	Biology Unit: Living things What does progression of knowledge look like at St Leonard's?
Year	**Progression of knowledge.**
EYFS	• Explore the natural world around them, make observations and draw pictures of animals and plants • Plant seeds and care for growing plants • Understand the key features of the life cycle of a plant and an animal • Begin to understand the need to respect and care for the natural environment and all living things
2	• Identify the differences between things that are living, dead, and things that have never been alive, using some of the 7 life processes (movement, respiration, sensitivity, growth, reproduction, excretion, nutrition) • Identify that most living things live in habitats to which they are suited • Explain in simple terms how an animal or plant is suited to its habitat • Name a variety of plants and animals in their habitats, including micro-habitats • Explain that different conditions in a habitat and micro-habitat can affect the number and type of plants/animals that live there • Describe how plants and animals depend on each other for food and shelter • 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 • Construct a simple food chain that includes humans (e.g. grass, cow, human) with arrows pointing in the correct direction
4	• Know the 7 life processes of living organisms • Use the 7 life processes to determine if an organism is living • Describe similarities and differences between examples of plants and animals • Know the features of mammals, amphibians, fish, birds, reptiles (vertebrates) and invertebrates • Group living things in a variety of ways using key characteristics • Know and explore the work of Carl Linnaeus • Use classification keys to help group and identify a variety of living things in their local and wider environment • Use classification keys to name a variety of living things • Recognise that environments can change, and this can sometimes pose dangers to living things • Understand that human actions can impact the environment and suggest some solutions to the issues.
5	• Know that reproduction is when an animal or plant produces one or more individuals similar to itself • Explain that sexual reproduction requires both male and female DNA (sex cells) and will produce offspring that are similar, but not identical to the parents • Explain that asexual reproduction will produce offspring that is identical to the parent and only requires on parent e.g., bulbs, tubers and runners • Explain the life cycle of a mammal, amphibian, insect and a bird • Explain the process of metamorphosis using frogs and butterflies as examples • Describe the differences in the life cycles of a mammal, amphibian, insect and a bird • Use prior knowledge of parts of a flower to explain the stages involved in the reproduction process (pollination, fertilisation and germination)
6	• Know that living things can be grouped according to different criteria • Know that a cell is made up of nucleus, cytoplasm and membrane • Know that living things can be multicellular or unicellular (bacteria) • Explain in simple terms how the Linnaeus system is used to classify living things • Explain why we need to group living things

	• Explain possible difficulties with classification (penguins and whales) • Know that classification keys are used to group living things based on recognisable characteristics • Construct a classification key • Explain what microorganisms are and can name some • Give examples of some situations where microorganisms can be helpful • Give examples of some situations where microorganisms can be harmful
KS3 (NC)	**Cells & Organisation** ● Cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope ● The functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts ● The similarities and differences between plant and animal cells ● The role of diffusion in the movement of materials in and between cells ● The structural adaptations of some unicellular organisms ● The hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms. **Interdependence** ● The interdependence of organisms in an ecosystem, including food webs and insect pollinated crops ● The importance of plant reproduction through insect pollination in human food security ● How organisms affect, and are affected by, their environment, including the accumulation of toxic materials. **Reproduction** ● Reproduction in humans (as an example of a mammal), including the structure and function of the male and female reproductive systems, menstrual cycle (without details of hormones), gametes, fertilisation, gestation and birth, to include the effect of maternal lifestyle on the foetus through the placenta ● Reproduction in plants, including flower structure, wind and insect pollination, fertilisation, seed and fruit formation and dispersal, including quantitative investigation of some dispersal mechanisms