Name: _____ Class: _____ Date: _____

The Role of a Flower

Learner Outcomes:

- Investigate and interpret variations in plant structure, and relate these to different ways that plants are adapted to their environment (*e.g., describe and interpret differences in flower form and in the timing of flower reproduction*)

Key Terms:

stamen	pistil	seed
anther	stigma	eggs
filament	style	petal
pollen grains	ovary	

Background Information: Most flowers contain both male and female reproductive structures. In this activity you will identify the parts of a flower that have a role in reproduction.

Investigation Question: How does each reproductive structure in a flower contribute to reproduction?

Hypothesis: Form a hypothesis about what conditions will yield the best growth of a plant.

Materials:

Flowers	Pencil	Small blade
Dark colored paper	Magnifying glass	15 cm Ruler

Procedure:

1. Create a scale drawing of the intact flower, labeling each of the identifiable exterior parts. Measure the flower's length and width.
2. Open up the flower's petals and carefully remove the stamen by detaching the filaments. Sketch and label these structures.
3. Brush the end of one anther on a piece of dark-colored paper. Use the magnifying glass to observe the pollen grains. Sketch the grains.

This investigation / activity has been adapted from:
Bullard J, Krupa G, Krupa M, et al. *Science Focus 7*. Toronto, ON: McGraw-Hill Ryerson.

4. Locate the pistil and look for it's three parts (stigma, style and ovary). Sketch each of these parts in your observation table.
5. Look at and feel the end of the stigma. What do you notice about it? Record your observations.
6. Use a small blade to carefully cut through the middle of the ovary. Can you see the ovules or eggs inside? Sketch these in your observation table.
7. Provide a short description of what each reproductive structure does and how it is adapted to do it's job.

Observations:

External Diagram of the Flower

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Name of flower part	Size (mm)	Drawing	Observations	Function

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Analysis:

1. How similar was your flower to that shown in Figure 2.33 on p. 122 of your textbook? How was it different?

2. What features of the stigma make it suited for capturing pollen grains?

3. What features of the stamen make it suitable for delivering pollen
    a. To the same flower

    b. To other flowers

4. What do the eggs become?

5. What role do the petals play in ensuring a flower is able to reproduce?

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Extension:

Some flowers have very large petals and some have very small petals. Some petals are brightly colored and some are dull. Some flowers also smell very sweet and fragrant, while other smell like rotting flesh. Select one type of exotic flower and research how its smell, color, petal size and petal arrangement are adapted to ensuring reproduction.

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