

There are two kinds of life cycles: <sup>①</sup> plant life cycles and <sup>②</sup> animal life cycles.





# Plant Life Cycles

## Plants With Seeds

*what do* Most plants come from seeds. When a seed opens, it germinates, and a small plant grows out of it. After some time, the plant grows into an adult plant, which forms flowers in some types of plants.

Flowers enable plants to reproduce. Flowers have male and female parts, which is why they are able to reproduce.



*what does*

When a seed is in soil and watered, it breaks open and germinates. The tiny plant that comes out of it is a seedling.

*Define :-* A small plant that grows from a seed.

The seedling grows into an adult plant. The adult plant makes flowers. In a flowering plant, seeds are produced in the flowers.



Inside each seed is a plant in its first stage of development. The hard covering is the seed's protection.

The flower falls off the plant, then the plant makes fruit in its place. The fruit then has the seeds in it, and when it falls to the ground, the cycle starts again.

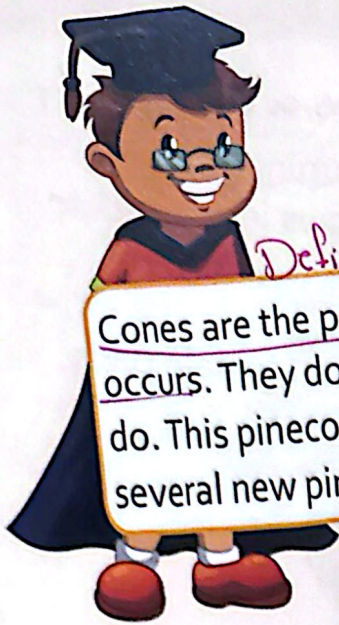
**Fast Fact**

Popcorn is a seed, too. When popcorn is heated, it explodes!

*what happened when the fruit falls to the ground?*

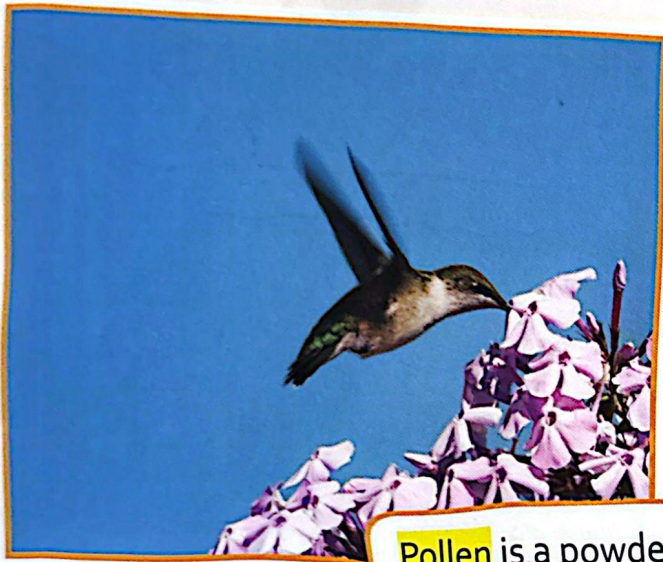


Some plants form their seeds in cones, without the help of flowers.



### Define Cones

Cones are the part of a plant where reproduction occurs. They do not develop into fruit, like flowers do. This pinecone has seeds in it that will grow into several new pine trees.



### Define Pollen?

Pollen is a powder-like substance that helps plants reproduce. (Pollination occurs when pollen is moved from a male plant part to a female plant part.) Different animals, (like birds and bees, help move pollen from plant to plant.) Wind and water also help in the pollination process. Once a plant is pollinated, (seeds form in the female part of the flower and eventually form into a fruit.) The part of the flower that surrounds the seeds grows into a fruit. Without pollination, a flower will not make seeds or grow fruit.

who helps move pollen?

\*why is pollination important?

↳ it helps plants make seeds and grow new plants

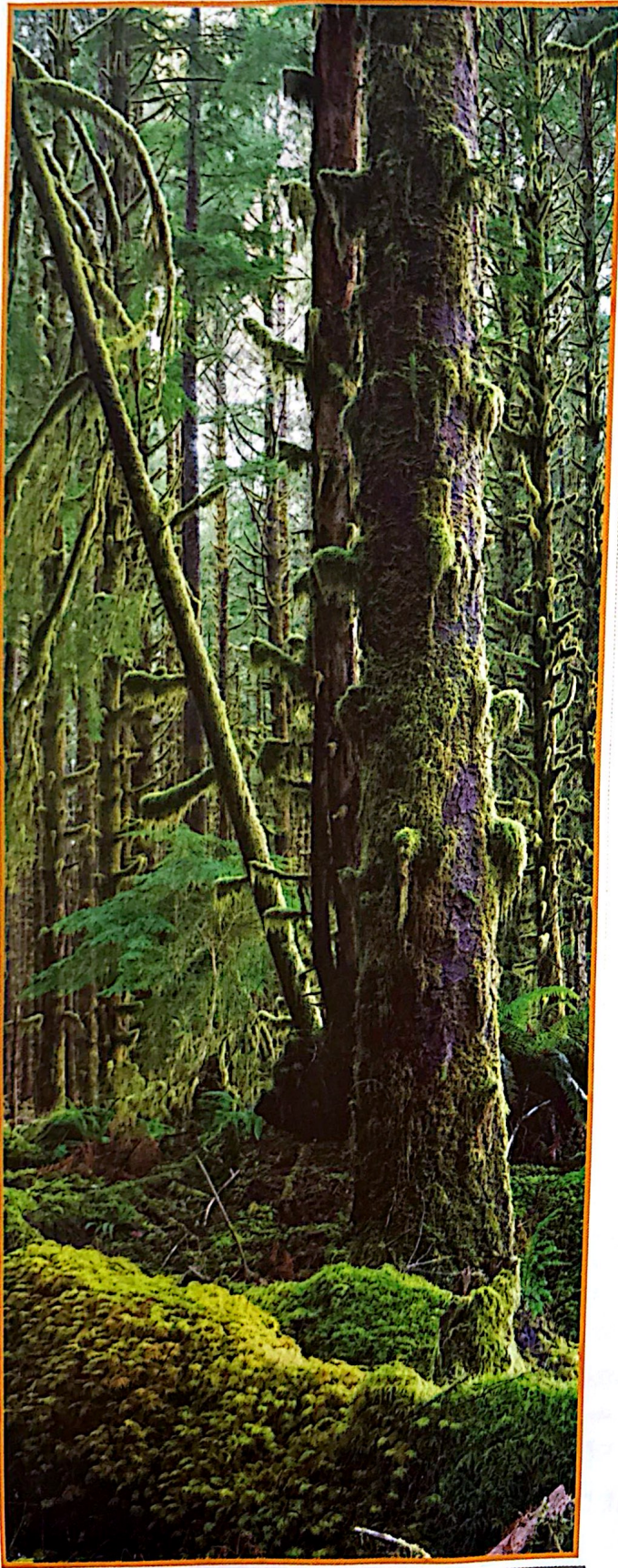
what happens after Pollination?



# Plants With Spores

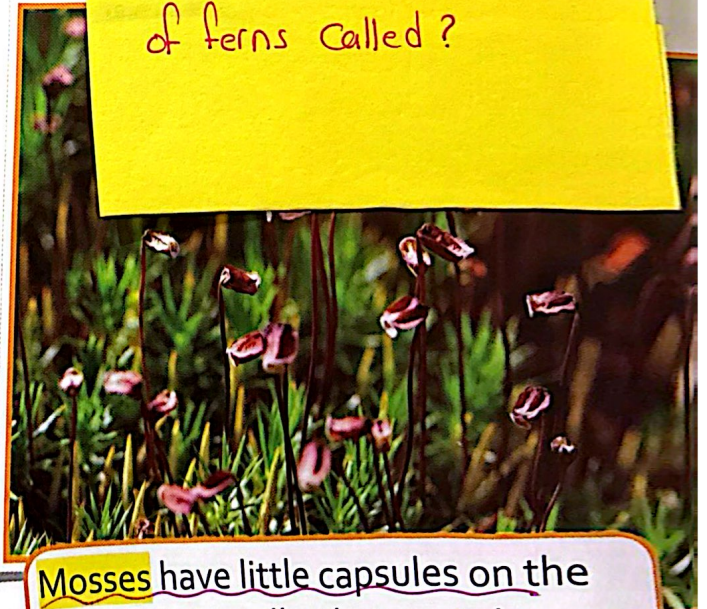
What do some plants use to reproduce instead of seeds?

Some plants do not reproduce through the help of flowers, seeds, or cones. They only reproduce through **spores**. Like seeds, spores grow into new plants as well.



Ferns have leaves, which are called **fronds**; spores are attached in groups on the underside of the fronds. Each group contains hundreds of spores!

What are the leaves of ferns called?



Mosses have little capsules on the end of their stalks that contain spores. When the capsules dry out, they release the spores into the air.

What happens when moss capsules dry out?





# Animal Life Cycles

x the difference between viviparous and oviparous.

example of viviparous.

Animals have different ways of reproduction. Mammals, for example, usually give birth to live babies; animals that reproduce this way are called viviparous. (birds and most reptiles, amphibians, and fish lay eggs; animals that reproduce this way are called oviparous.)

example of oviparous

## Viviparous Cycle



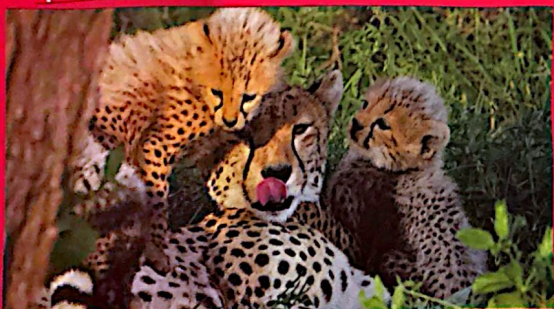
A mother cheetah gives birth to a cub.



The cheetah cub will stay with its mother and learn how to hunt until it is about two years old.



The young cheetah grows into an adult and finds a mate to reproduce.



A new cycle starts again.

## Oviparous Cycle



A baby mallard duck hatches from its egg.



The duckling stays with its mom while it grows. It relies on its mom to bring its food.



The adult duck finds a mate and reproduces.



The female duck will lay eggs and sit on her eggs, protecting them until they hatch. Then a new cycle begins.





# Metamorphosis

what is metamorphosis?

Some animals do not look like their parents when they are born; as they grow, they become completely different! This change is called **metamorphosis**. Insects and amphibians are animals that go through metamorphosis.

Stages of

## Complete Metamorphosis

1. egg.
2. larva.
3. pupa.
4. adult ladybug.

If an animal goes through four different stages in its life cycle, such a change is called a complete metamorphosis. For example, a ladybug goes through a complete metamorphosis.

### Step 1:

An adult ladybug lays eggs on a leaf.



### Step 2:

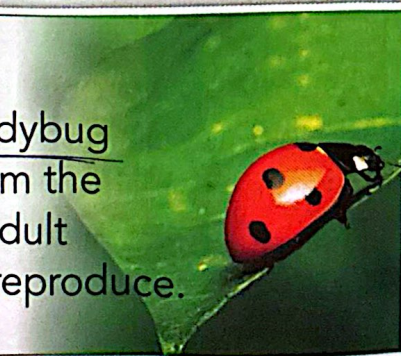
A ladybug larva hatches from each egg. The larva looks different from the adult.



## Life Cycle of a Ladybug

### Step 4:

The adult ladybug emerges from the pupa. The adult can fly and reproduce.



### Step 3:

The larva becomes a pupa. During this stage, it doesn't move as it slowly changes to an adult.





# Incomplete Metamorphosis

\*What is incomplete metamorphosis?

Some animals do look like their parents when they are born. They will go through what is called an incomplete metamorphosis because they will not change very much as they grow.

Grasshoppers, dragonflies, and cicadas are insects that go through an incomplete metamorphosis. They will go through three different stages in their life cycle.

Let's see the life cycle of a grasshopper.

## Step 1:

An adult grasshopper lays its eggs.



## Step 2:

Young grasshoppers called nymphs hatch from eggs. They look like adult grasshoppers except they don't have wings yet.



## Life Cycle of a Grasshopper

## Step 3:

The final shedding produces an adult grasshopper.



As a nymph grows, it sheds its skin several times before it becomes a fully grown adult. Each time, its wings become bigger.

\*Steps of incomplete metamorphosis?

1. eggs.
2. Young grasshoppers (nymphs).
3. Sheds.
4. adult grasshoppers.