SW9 Partnership SCIENCE Medium Term Plan: Year Group: 5 Term: Teacher:

TOPIC	NATIONAL CURRICULUM	KEY VOCABULARY	POSSIBLE TRIP
LIVING THINGS AND THEIR HABITATS	• Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. • Describe the life process of reproduction in some plants and animals.	**TIER 2 (Academic):** Classify, compare, observe, describe, sequence, contrast, adapt, reproduce. **TIER 3 (Topic Specific):** Life cycle, mammal, amphibian, insect, bird, sexual reproduction, asexual reproduction, pollination, fertilisation, metamorphosis, offspring, egg, sperm, runner, bulb, cutting, clone.	**Royal Botanic Gardens, Kew & Chelsea Physic Garden:** Delivers KS2 botanical workshops where pupils dissect flowers to study plant sexual reproduction (pollination and fertilisation) and take plant cuttings to explore asexual propagation. **WWT London Wetland Centre (Barnes):** Provides outdoor field sessions for observing metamorphosis in dragonflies and amphibians, while contrasting bird and mammal lifecycles across wetland habitats. **School Nurse / NHS Health Outreach:** Local school health teams provide structured, age-appropriate outreach sessions to cover male and female puberty changes, gestation timelines, and human body milestones.
PRIOR LEARNING	**Y3 & Y4:** Plant reproduction, classification keys, and grouping vertebrates vs invertebrates.		

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
ENQUIRY QUESTION	How do the lifecycles of mammals and birds differ?	What is metamorphosis in amphibian and insect lifecycles?	How does sexual reproduction occur in flowering plants?	How do plants reproduce asexually to produce identical clones?	How do animals reproduce sexually through internal or external fertilisation?	How do environmental changes threaten specific animal lifecycles?
LEARNING OBJECTIVES	To compare the life cycles of mammals (live young) and birds (shelled eggs).	To investigate complete metamorphosis (insects) and incomplete metamorphosis (amphibians).	To describe plant sexual reproduction via pollination, fertilisation, and seed creation.	To observe and execute asexual reproduction methods in plants (cuttings, runners, bulbs).	To compare animal sexual reproduction strategies (internal vs external fertilisation).	To evaluate how environmental habitat changes affect species survival.
ACTIVITY **WORKING SCIENTIFICALLY SKILLS**	**CLASSIFYING:** Compare mammal (womb birth, milk feeding) vs bird (egg laying, incubation) lifecycles using detailed flow diagrams.	**OBSERVING OVER TIME:** Track live chick hatching or butterfly pupa emergence; diagram complete (egg-larva-pupa-adult) vs incomplete stages.	**MODELLING:** Dissect flower parts; model pollen grain growth down styles to fertilize ovules in ovaries.	**OBSERVING OVER TIME & RESEARCH:** Take geranium/spider plant cuttings, plant tubers/bulbs; record root and shoot growth over weeks.	**RESEARCHING:** Compare internal fertilisation (mammals, reptiles) vs external fertilisation (fish, frogs in water).	**PATTERN SEEKING:** Analyse how temperature or pesticide changes disrupt specific lifecycle stages (e.g., frogspawn drying out).

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ASSESSMENT	Detail distinct structural lifecycle differences between mammals and birds.	Differentiate complete metamorphosis from gradual nymph development.	Detail flower fertilisation leading to seed formation.	State that asexual reproduction requires 1 parent and produces genetically identical offspring.	Classify animal groups by fertilisation location and egg structure.	Describe how environmental disruptions impacts lifecycle completion.
END POINT ASSESSMENT	Pupils can compare lifecycles of mammals, birds, amphibians, and insects (complete vs incomplete metamorphosis); explain sexual reproduction in plants and animals; and demonstrate plant asexual reproduction methods.					
HIGHER ORDER QUESTIONS	Why do birds need hard calcium eggshells while fish eggs are soft jelly-like capsules?	What biological advantage does a caterpillar gain by eating completely different food than a butterfly?	Why is cross-pollination between two separate plants preferred over self-pollination?	What is the main advantage of asexual cloning over sexual seed reproduction for a gardener?	Why do animals using external fertilisation need to lay thousands of eggs at once?	How could warming ocean temperatures disrupt the delicate lifecycle timing of sea turtles?
FURTHER OPTIONAL QUESTIONS/BIG QUESTIONS FOR DISPLAY	How can a caterpillar melt down its entire body inside a chrysalis to become a butterfly? Can a brand new plant be grown without ever using a seed? Why do birds lay hard-shelled eggs while mammals nourish live young internally?					
INCLUSION & ADAPTATION	Lifecycle sequencing wheels for Dog (Mammal) vs Robin (Bird) with clear picture tokens.	Tactile plastic metamorphosis models (Egg → Tadpole → Froglet → Frog).	Oversized flower model puzzle with color-coded pollen transfer arrows.	Hands-on planting kit with pre-cut spider plant runner plantlets and water rooting jars.	Visual matrix sorting cards: "Fertilisation Inside Body" vs "Fertilisation In Water".	Before/After environmental change picture scenarios with species impact tokens.
GREATER DEPTH	Research monotreme (platypus) and marsupial (kangaroo) anomalous mammalian lifecycles.	Compare hormonal triggers initiating metamorphosis in amphibians vs holometabolous insects.	Map genetic variation advantages resulting from sexual plant reproduction.	Investigate commercial plant tissue culture micropropagation techniques.	Analyse evolutionary trade-offs between parental investment and offspring quantity.	Write a conservation strategy proposal protecting vulnerable amphibian breeding ponds.