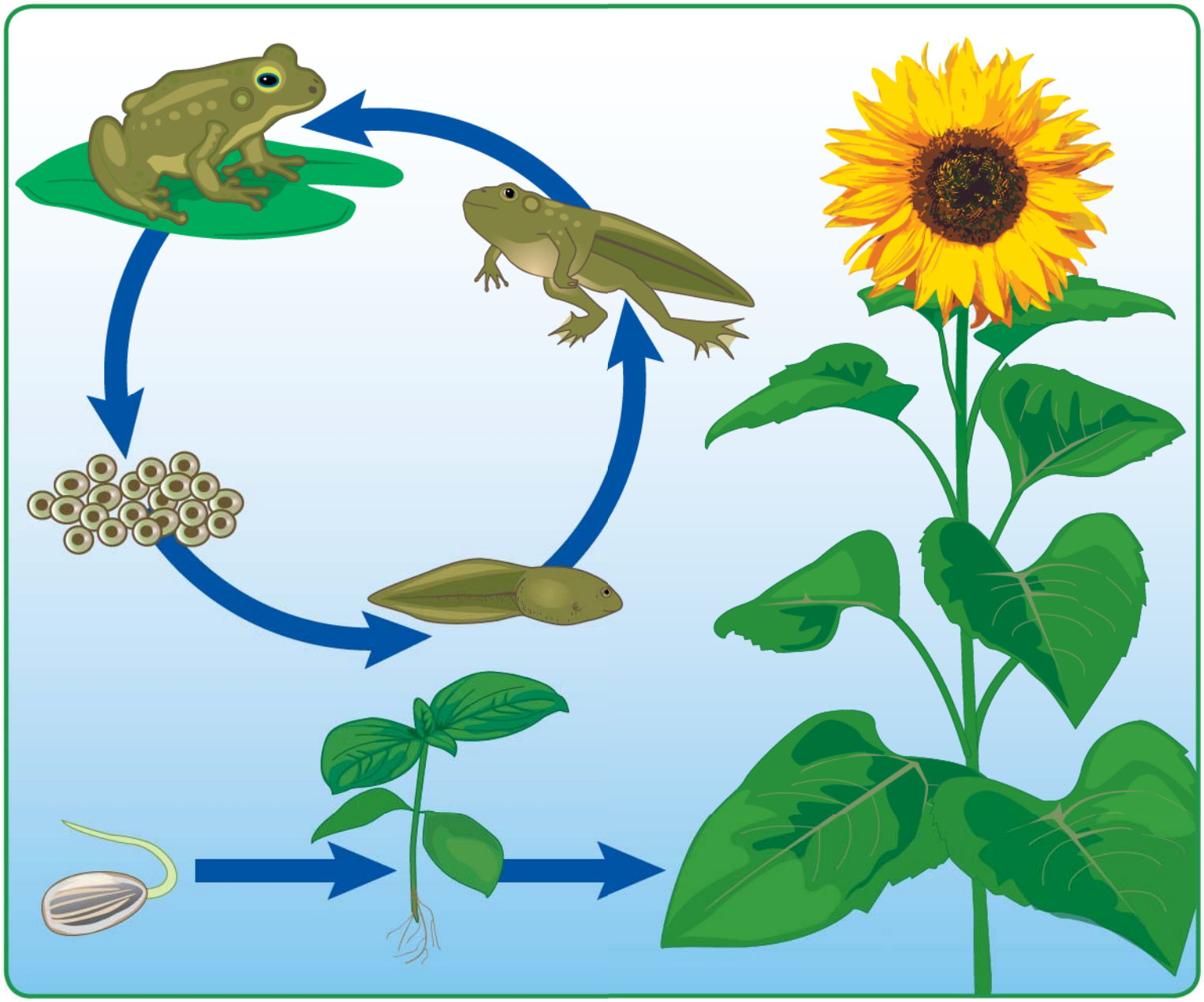
Growth & Development of Plants & Animals

Learning Guide

Elementary Science



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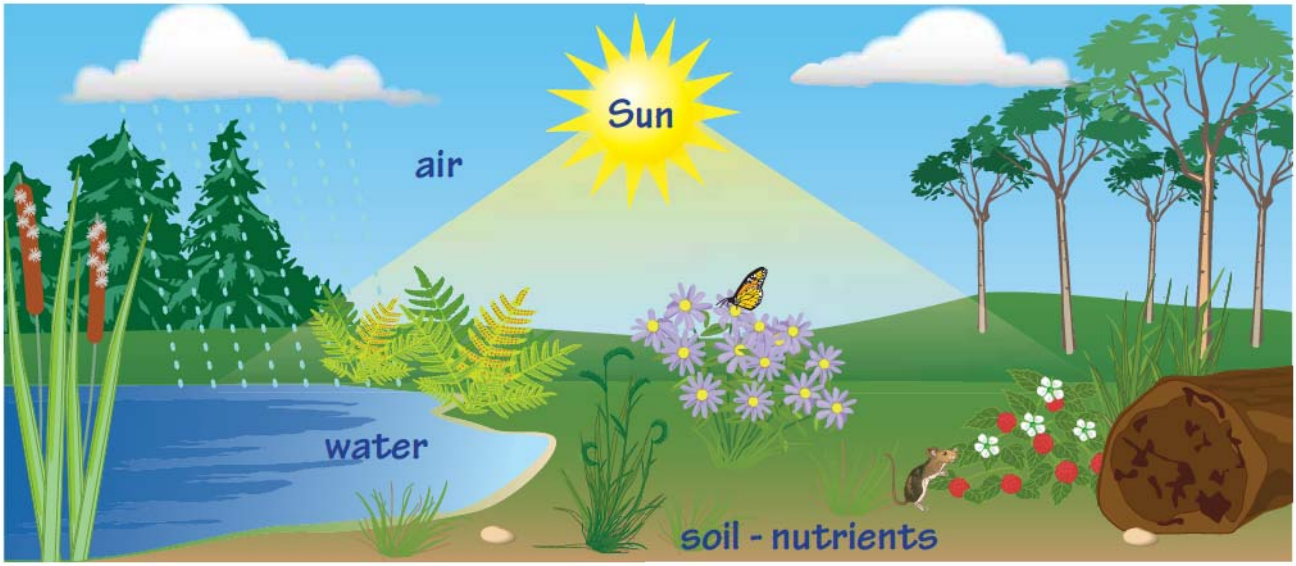
LESSON 4

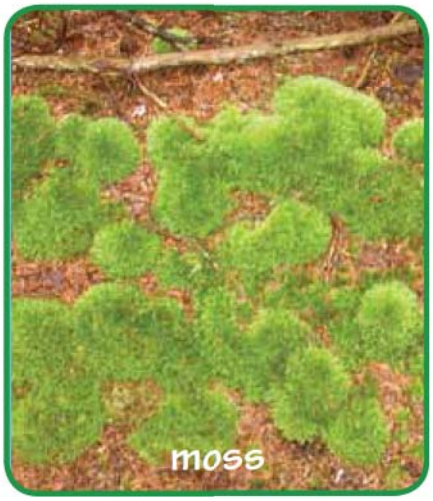
PLANTS

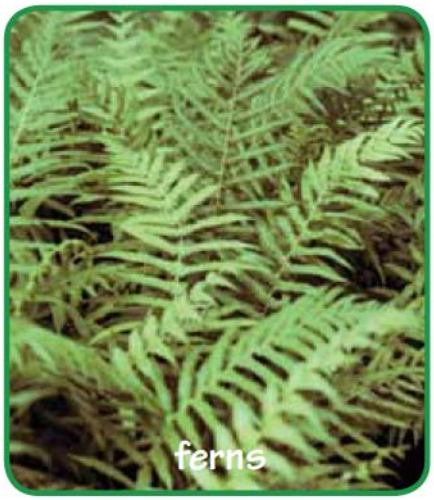
Plants are living things that need water, air, nutrients and sunlight to grow.



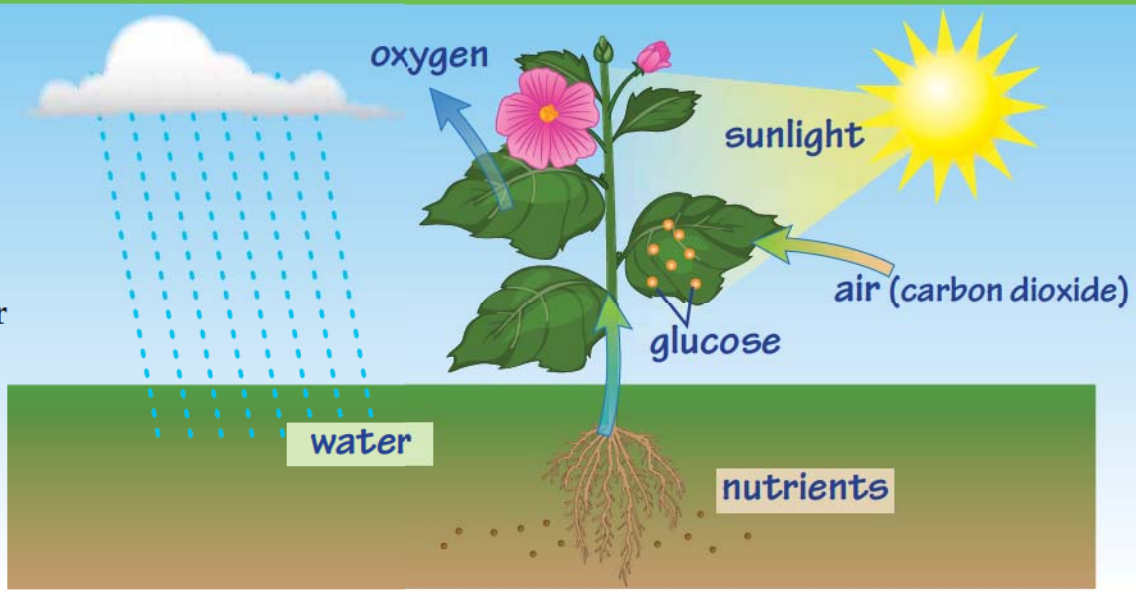
There are two main kinds of plants - **plants with flowers** and **plants without flowers**. Plants with flowers include **fruit trees** and any **plant with flowers**.

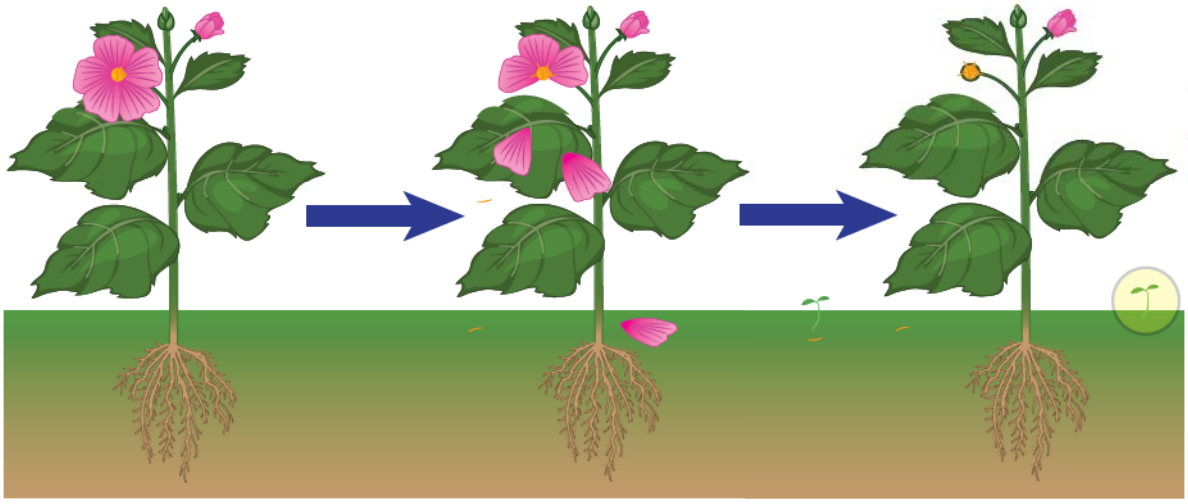
Plants **without flowers** include **pine trees**, **mosses** and **ferns**.



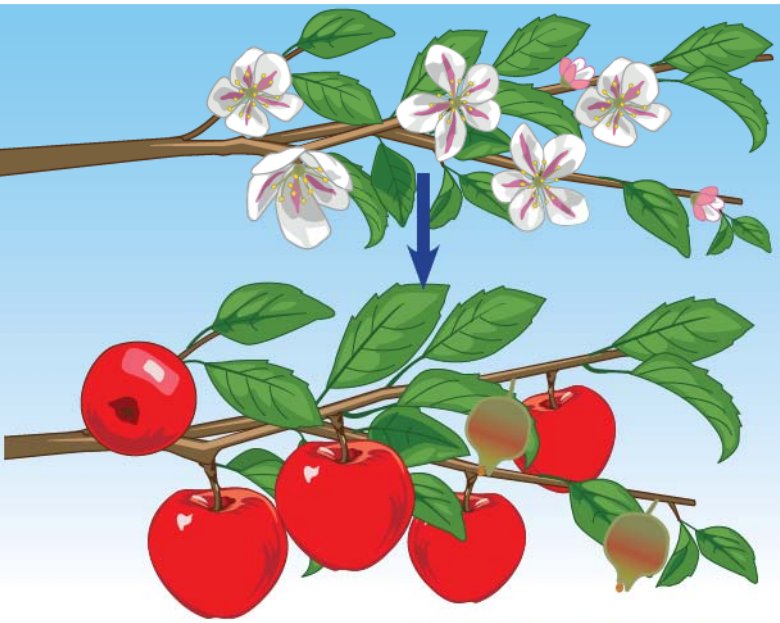


Leaves are the parts of a plant where the plant's own **food is made**. They use sunlight, air, water and nutrients from the soil to make their own food through a process called **photosynthesis**.

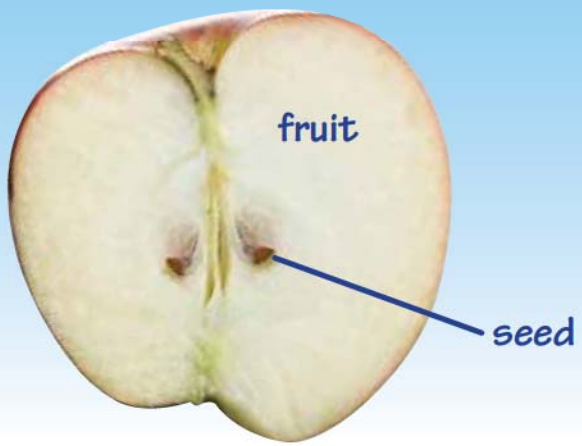




The main job of the **flower** of a plant is to make **seeds**. New plants grow from these seeds.

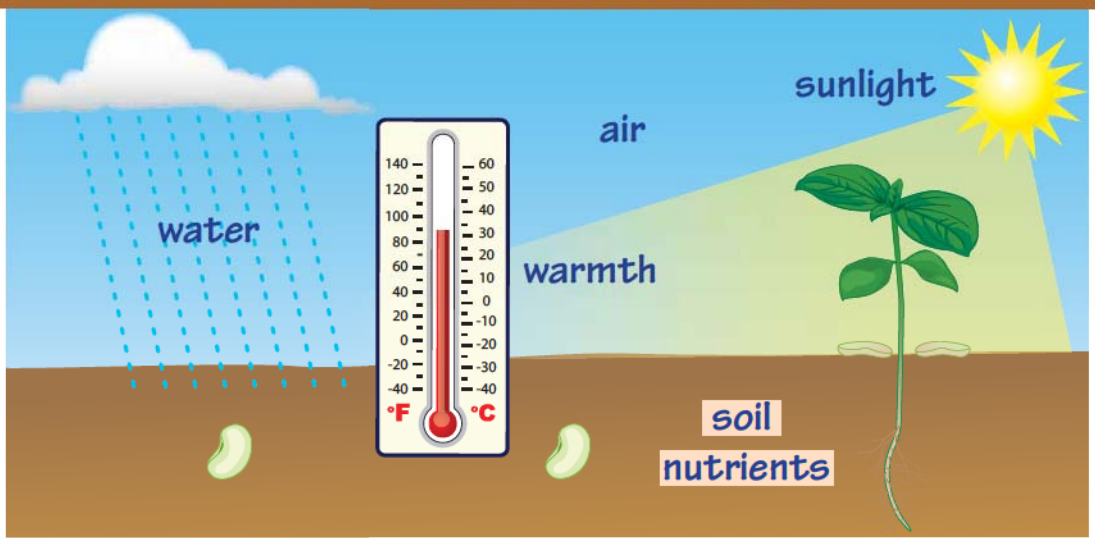


Some plants form **fruit** to help protect their seeds.

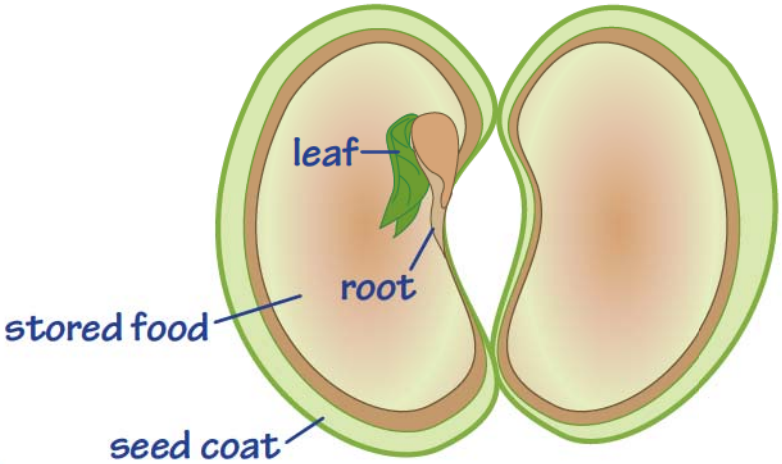


WHAT A PLANT NEEDS TO GROW...

Plants need many essential things in order to grow, such as water, air, nutrients, sunlight, and warm temperature. Plants need their space too!

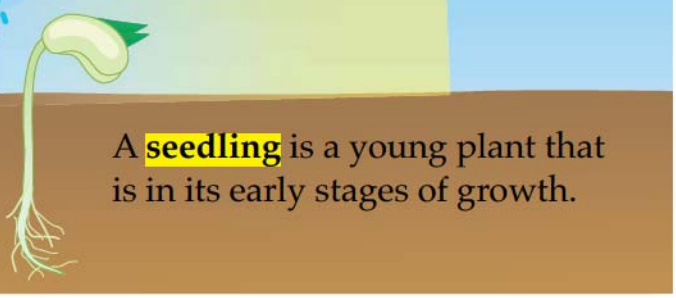


WHAT'S INSIDE A SEED?



Seeds can look very different but they all have the same purpose - to grow new plants.

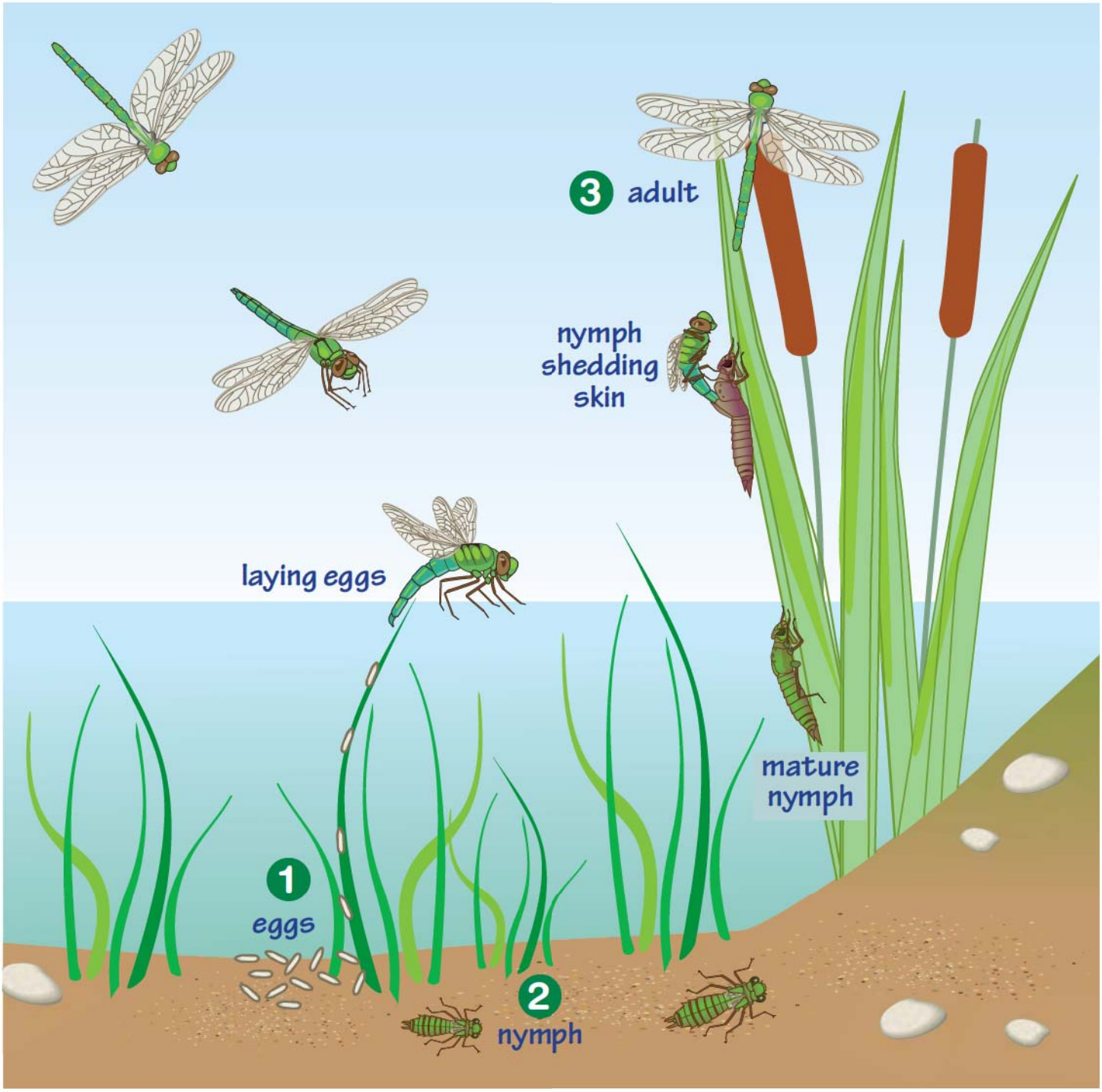
Germination is the process by which the plant **embryo** inside a **seed** grows and a **seedling** grows above the soil.



A **seedling** is a young plant that is in its early stages of growth.

DRAGONFLY LIFE CYCLE

Most insects go through **complete metamorphosis**, but some, such as dragonflies, go through **incomplete metamorphosis**. This life cycle includes three stages of development: egg, nymph, and adult.



3. Inheritance and Variation of Traits: Life Cycles and Traits

Students who demonstrate understanding can:

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death

3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment.

3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

Disciplinary Core Ideas

LS1.B: Growth and Development of Organisms

- Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles. (3-LS1-1)

LS3.A: Inheritance of Traits

- Many characteristics of organisms are inherited from their parents. (3-LS3-1)
- Other characteristics result from individuals' interactions with the environment, which can range from diet to learning. Many characteristics involve both inheritance and environment. (3-LS3-2)

LS3.B: Variation of Traits

- Different organisms vary in how they look and function because they have different inherited information. (3-LS3-1)
- The environment also affects the traits that an organism develops. (3-LS3-2)

LS4.B: Natural Selection

- Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)

Science and Engineering Practices

Developing and Using Models - Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions.

- Develop models to describe phenomena. (3-LS1-1)

Analyzing and Interpreting Data

Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.

- Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS3-1)

