

Tracking Flowering Plants and Pollinators

Throughout the growing season, flowering plants are found in yards, neighborhoods and gardens. Some of these plants are wild and even may be considered weeds (e.g., dandelion) while others are garden species (e.g., day lilies). Often these flowers attract pollinators who drink the flower's nectar and carry its pollen to other flowers.

Once a flower is pollinated, it produces seeds and often matures into the tasty fruits and vegetables that we enjoy as well as becomes a major food source to a variety of wildlife. Flowering plants are truly an essential part of the natural world.

What flowers bloom in your observation area? How long do they bloom? What are the differences in the flower size, shape and color? Which pollinators visit these flowers? Are there a variety of pollinators or one specific kind?

MATERIALS:

- [Science notebook](#)
- Pencil
- Colored Pencils
- Handheld device with weather app
- Beaufort wind scale (see [Beaufort scale resource](#))
- Magnifying glass or hand lens
- Measuring tape or ruler

SAFETY NOTE: During the COVID-19 public health crisis, make sure the outdoor area used for this activity maintains CDC's social distancing recommendations.

TEACHER NOTE:

For Students in Grades 3rd-5th (with appropriate modifications)

Next Generation Science Standards (NGSS)

Disciplinary Core Idea--Life Science

Observe the parts of either a plant or animal in your yard. (1-LS1, 4-LS1, 5-LS1)

Investigate the components of the ecosystem in the yard. (2-LS2.A, 5-LS2.A)

NGSS Science Practices (SP)

SP1: Asking questions

SP3: Planning and carrying out investigations

SP4: Analyzing and interpreting data

SELECT PLANTS:

1. Take a brief walk around your observation area and select two flowering plants that would be interesting to compare. The two plants can be similar but not the same species. They can be blooming or just forming floral buds for future blooms. One may be growing along a driveway while the other is located in a garden.

MAP LOCATIONS OF PLANTS:

1. As with any entry in your science notebook, first record the daily information.
 - a. Date
 - b. Location
 - c. Weather description including sky color, air temperature and wind speed (see Beaufort Scale)
2. Draw a map of the locations of the two plants using a bird's eye view and symbols for map features. Label plants with a descriptive name (e.g., hydrangea or blue flowering shrub) or number code (e.g., plant #1).

COLLECT OBSERVATIONS:

1. Design a data chart to record observations per plant. Each row represents a characteristic you are interested in observing. Select at least **five** characteristics to observe and label the chart columns appropriately, such as:
 - Garden or non-garden plant
 - Woody or non-woody stems
 - Height (cm)
 - Flower color
 - Flower shape -*sketch (tube-shaped, bell-shaped, cup-shaped, platform-shaped, circle-shaped)
 - Flower size (measure or categorize as small, medium, etc.)
 - Flower arrangement per stem (e.g., many flowers in a spike, several flowers in a cluster, single)
 - Leaf shape-*sketch (oval, heart-shaped, narrow/grass-like)
 - Leaf size (measure or categorize as small, medium, etc.)

*When sketching capture as much detail as possible. Use the magnifying glass or hand lens to notice even more details. See [example data chart](#).

2. In the science notebook take **field notes** for each of the flowering plants. Record the number of flowers. Observe each flower for pollinators (approximately 5 minutes) and record the number of and types of pollinators per plant. Pollinators include bees, wasps, moths, butterflies, flies, beetles and hummingbirds.
3. Some flowers depend on pollinators to produce seeds and fruit. Some pollinators depend on flowers for their nectar food source. To identify possible relationships between the flowers and pollinators, observe the plants and record field notes over *multiple days* (~3 different days). Figure out a schedule that works for you. Design your field notes to work for the format of your particular science notebook (see [example field notes](#)).

NOTE: For each field note entry, also record the daily information: date, location, weather in the science notebook.

MAKING SENSE OF THE DATA:

1. Now that you have recorded field notes multiple days, review all of your data and field notes.
2. Add a final entry in your science notebook that describes how you are making sense of all these observations.

Use your recorded data to respond to these questions:

What are similarities between the two flowering plants?

What are the differences between the two flowering plants?

What are some patterns? (e.g., How do the number and types of pollinators compare between the two kinds of flowers?)

3. After monitoring flowering plants and pollinators in your yard, neighborhood or community *what are your new questions?* List as many questions as possible as part of your final notebook entry.

FURTHER EXPLORATION:

1. If you want to continue this type of exploration, use one of your questions to design a new investigation to carry out in your yard, neighborhood, or community.
2. Learn more about the topic by reading a relevant resource or viewing a video clip about the valuable role of flowers and pollinators in the ecosystem (see Resources).

MODIFICATION:

Instead of detailed sketches of flowers and leaves, collect the flower or leaf, place between paper towel and press with a heavy pile of books until completely dry (~ 7-10 days). Include the pressed specimen in the science notebook by attaching with standard glue.

RESOURCES:

1. Who are the pollinators? NH's Super Seven <https://extension.unh.edu/blog/who-are-pollinators-nhs-super-seven>
2. J. Cole. 1995. *The magic school bus: Plants seeds*. Scholastic: NY.
3. Read aloud of *The magic school bus: Plants seeds*.
https://www.youtube.com/watch?v=_ZRLFeTHA8c
4. R. Konicek-Moran. 2016. *From flower to fruit*. NSTA Kids Press, Arlington, VA.
<https://my.nsta.org/resource/105038> [e-version and hard copies available]