Name: _____ Date: _____ Class: _____

Flower Variation and Reproductive Adaptations

Learner Objectives:

- Identify the role of variation in species survival under changing environmental conditions.
- Describe mechanisms of sexual reproduction (*e.g. cross fertilization in seed plants*)

Key Terms:

Variation	Survival	Self-Pollination
Adaptation	Anther	Cross-pollination
Biological diversity	Stigma	Pollen

Background Information: In order for a flower to be pollinated, pollen must move from the anthers of one flower to the stigma of the same or different flowers. The pollen can be moved in different ways by passive means like wind, water or gravity, or by vectors such as insects, mammals and birds. When observing variations amongst different species of flowers, we can identify how each variation is uniquely adapted for a specific form of pollination.

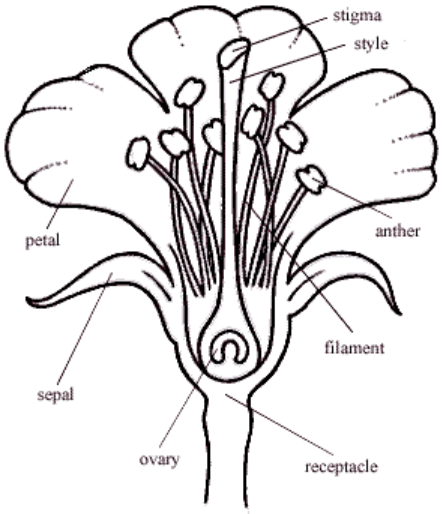
Research Question: How are different species flowers uniquely adapted for different methods of pollination?

Materials:

Magnifying lens	Dissecting Tray	Flower guide
Scalpel	Tweezers	3 species of flowers

This investigation / activity has been adapted from:
Mah K, Martha J, McClelland L, et al. *Science in Action 9.* Toronto, ON: Addison Wesley.

Procedure:



1. Observe three different species of flowers. Identify and record the general characteristics of each (e.g., color, petal size, petal arrangement, anther size and arrangement, pollen size and arrangement, stigma size and arrangement.
2. Based on the characteristics observed, predict whether the flower is likely to be self-pollinating or cross-pollinating.
3. Look up the species name of each flower to determine their habitats and how each flower is pollinated. Record your results.

Observations:

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Analysis:

1. Describe how variations in flower color are adapted for different methods of pollination?

2. What role does flower petal size play in how a flower is pollinated?

3. How might smell aid in pollination? How is smell unique to different organisms?

4. How is the physical arrangement or location of the anther and the stigma adapted for self or cross pollination?

Conclusion:

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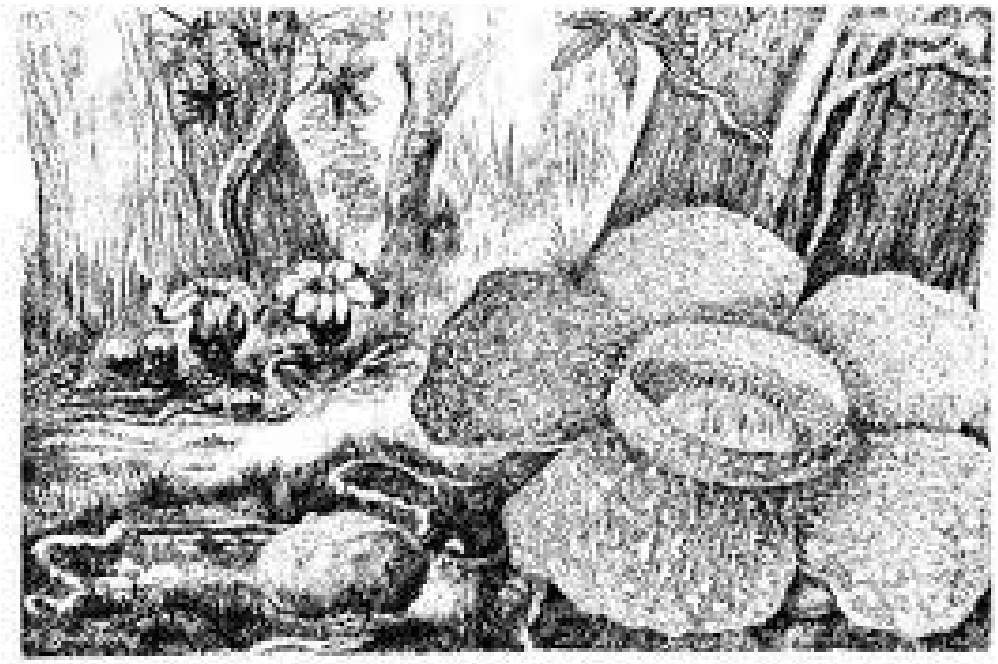
Extension:

1. The world's largest blooming flower, *Rafflesia arnoldii*, is a unique flower found in the rainforests of Indonesia. A single flower can open to be as large as 3 feet across and can weigh nearly 12 pounds. When this red fleshy-colored flower is in bloom, it gives off a pungent odor resembling rotten meat. Investigate why this flower is so unique and how it is adapted to survive in it's environment.



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