Fire RE Steps 0 – Creation Story RE Steps 0 – Noah and the Ark RE Steps 1 - Christmas Computing Steps 4 – Investigating Weather	What materials can we build house from? Why? What materials can we not build houses from. Why? What is the best material to cover my ears with? (ear defenders) Which material should I clean up a spill with? **Vocabulary:** *Materials, shape, suitability, squashing, bending, twisting, stretching, reflective similarities, differences, wood, metal, plastic, glass, brick, rock, paper, cardboard, uses, transparent, opaque, translucent, flexible, stiff, strong, brittle* **CC Links:** Geography Steps 1 – My Local Area Geography Steps 2 – Angry Earth History Steps 1 – Romans History Steps 1 - Grandparents History Steps 2 – Ancient Egypt History Steps 3 – Mayans History Steps 4 – The Great Fire

					DT Steps 1 – Puppets DT Steps 2 – Fairground Wheels DT Steps 3 – Static Electricity DT Steps 4 – Slingshot Cars DT Steps 5 – Electronic Cards RE Steps 0 – Creation Story RE Steps 0 – Noah and the Ark RE Steps 1 – Christmas Computing Steps 1 – Rockets

Step 2	**The human body** How does my body work?	**The planets** Could I live on Mars?	**Solids, Liquids, Gases** What am I breathing?
Scientific Vocabulary (To be used across all topics) *question, answer, observe, observing, equipment, identify, sort, group, compare, differences, similarities, describe, measurements, test, results,* *record – diagram, chart*	What are the major organs in my body? What do they do? What are the 5 senses and how do they help me? What does my body need to stay healthy? How does blood travel through my body? How does food travel through my body? **Vocabulary:** nutrition, vitamins, minerals, fat, protein, carbohydrates, fibre, water, skeletons – support, protection, skull – brain, ribs – heart, lungs, movement, diet, digestive system, tongue, teeth, oesophagus, stomach, acids, enzymes, small intestine, large intestine, veins, artery, bloody, vessels sight, taste, hear, touch, smell **CC Links:** Geography Steps 4 – Brazil Geography Steps 5 - Humans Damaging the World History Steps 2 – Ancient Egypt History Steps 3 – Henry VIII History Steps 5 – World War II History Steps 5 – The Black Death DT – Healthy Eating (all stepss)	Where am I in the solar system? Why do we have night and day? What other planets are in the solar system? Could I live on any other planets in the solar system? What would I need to travel to the moon? **Vocabulary:** *Planets, solar system, Sun, moon, Mercury, Venus, Mars, Jupiter, Saturn, Neptune, Uranus (Pluto), night, day, Earth, solar system, axis of rotation, stepss of the moon, star, constellation* **CC Links:** History Steps 2 – Ancient Egypt History Steps 3 – The Mayans Computing Steps 1 – Media (Rockets) Computing Steps 2 – Rocket to the Moon Computing Steps 4 – Mars Rover RE Steps 0 – Creation Story Music Steps 2 - Space Art Steps 5 – Photography	What am I breathing in every day? What am I breathing out every day? How do trees help me breathe? What are the problems with cows (methane)? What makes sand a solid? What makes syrup a liquid? What makes smoke a gas? **Vocabulary:** *opinion/fact, variables, accuracy, precision, enquiry, solution, soluble, insoluble, new material, solid, liquid, gas, mixture, reversible, irreversible, evaporation, reaction* **CC Links:** Geography Steps 4 – Damaging the World Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 4 – The Great Fire

Step 3 **Scientific Vocabulary** (To be used across all topics) *conclusion, predictions, criteria, classify, changes, data, contrast, evidence, improve, secondary sources, guides, keys, construct, interpret research – relevant question equipment – thermometer, data – gather, standard units, record, classify, present record – drawings, labelled diagrams, keys, bar charts, tables*	**Risks to the Human Body** How can I live to be 100? Why should I have a balanced diet? How much sleep do I need every night? Why do I need exercise? Why should I look after myself? (dental hygiene, hygiene, germs?) **Vocabulary:** *nutrition, vitamins, minerals, fat, protein, carbohydrates, fibre, water,* **CC Links:** Geography Steps 4 – Brazil Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 5 – World War II History Steps 5 – The Black Death RE Steps 0 – Creation Story DT – Healthy Eating (all stepss) **BV Links** The rule of law Controversial issues and safe space for debate	**Sound** Why can I hear things that I can't see? What are vibrations? How do vibrations affect the pitch of a sound? Why can I not hear someone as well if they are in the next room? What is 'soundproofing' and who might use it? How does my ear work? If I shout underwater what will happen? **Vocabulary:** *vibration, wave, volume, pitch, tone, insulation* **CC Links:** Computing Steps 4 – Programming Music RE Steps 0 – Creation Story Music – All Stepss	**Water Cycle** How does it work? Why can't I drink sea water? Why is my tap water safe to drink? Where do puddles disappear to? What do you think it would be like to live without easy access to clean water? (Water Aid) **Vocabulary:** *Evaporations, condensation, precipitation, collection, clouds, rain, sleet, hail snow, salt water, filtration* **CC Links:** Geography Steps 3 – Cities built on River Banks Geography Steps 4 – Damaging the World Geography Steps 5 – China Geography Steps 5 - Humans Damaging the World History Steps 2 – Ancient Egypt History Steps 2 – The Vikings History Steps 3 – The Mayans RE Steps 0 – Creation Story RE Steps 0 – Noah and the Ark Music Steps 4 – Rivers Art Steps 1 – Beach Painting

Steps 4	**Food and the Human Body** Am I top of the food chain?	**Power (Light/Electricity)** What happens when I turn my light on?	**Chemical Changes - 2** How can I keep my hot chocolate warm in winter?
Scientific Vocabulary (To be used across all topics) *conclusion, predictions, criteria, classify, changes, data, contrast, evidence, improve, secondary sources, guides, keys, construct, interpret research – relevant question equipment – thermometer, data – gather, standard units, record, classify, present record – drawings, labelled diagrams, keys, bar charts, tables*	How does a plant eat without a mouth? Am I a predator or prey? Do all animals eat meat? Why are my teeth different to a sharks? **Vocabulary:** *Teeth, incisors, canines, molars, nutrition, diet, lungs, movement, joint, muscles, movement, pull contract, relax, exercise, lifestyle, vitamins, minerals, fat, protein, carbohydrates, fibre* **CC Links:** History Steps 3 – Henry VIII History Steps 5 – World War II Geography Steps 4 – Damaging the World Geography Steps 5 – China DT – Healthy Eating (all stepss) RE Steps 0 – Noah and the Ark Music Steps 1 – Animals Computing Steps 1 – Data (Animals)	What are the main sources of power in my house and community? How does a battery power a lightbulb? Can a potato conduct electricity? **Vocabulary:** *Electricity, generated, bulbs, batteries, circuit, switch, conductor, renewable energy, appliance, battery power, main power, circuit, series, cell, battery, wire, bulb, switch, break in circuit, insulator, amp, volts, voltage* **CC Links:** Geography Steps 4 – Damaging the World Geography Steps 5 – China, Humans Damaging the World DT Steps 3 – Static Electricity DT Steps 5 – Electronic Cards Computing (All Stepss)	Where does my hot chocolate go when I add it to hot water? Where do puddles go when the sun comes out? Why does my metal spoon get hot after I've stirred my hot chocolate? How can I keep my drink warm when it's cold outside? **Vocabulary:** *solid, liquid, gas, evaporation, condensation, particle, temperature, freezing, heating* **CC Links:** History Steps 4 – The Great Fire

Steps 5	**Evolution of the Human Body** Am I the same as early man?	**Power (Our Environment)** Can I help save the planet?	**Chemicals (Our Environment)** Will Australia soon be uninhabitable for humans and wildlife?
Scientific Vocabulary (To be used across all topics) *plan, variables, measurements, accuracy, precision, repeat readings, predictions, further comparative and fair test, identify, classify and describe, patterns, systematic, report data – scientific diagrams, labels, classification keys, tables, bar graph and line graphs report and present – conclusions, explanations, evidence – support, refute, ideas or arguments, biology, physics, chemistry*	What does early man look like and how has he changed? How does my life cycle differ to that of frogs (3 lessons) Why have so many pop stars died at 27? (dangers to the body – physical and mental health) **Vocabulary:** *support, protection, brain, heart, lungs, muscles, diet, digestive system, tongue, teeth, oesophagus, stomach, acids, enzymes, small intestine, large intestine, veins, artery, bloody, vessels, reproduction, genetics, survival, adaptation, evolution, characteristics* **CC Links:** DT – Healthy Eating (all stepss) RE Steps 0 – Creation Story **BV Links** Controversial issues and safe space for debate	What are the cleanest and most sustainable sources of energy? Where do they come from? What are the most polluting and/or dangerous sources of energy? How can I reduce my carbon footprint? **Vocabulary:** *Solar power, hydroelectric power, wind power, gas, electricity, nuclear, renewable, non-renewable, pollution, global warming, environment* **CC Links:** Geography Steps 5 – China, Humans Damaging the World DT Steps 3 – Static Electricity DT Steps 5 – Electronic Cards RE Steps 0 – Noah and the Ark **BV Links** The rule of law Controversial issues and safe space for debate Democracy	What are the main ecosystems in Australia? What are the threats to each ecosystem in Australia? Will polar bears disappear from the Arctic? **Vocabulary:** *Global warming, climate change, fossil fuels, carbon dioxide, greenhouse effect, atmosphere, impact, sustainable* **CC Links:** Geography Steps 4 – Damaging the World Geography Steps 5 – China, Humans Damaging the World RE Steps 0 – Noah and the Ark **BV Links** The rule of law Controversial issues and safe space for debate Democracy