

Observe Plants Like a Scientist!

Spot and record the changes in a plant's life cycle by looking closely at the whole plant, its surroundings, and the season.

SAMPLE LIFE CYCLE: OAK TREE

1 **SEED**



Seed Inside the oak tree's fruit (acorn) is a seed. Inside the seed is everything the plant will become.

2 **GROWTH**



Germination → Sprout → Seedling

A root grows down into the soil, anchoring the plant. The plant grows into a tree.

3 **SEASONAL CHANGES**



Tree The mature plant goes through seasonal changes. During the growing season, longer days, warmer temperatures, and rainfall cause leaves to grow.

Key Phenophases:

- **Leaf bud burst:** Look for new buds or leaves.
- **First leaf unfolded:** First leaves are completely unfolded from the bud.

SEASONAL CHANGES

4 **Flowering**
Further into the growing season, the tree begins to produce flowers.

Key Phenophases:

- **First flower:** Look for a few flowers that are fully open.
- **Middle flowering:** Half or more of the flowers are fully open (stamens visible).

5 **Fruiting**
Fruit or seed appears, then gradually grows in size and ripens as it matures.

Key Phenophases:

- **First ripe fruit:** Look for fully ripe fruit or seeds dropping.
- **Middle fruiting:** Half or more branches have fully ripe fruit or seeds are dropping.

7 **Prep for dormant season**
The plant slows

food production to prepare for winter. Leaves change color.

Key Phenophases:

- **50% color:** Half or more leaves have started to change color.
- **50% leaf drop:** At least half of the leaves have fallen off.

6 **Seeds spread**
After the acorns drop to the ground, a large number of them are carried away by animals or planted by humans to grow.



Top Observation Tips

To figure out a plant's phenophase, think about...

- What evidence of new growth or change do I see?
- What season is it?

Make a plant observation report with key details:

- Date of observation.
- What kind of habitat is your observation site? (Lawn, garden, next to a pond, etc.)
- How much shade does the site receive during the day?
- Can you see other organisms (like insects) interacting with the plants?
- Describe the irrigation (water source) at this site.