





# Lyppard Lock-Ins Science

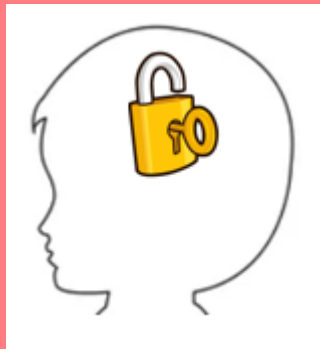


Lyppard Lock-ins represent the key disciplinary knowledge and substantive skills which we target for retrieval and assessment purposes. They are drawn from the full progression documents provided in the National Curriculum and Kapow. In addition to the lock-ins, all pupils are also working on Scientific skills (working scientifically, questioning and enquiry, observation and measuring, investigating, recording and grouping and classifying) which also build progressively.

<p><b>EYFS</b></p>	<p>Children in EYFS begin the foundations of science through their work on Understanding of the world. Understanding of the world involves guiding children to make sense of their physical world and their community.</p> <p><b>Children in EYFS need to:</b></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Care for the natural world around them.</li> <li>• Draw pictures of the natural world</li> </ul> <p>• Observe and interact with natural processes, such as ice melting, a sound causing a vibration, light travelling through transparent material, an object casting a shadow, a magnet attracting an object and a boat floating on water.</p> <p><b>Children in EYFS will be learning to:</b></p> <ul style="list-style-type: none"> <li>• Describe what they see, hear and feel whilst outside</li> </ul> <p>• Describe and comment on things they have seen whilst outside, including plants and animals</p> <ul style="list-style-type: none"> <li>• Begin to recognise familiar plants and animals whilst outside.</li> </ul> <p>• Understand the effect of changing seasons on the natural world around them and begin to notice weather and seasonal features</p>			
<p><b>Year 1</b></p> 	<p><b>Unit 1- Plants</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Know that seeds and bulbs can grow into mature plants.</li> <li>• Understand difference between deciduous and evergreen trees</li> <li>• Name some of the basic parts of trees and plants (stem, petals, leaves, roots, trunk and branches)</li> </ul>	<p><b>Unit 2- Animals including humans</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Name a variety of common animals including fish, reptiles, amphibians, birds and mammals</li> <li>• Understand difference between carnivores, herbivores and omnivores and explain what they eat</li> <li>• Draw and label basic parts of the human body and which sense it is associated with.</li> <li>• Know that mammals have fur and give birth to live young</li> <li>• Know that birds have feathers and lay eggs</li> <li>• Know that reptiles have dry, scaly skin and lay eggs</li> <li>• Know that fish live in water, lay eggs and have gills to breathe</li> <li>• Know that insects have 6 legs, most have wings</li> </ul>	<p><b>Unit 3- Materials</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Identify and name a variety of everyday materials</li> <li>• Describe the simple physical properties of materials</li> <li>• Compare and group together variety of materials based on their properties</li> </ul>	<p><b>Unit 4- Seasonal Changes</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Know the name of the 4 seasons and explain some of the changes that we might see in each season.</li> <li>• Know that our days of sunlight are longest in the summer and shorter in the winter.</li> </ul>
	<p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Deciduous and evergreen trees</li> <li>• Leaves, flowers, petals, fruit, roots, bulb, seeds, trunks, branches, stem</li> </ul>	<p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Reptiles, mammals, birds, fish, amphibians</li> <li>• Herbivore, carnivore, omnivore</li> <li>• Leg, arm, elbow, head, ear, nose, back, wings, beak</li> </ul>	<p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Wood, plastic, glass, paper, water</li> <li>• Metal, rock, hard, soft, bendy, rough, smooth</li> </ul>	<p><b>Key Vocabulary:</b></p> <ul style="list-style-type: none"> <li>• Summer, spring, autumn, winter</li> <li>• Sun, moon, night, light, dark, day</li> </ul>
	<p><b>Linked learning:</b> EYFS- What plants need to grow Forest school- observing seasonal changes. Showing care for our natural environment Growing seeds</p>	<p><b>Linked learning:</b> EYFS- Minibeasts Human body- identifying some of the main parts of the body- PE</p>	<p><b>Linked learning:</b> Common materials and their properties EYFS</p>	<p><b>Linked learning:</b> Seasonal changes EYFS- observing changes through the seasons Forest school Can name the 4 seasons and some of the things we might expect to see in each season.</p>
<p><b>Year 2</b></p> 	<p><b>Unit 1- Plants</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Explain the lifecycle of a plant</li> <li>• Seed- life cycle starts with a seed</li> <li>• Germination- when a seed is planted into moist soil it starts to grow</li> <li>• Seedling- young plant growing is called a seedling</li> <li>• Adult plant- when a plant becomes mature it starts to grow/flower</li> <li>• Explain how plants need water, light and suitable temperature to stay healthy</li> </ul>	<p><b>Unit 2- Animals including humans</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Understand that animals, including humans have offspring which grow into adults</li> <li>• Understand the basic needs of animals and humans for survival (water, food, air and shelter)</li> <li>• Explain how exercise, food and hygiene are important for staying healthy</li> <li>• Know the main food groups and some of the foods within them</li> </ul>	<p><b>Unit 3- Materials</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Know that different materials have different properties, e.g. waterproof</li> <li>• Explain whether a material is suitable for a purpose based on its properties</li> <li>• Know that forces can change shape of some materials. Understand how the shape of solid objects can be changed by squashing, bending, twisting and stretching</li> <li>• Explain what is meant by the terms Transparent/ Opaque/ Translucent</li> <li>• Explain the difference between Man-made/ natural and give some examples of both.</li> </ul>	<p><b>Unit 4- Living things in their habitats</b></p> <p><b>Key</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>• Explore and compare the differences between things that are living, dead, and things that have never been alive.</li> <li>• Explain the different types of Habitats/ microhabitats and some of the animals that might be found in them (desert, meadow, woodland, grassland, forest, seashore, ocean)</li> <li>• Explain how different habitats provide for the basic needs of plants and animals</li> <li>• Understand microhabitats and plants and animals found in them</li> <li>• Understand how animals obtain their food from plants and other animals</li> </ul>

<p><b>Key Vocabulary:</b></p> <p>Seeds, Bulbs, Water, Light, Temperature, Growth</p>	<p><b>Key Vocabulary:</b></p> <p>Survival, Water, Air, Food, Adult, Baby, Offspring, Kitten, Calf, Puppy, Exercise, Hygiene</p>	<p><b>Key Vocabulary:</b></p> <p>Hard, Soft, Stretchy, Stiff, Shiny, Dull, Rough, Smooth, Bendy, Waterproof, Absorbent, Opaque, Transparent, Brick, Paper, Fabrics, Squashing, Bending, Twisting, Stretching Elastic, Foil</p>	<p><b>Key Vocabulary:</b></p> <p>Living, Dead, Habitat, Energy, Food chain, Predator, Prey, Woodland, Pond, Desert</p>
<p><b>Linked learning:</b></p> <p>Y1- Knowing the parts of the plant and how they grow</p>	<p><b>Linked learning:</b></p> <p>Y1- be able to name a variety of different animals. Understand the difference between animals and humans</p>	<p><b>Linked learning:</b></p> <p>Y1- explain what material an object is made from. Name a variety of every day materials and some of their properties Begin to compare and group together materials</p>	<p><b>Linked learning:</b></p> <p>Y1- Name a variety of common animals including fish, amphibians, reptiles, birds and mammals Explain what a carnivore, herbivore and omnivore eats Draw and label the basic parts of human body and explain how they are associated with the 5 senses.</p>

**Year 3**

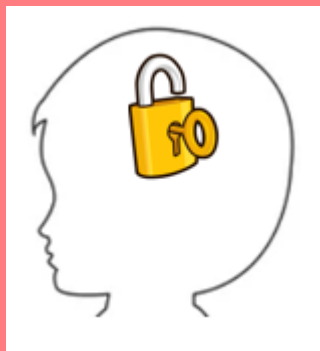


<p><b>Unit 1- Plants</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Understand that roots sit below the soil and helps to anchor the plant and gather nutrients from the soil.</li> <li>Know that the stem carries water and nutrients to different parts of the plant and provides support and keeps the plant standing upright.</li> <li>Know that leaves make food for the plant using sunlight and carbon dioxide from the air</li> <li>Know that some plants have flowers which produce seeds for new plants.</li> <li>Explain the lifecycle of flowering plants</li> <li>Explain pollination</li> </ul>	<p><b>Unit 2- Animals including humans</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Understand the different food groups and their importance in staying healthy.</li> <li>Explain the functions of fruit and vegetables- vitamin C immunity, fibre- digestion, carbohydrates- energy, proteins- muscle growth and repair, dairy- strong bones and teeth, fats and oils- energy</li> <li>Understand humans don't make their own food but get it from the food they eat.</li> <li>Explain the importance of a skeleton and muscles</li> </ul>	<p><b>Unit 3- Rocks</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Understand the different types of rock (sedimentary, metamorphic and igneous)</li> <li>Explain how a fossil is formed</li> <li>Explain how soil is made</li> </ul>	<p><b>Unit 4- Forces and magnets</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Explain their understanding of friction</li> <li>Understand what is meant by magnetism</li> <li>Explain how some forces need contact between two objects, but magnets can act at a distance</li> <li>Know that magnets attract and repel based on their north and south poles</li> <li>Know that pushes and pulls are 2 types of forces.</li> </ul>	<p><b>Unit 5- Light</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Explain how light is reflected from surfaces</li> <li>Explain how shadows are formed</li> <li>Express the dangers of sunlight and how we can protect their eyes</li> <li>Know that light is needed to see</li> </ul>
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<p><b>Key Vocabulary:</b></p> <p>Air, Light, Water, Nutrients, Soil, Reproduction, Transportation, Dispersal, Pollination, Flower</p>	<p><b>Key Vocabulary:</b></p> <p>Movement, Muscles, Bones, Skull, Nutrition, Skeletons</p>	<p><b>Key Vocabulary:</b></p> <p>Fossils, Soils, Sandstone, Granite, Marble, Pumice, Crystals, Absorbent, Igneous, Metamorphic, Sedimentary</p>	<p><b>Key Vocabulary:</b></p> <p>Magnetic, Force, Contact, Attract, Repel, Friction, Poles, Push, Pull</p>	<p><b>Key Vocabulary:</b></p> <p>Light, Shadows, Mirror, Reflective, Dark, Reflection</p>
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<p><b>Linked learning:</b></p> <p>EYFS- Developing an understanding of growth/decay and changes over time. Growing seeds.</p> <p>Y1- 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.</p> <p>Y2-Observe and describe how seeds and bulbs grow into mature plants. Explore what plants need for survival</p>	<p><b>Linked learning:</b></p> <p>Y1- identify and name variety of animals, including, fish, reptiles, amphibians, mammals, birds and insects and label some of their body parts.</p> <p>Y2-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</p>	<p><b>Linked learning:</b></p> <p>Y1 and 2- properties of materials</p> <p>Year 6- fossils, evolution and inheritance</p>	<p><b>Linked learning:</b></p> <p>EYFS- Floating and sinking</p> <p>Year 5- forces- gravity, air resistance and water resistance</p>	<p><b>Linked learning:</b></p> <p>Y6- light, travelling in straight lines. Investigating size and shape of shadows.</p>
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**Year 4**



<p><b>Unit 1- Living things in their habitat</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Use classification keys</li> <li>Explain how environments can change and the dangers this poses</li> </ul>	<p><b>Unit 2- Animals including humans</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Explain how the digestive system works</li> <li>Identify the different types of teeth and their functions</li> <li>Create food chains, identifying producers, predators and prey</li> </ul>	<p><b>Unit 3- States of matter</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Explain the differences between solids, liquids and gases</li> <li>Explain how materials can change state and the processes involved</li> <li>Explain how the water cycle works Collection- where water is collected</li> </ul>	<p><b>Unit 4- Sound</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Explain how sound is made with vibrations</li> <li>Understand how sounds get fainter as the distance from the sound source increases (Activity to do - Bang a drum and get others to stand at the end of the field and hands up</li> </ul>	<p><b>Unit 5 - Electricity</b></p> <p><b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do?</p> <ul style="list-style-type: none"> <li>Construct a simple series circuit identifying and naming the basic parts (cells, wires, bulbs, switches and buzzers)</li> <li>Know that a battery is a source of energy – battery pushes the voltage around the circuit</li> </ul>
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			such as lakes, rivers, seas Evaporation- water heats up changing to a gas and evaporating into the air. Condensation- gases cool and turn back into a liquid forming clouds Precipitation- when clouds become too heavy rain, sleet or snow is released.	when they can hear it!) • Skipping ropes with vibrations. • Things that do and don't vibrate – smack a table, smack a drum! • Explain what is meant by pitch and volume and how these can be changed	<ul style="list-style-type: none"> <li>Name the basic components in a circuit</li> <li>EDIT - Explain what is meant by conductors (material that allows electricity so pass through it easily) and insulators (material that does not allow electricity to pass through it easily) and name some examples</li> </ul> Explain how a switch works – open/ close
	<b>Key Vocabulary:</b>  <b>Vertebrates, Fish, Amphibians, Reptiles, Birds, Mammals, Invertebrates, Snails, Slugs, Worms, Spiders, Insects, Environment, Habitats</b>	<b>Key Vocabulary:</b>  Mouth, Tongue, Teeth, Oesophagus, Stomach, Small Intestine, Large intestine, Digestive system, Herbivore, Carnivore, Canine, Incisor, Molar	<b>Key Vocabulary:</b>  Solid, Liquid, Gas, Evaporation, Condensation, Particles, Temperature, Freezing, Heating, Water Cycle	<b>Key Vocabulary:</b>  Volume, Vibration, Wave, Pitch, Tone, Speaker	<b>Key Vocabulary:</b>  Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductor, Insulators
	<b>Linked learning:</b> EYFS- Minibeasts Y1 and 2- Animals and their groups Y3- Nutrition Y5- Life cycles Y6- Classification and evolution and inheritance	<b>Linked learning:</b> Y1- body parts Y6-circulatory and digestive systems and processes	<b>Linked learning:</b> Y2- Properties of materials Y5- separating mixtures	<b>Linked learning:</b>	<b>Linked learning:</b> Y6- circuits
<b>Year 5</b>  	<b>Unit 1- Living things in their habitat</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>describe life cycles of mammals, amphibians, insects and birds</li> <li>explain reproduction of plants</li> <li>Know that there are 6 stages in the human life cycle (foetus, baby, childhood, adolescence, adulthood and old age)</li> </ul>	<b>Unit 2- Materials</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>group together materials based on hardness, solubility, transparency and conductivity</li> <li>investigate process of dissolving and recovering a substance from a solution</li> <li>investigate how mixtures can be separated through filtering, sieving and evaporating</li> <li>know that some changes are reversible and others irreversible and name some examples of each.</li> </ul>	<b>Unit 3- Animals including humans</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>describe the changes as humans develop to old age</li> </ul>	<b>Unit 4- Forces and magnets</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Understand what gravity is</li> <li>Explain the effects of air resistance, water resistance and friction that act between moving objects.</li> <li>Explain how a lever works</li> <li>Explain how pulleys work</li> <li>Explain how gears work</li> <li>Explain how levers, pulleys and gears allow a smaller force to have a greater effect.</li> </ul>	<b>Unit 5-Earth and Space</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Know that the Earth rotates on its axis and it completes one full rotation every 24 hours.</li> <li>Know that the Earth orbits the sun and takes 365 days</li> <li>Understand that it is daylight when the Earth is facing the sun and night-time when it is facing away from the sun.</li> </ul>
	<b>Key Vocabulary:</b>  Mammal, Reproduction, Insect, Amphibian, Bird, Offspring	<b>Key Vocabulary:</b>  Hardness, Solubility, Transparency, Conductivity, Magnetic, Filter, Evaporation, Dissolving, Mixing	<b>Key Vocabulary:</b>  Foetus, Embryo, Womb, Gestation, Baby, Toddler, Teenager, Elderly, Growth, Development, Puberty	<b>Key Vocabulary:</b>  Air resistance, Water resistance, Friction, Gravity, Newton, Gears, Pulleys	<b>Key Vocabulary:</b>  Earth, Sun, Moon, Axis, Rotation, Day, Night, Phases of the Moon, Star, Constellation, Planets
	<b>Linked learning:</b> EYFS- Minibeasts Y1 and 2- Animals and their groups Y3- Nutrition Y6- Classification and evolution and inheritance	<b>Linked learning:</b> Y1- materials and what things are made from Y2- Materials and how they can be changed by bending, squashing	<b>Linked learning:</b> Y4- Digestive system, teeth and food chains	<b>Linked learning:</b> Y3- Forces and magnets	<b>Linked learning:</b> Y1- Seasonal changes Y3- light and shadows Y6- Shadows
<b>Year 6</b>  	<b>Unit 1- Animals including humans</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Name the main parts of the circulatory system</li> <li>Describe the functions of the heart, blood vessels and blood</li> <li>Explain the impact of diet, exercise, drugs and lifestyle and how it affects</li> </ul>	<b>Unit 2- Electricity</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Know an increasing range of components used in a complex circuit and draw the scientific symbols</li> <li>Understand how the brightness of a bulb or the volume of a buzzer changes with the number and</li> </ul>	<b>Unit 3- Evolution and inheritance</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Understand and explain how evolution is the process of living things gradually change over time</li> <li>Understand that evolution happens to a population rather than individual</li> </ul>	<b>Unit 4- Light</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Know that light travels in straight lines</li> <li>Know that light can travel through transparent and translucent materials</li> <li>Know that opaque materials block light causing shadows.</li> </ul>	<b>Unit 5- Living things in their habitat</b> <b>Key Vocabulary:</b> What do we want pupils to know and what do we want pupils to know how to do? <ul style="list-style-type: none"> <li>Explain and begin to use the classification system and understand that Carl Linnaeus created it as a way of identifying animals and plants.</li> <li>Understand the difference between</li> </ul>

		<p>the ways our bodies work</p> <ul style="list-style-type: none"> <li>• Explain how nutrients and water are transported through our bodies.</li> <li>• Explain the meaning of osmosis and diffusion</li> </ul>	<p>voltage of cells used in a circuit</p>	<ul style="list-style-type: none"> <li>• Understand that fossils give us information about living things that were on Earth millions of years ago</li> <li>• Explain how animals are adapted to suit their environments and habitats</li> </ul>		<p>vertebrates and invertebrates</p>
		<p> Key Vocabulary:</p> <p>Circulatory system, Heart, Blood vessels, Veins, Arteries, Oxygenated, Deoxygenated, Valve, Exercise, Respiration</p>	<p> Key Vocabulary:</p> <p>Cells, Wires, Bulbs, Switches, Buzzers, Battery, Circuit, Series, Conductors, Insulators, Amps, Volts, Cell</p>	<p> Key Vocabulary:</p> <p>Fossils, Adaptation, Evolution, Characteristics, Reproduction, Genetics</p>	<p> Key Vocabulary:</p> <p>Refraction, Reflection, Light, Spectrum, Rainbow, Colour</p>	<p> Key Vocabulary:</p> <p>Classification, Vertebrates, Invertebrates, Micro-organisms, Amphibians, Reptiles, Mammals, Insects</p>
		<p> Linked learning:</p> <p>Y2- balanced diet and healthy eating Y3- Nutrition Y4- Digestive system</p>	<p> Linked learning:</p> <p>Y4- Electricity and circuits</p>	<p> Linked learning:</p> <p>EYFS and Y1- Body parts and the 5 senses  Y4- Changing climates</p>	<p> Linked learning:</p> <p>Y3- light and shadows</p>	<p> Linked learning:</p> <p>EYFS- minibeasts Y1- basic animal groups Y2- animal groups Y4- Classification and food chains</p>