Knowledge Organiser

Year: 5 Subject: Science Unit: Living things and their habitats/Animals inc humans

Overview:

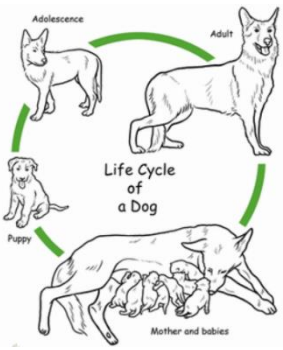
During this sequence of learning pupils will look at the differences in life cycles of a mammal, amphibian, insect and a bird and describe the life process of reproduction in some plants and animals. Pupils will also look at the changes as humans develop into old age.

What should I already know?

- Living things move, grow, consume nutrients and reproduce.
- A trout is a fish, a frog is an amphibian; a lizard is a reptile; a robin is a bird; a rabbit and a human are both mammals.
- Fish, amphibians, reptiles, birds and mammals all have internal skeletons and organs; and are vertebrates (have a backbone).
- Fish have gills so they can breathe underwater and have scaly skin.
- Amphibians begin their lives with gills but then develop lungs and breathe on land.
- Reptiles breathe air and have scaly skin.
- Birds have feathers and wings.
- Mammals have fur/hair and they feed milk to their young.
- Different parts of plants have one or more function.
- Roots collect water and minerals from the soil, and hold the plant firmly in the ground.
- The stem holds up the plant and transports water and minerals from the roots to the other parts of the plant.
- The leaves make food by trapping light and using its energy to turn carbon dioxide and water into carbohydrates.
- The function of a flower is for reproduction.

What will I know by the end of the unit?

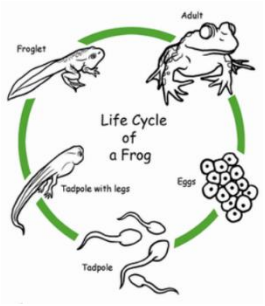
- The life cycle of a living thing is a series of stages of development starting with a fertilised egg in animals or a seed in many plants. It is known as a life cycle as the cycle constantly begins again.
- In most mammals (e.g. humans or dogs) a fertilised egg develops in the womb into an embryo and is then born and fed on milk before it is weaned onto the food that it is adapted to eat; it then develops to maturity in a period



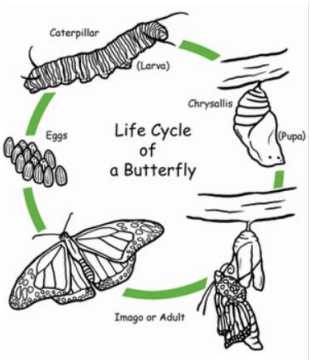
Vocabulary:

life cycle	The series of changes in the life of an organism, including reproduction.
life span	The length of time a living things lives for.
embryo	An unborn or unhatched offspring which is developing.
womb	The organ in a female mammal where offspring develop before they are born.
weaned	To get a young mammal used to food other than its mothers milk.
adolescence	The period of time when a young person develops from a child into an adult.
metamorphosis	The process of changing into an adult form.
pupa	An insect in its inactive, immature form between a larva and an adult.
larva	The active, immature form of an insect.
chrysalis	A moth or butterfly at the stage of development when it is covered by a hard case.
hatchling	A young animal that has recently hatched from an egg.
fledgling	A young bird that has just left its nest.

called adolescence after which it can reproduce and the cycle can begin again.



- In amphibians (e.g. frogs) a fertilised egg develops into an embryo and then hatches into a tadpole; the tadpole develops adult characteristics, metamorphoses into the adult form after which it can reproduce and the cycle can begin again.
- In many insects (e.g. butterflies) a fertilised egg develops into wingless feeding form called a larva (caterpillar); the larva feeds then later becomes a pupa (chrysalis) with a protective cocoon; inside this cocoon, the pupa metamorphoses into the adult butterfly after which it can reproduce and the cycle can begin again.



- In birds (e.g. robins) a fertilised egg hatches in a nest (a hatchling) and is fed by its parents until it is ready to fly (i.e. becomes a fledgling); it then leaves the nest and grows into an adult after which it can reproduce and the cycle can begin again.
- Plants reproduce sexually or asexually depending on the plant. In asexual reproduction a plant cell splits in two to produce genetically identical offspring. In sexual reproduction male and female gametes join together to create offspring with a mixture of the two parent's genetics.
- Humans go through stages of development; they begin as fertilised eggs and then develop into embryos before developing into babies; once they are born, these newborn babies become infants (roughly 2 months to 2 years) then into young children (roughly 2-12 years old); children develop into adults during adolescence (roughly 12-16 years old) at which age they become physically capable of reproduction; as adults develop into old age (roughly 55+ years old) they experience changes in their body which require them to move more carefully and rest more frequently.

insect	A small animal that has six legs and normally one or two pairs of wings.

<u>Stages of human development:</u>


Fertilised egg


Foetus (unborn)


Newborn baby (up to 28 days)


Infant (up to 2 years)


Young child (up to 11-12 years)


Adolescent (up to 16years)


Adult


Old age