



### Lesson Plan: Flowers and Seeds

**Grade Level:** 5

**Subject:** Life Science

**Duration:** 45–60

**NGSS 5-LS1-1:** Support an argument that plants get the materials they need for growth chiefly from air and water.

### Learning Objectives

By the end of this lesson, students will be able to:

- **Identify** the main parts of a flower and describe their functions in plant reproduction.
- **Explain** the process of pollination and fertilization that leads to seed formation.
- **Describe** the structure of a seed and the role of each part in germination.



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This process results in the formation of a seed that contains genetic information from both parent plants.

- **Seed:** A structure that contains a plant embryo, stored food, and a protective seed coat. Seeds form after fertilization and can grow into new plants when conditions are right.
- **Embryo:** The tiny new plant inside a seed that will grow into an adult plant after the seed germinates.
- **Endosperm:** The stored food inside a seed that provides energy and nutrients for the embryo when it begins to grow.



#### **Materials Needed: (all links are included in this PDF)**

- Printed copies of the Study Guide (<https://newpathworksheets.com/api/guide/study-guide-science-grade-5-flowers-and-seeds.pdf>)
- Activity Lesson handout with labeled flower diagrams (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-flowers-and-seeds-flowers-seeds-4.pdf>)
- Worksheet 0 for assessment (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-flowers-and-seeds-0.pdf>)
- Worksheet 1 for practice (<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-flowers-and-seeds-1.pdf>)
- Vocabulary matching worksheet (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-flowers-and-seeds-1.pdf>)
- Real flower samples (such as lilies or tulips with visible parts)
- Dissection tools (plastic knives, tweezers, hand lenses)



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[flowers-and-seeds.pdf](#)

- Demonstrate flower dissection using a real flower. Carefully remove petals to reveal the stamen and pistil, and point out where pollen is produced and where seeds form.
- Explain the pollination and fertilization process using the Activity Lesson diagrams: pollen travels from anther to stigma, pollen tubes grow down to the ovary, sperm cells join egg cells, and seeds form. (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-flowers-and-seeds-flowers-seeds-4.pdf>)
- Discuss seed structure by dissecting a soaked lima bean to show the seed coat, embryo, and endosperm (cotyledons).



### Step 3: Guided Practice (12 minutes)

- Distribute the Activity Lesson handout and work through labeling flower parts as a class. (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-flowers-and-seeds-flowers-seeds-4.pdf>)
- Complete the Vocabulary matching worksheet together, reinforcing key terms such as stamen, pistil, pollination, fertilization, embryo, and endosperm. (<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-flowers-and-seeds-1.pdf>)
- Discuss seed dispersal methods shown in the Activity Lesson: seeds falling from flowers, sticking to animal fur, being eaten by animals, and traveling by wind or water. (<https://newpathworksheets.com/api/activity-lesson/activity-lesson-science-grade-5-flowers-and-seeds-flowers-seeds-4.pdf>)

### Step 4: Independent Practice (15 minutes)

- Have students work individually or in pairs to dissect their own flower samples, identify and



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part of the seed does.

### Differentiation Strategies

For advanced learners:

- Challenge advanced learners to research and present on different pollination strategies (wind, insect, bird, bat) and how flower structures are adapted to each method.



- Have students design an experiment to test which environmental conditions (light, water, temperature) are best for seed germination.

#### For learners needing support:

- Provide pre-labeled flower diagrams with color-coded parts for students who need visual support.
- Offer one-on-one or small-group assistance during the dissection activity, and provide step-by-step photo guides for identifying flower parts.

#### Extension Activities

- Plant lima bean seeds in small pots and have students observe and record germination and growth over two weeks, documenting changes in a science journal.
- Create a seed dispersal investigation: students collect different seeds from the schoolyard or



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- worksheet 1: Flowers and Seeds  
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-flowers-and-seeds-1.pdf>)
- Worksheet 2: Flowers and Seeds  
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-flowers-and-seeds-2.pdf>)
- Worksheet 3: Flowers and Seeds  
(<https://newpathworksheets.com/api/worksheet/worksheet-science-grade-5-flowers-and-seeds-3.pdf>)



- Vocabulary 1: Flowers and Seeds  
(<https://newpathworksheets.com/api/vocabulary/vocabulary-science-grade-5-flowers-and-seeds-1.pdf>)
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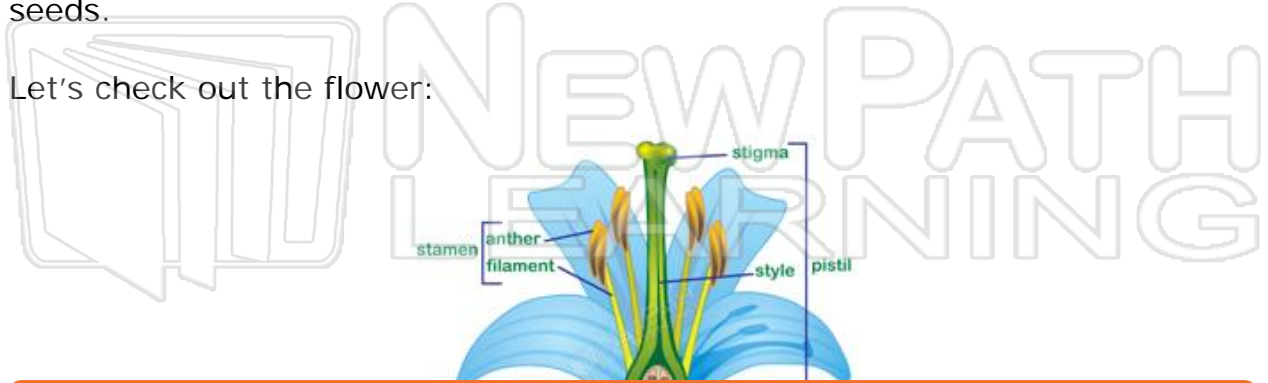


## FLOWERS AND SEEDS

### The Structure of a Flower

The **flower** is the seed factory of the plant – where the flower produces seeds.

Let's check out the flower:

A row of ten diverse children standing on a green patch of grass. Above each child is a thought bubble containing various educational icons: a cube, a microscope, a protractor, a globe, a balance scale, a red and blue flask, a pie chart, a bar graph, a bar chart with an upward arrow, and mathematical symbols (x, =, +, -).

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pistil. Pollen collects on the stigma of flowers. The ovary of a flower contains seeds. The **ovule** is the part of the plant that becomes a fruit.

*Lesson Checkpoint: Where does pollen collect on flowers?*

### An Imperfect Flower?

Can you believe that there is such a thing as an imperfect flower??

A **perfect flower** is a flower with both a stamen and a pistil.

An **imperfect flower** is a flower with only a stamen OR a pistil, not both.



## Two types of pollination

**Cross-pollination** is the transfer of pollen from the anther of one flower to the stigma of another flower.

**Self-pollination** is the transfer of pollen from anther to stigma on the same flower or to the stigma of another flower on the same plant.

## The Structure of a Seed



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right – talk about instant fertilizer!



## Germination

When the conditions are right, a seed will germinate. Roots will grow out from the seed and down into the soil. The stem of the plant will then grow upwards. Ta da... a new plant is growing!!



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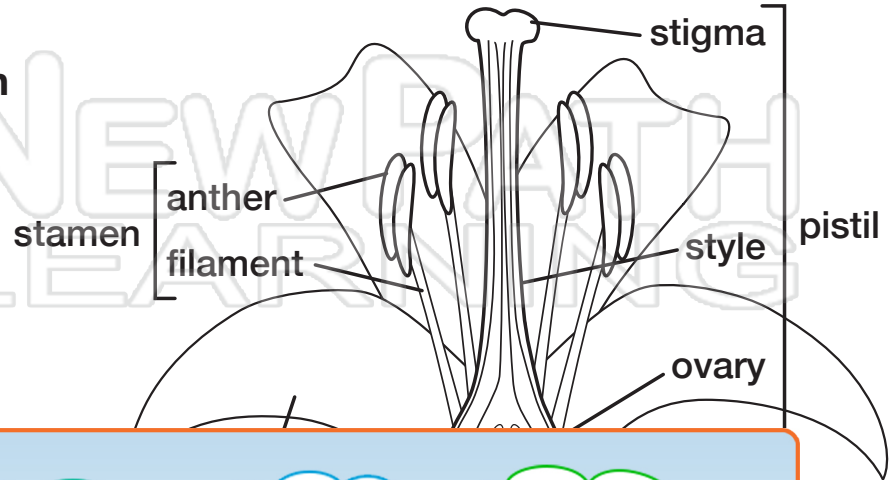
## Flower Structure

The **flower** is where the flower produces **seeds**. The **petals** of a flower are often bright and colorful which aids in **pollination** by attracting insects and animals to the flower.

The **stamen** is the male organ of a flower and includes the anther and filament.

The **anther** contains **pollen** that is a necessary for plant reproduction.

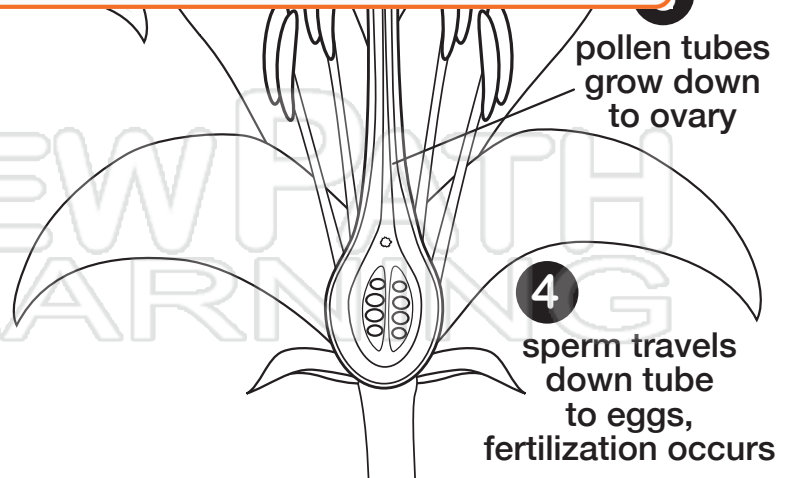
The **pistil** is the female organ of a flower and includes the stigma, style and ovary.



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**Sperm cells** from the pollen travel through the pollen tubes to join the **egg cells** in the ovary of the flower. The joining of an egg cell with a sperm cell is called **fertilization**, which results in forming a **seed**.





Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

## Structure of a Seed

The outer layer of a seed is the **seed coat** which provides protection. An **embryo** is inside the seed; it's a new plant ready to germinate. The **endosperm** is stored food for the new plant.



seed

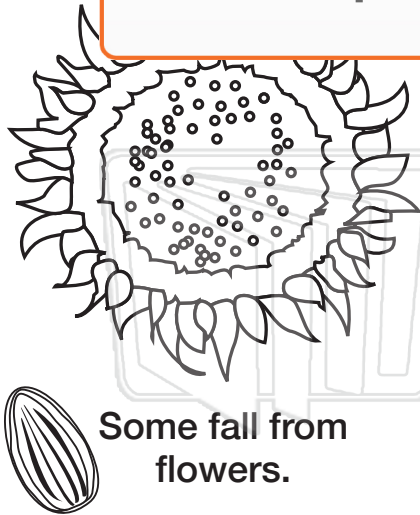
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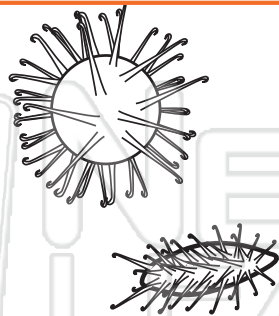
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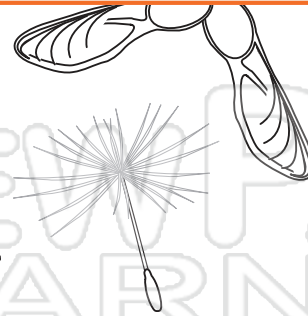
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Some fall from flowers.



Some stick to animals' fur.



Some travel by wind or water.

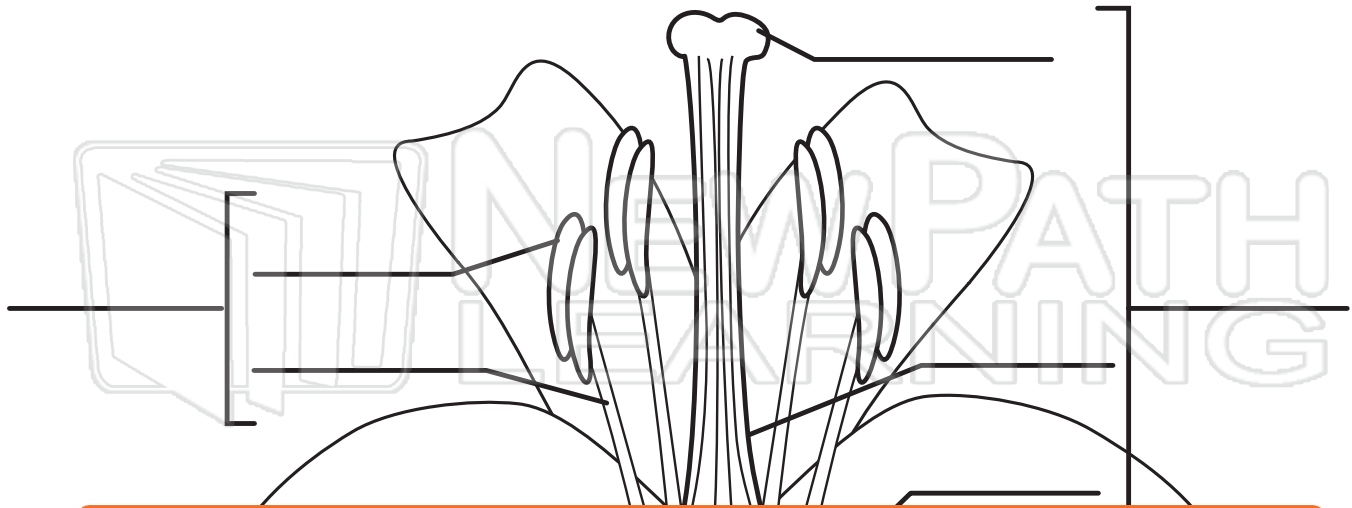


Some are eaten by animals.



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Label the flower parts and describe them.



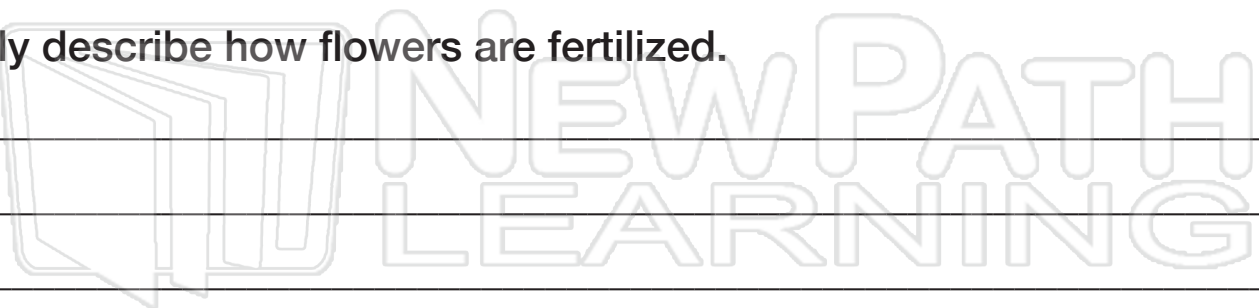
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Stam

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Pistil

Briefly describe how flowers are fertilized.





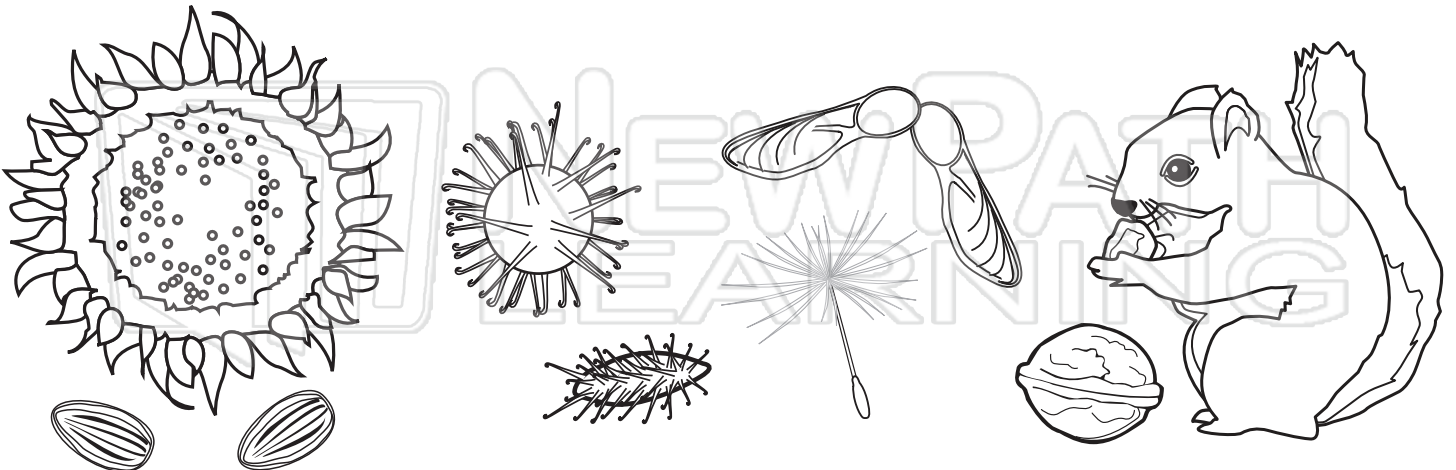
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Label the seed parts and describe them.



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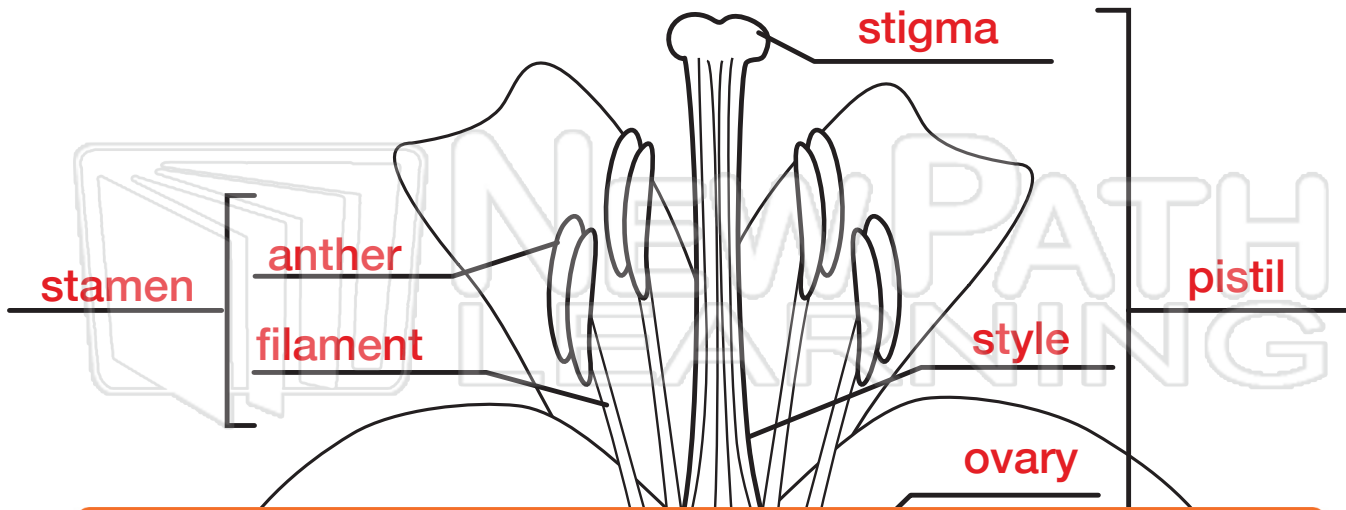
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## Answer Key

Label the flower parts and describe them.



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Stam

antl

Pistil

style and ovary. Eggs in the ovary develop into seeds.

Briefly describe how flowers are fertilized.

Pollen grains from stamen land on a pistil, pollen tubes grow from the pollen through the pistil to the ovary. Sperm cells from the pollen travel through the pollen tubes to join the egg cells in the ovary of the flower.

The egg cell joins with a sperm cell which results in forming a seed.



# Flowers & Seeds

## Answer Key

Label the seed parts and describe them.

Embryo - tiny  
plant that grows  
into an adult  
plant after it  
germinates

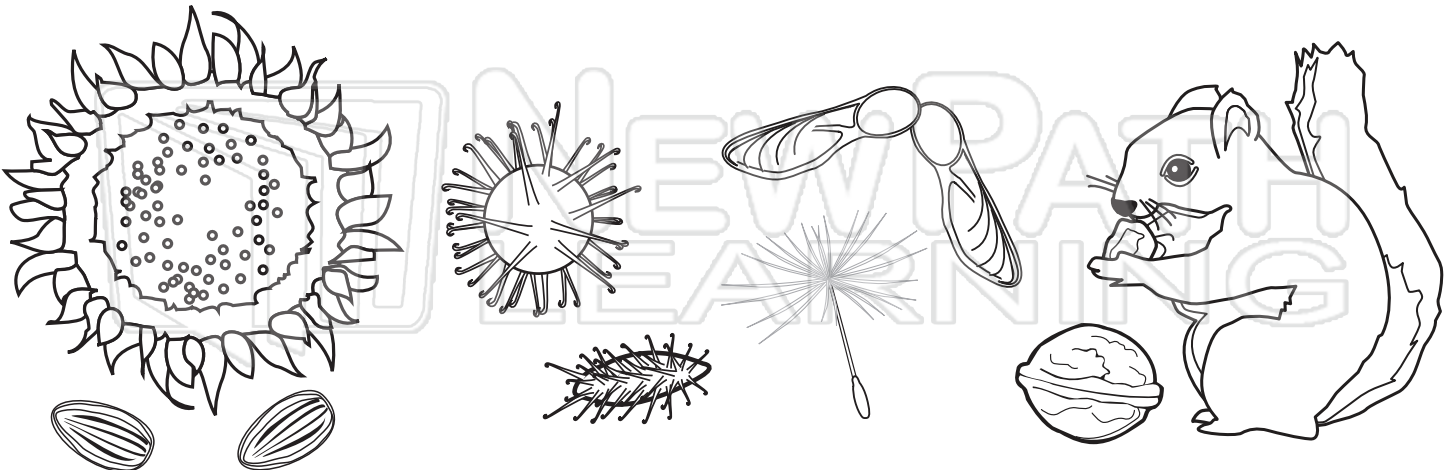


Endosperm -  
stored food to  
feed the plant  
when it starts to  
grow

Seed coat -  
protects the  
embryo

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Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 In what part of a plant are **seeds** made?

- A roots
- B stem
- C leaves
- D flowers



2 The \_\_\_\_\_ is the **female part** of the flower that **produces an egg cell**.

- A stamen
- B pistil
- C sepal
- D stigma



3 \_\_\_\_\_ **cover a developing flower bud** in order to protect the bud while it grows.

- A Sepals
- B Petals



4 Why do flowers have **brightly colored petals**?

- A to warn insects and animals of poison
- B to attract insects and animals for pollination



5



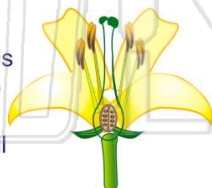
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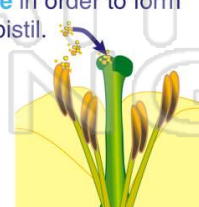
9 Where are the **egg cells** located in a flower?

- A protected in sepals
- B on top of the style
- C on the anther
- D bottom of the pistil



10 Pollen must land on the \_\_\_\_\_ at the **tip of the style** in order to form a pollen tube in the pistil.

- A stigma
- B sepal
- C ovary
- D anther



- and ovary
- C sepals and petals
- D petals, anther, and filament



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 In what part of a plant are **seeds** made?

- A roots
- B stem
- C leaves
- D flowers



(D)

2 The \_\_\_\_\_ is the **female part** of the flower that **produces an egg cell**.

- A stamen
- B pistil
- C sepal
- D stigma



(B)

3 \_\_\_\_\_ **cover a developing flower bud** in order to protect the bud while it grows.

- A Sepals
- B Petals



(A)

4 Why do flowers have **brightly colored petals**?

- A to warn insects and animals of poison
- B to attract insects and animals for pollination



(B)

5



(D)

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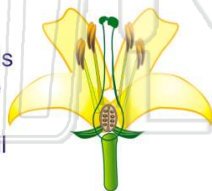
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(B)

9 Where are the **egg cells** located in a flower?

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- D bottom of the pistil



(D)

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- A stigma
- B sepal
- C ovary
- D anther



(A)

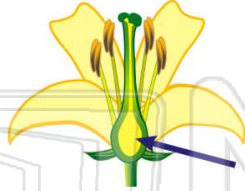


Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1

The **ovary** of a flower contains seeds.  
The **ovary** of a plant becomes \_\_\_\_\_.

- A a seed
- B nectar
- C a fruit
- D pollen



2

A **perfect flower** is a flower with \_\_\_\_\_.

- A a stamen and a pistil
- B a stamen
- C a pistil
- D neither a stamen nor a pistil



3

An **imperfect flower** is a flower with \_\_\_\_\_.

- A a stamen or a pistil
- B a stamen and a pistil



4

What **type of flower** is shown below?

- A a nonvascular flower
- B a perfect flower
- C an imperfect flower
- D a gymnosperm



5



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- C anther
- D stigma



- C travel down pollen tubes
- D travel through the flower's stem



9

What does the following diagram show?

- A the stamen of a flower
- B the pistil of a flower
- C germination of a seed
- D seed dispersal



10

The **sperm cells** from the pollen go from the stigma, down the **style** through the **pollen tubes**, to the \_\_\_\_\_ of the flower.

- A ovary
- B sepals
- C anthers
- D petals

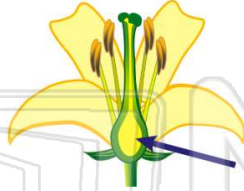




Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 The **ovary** of a flower contains seeds.  
The **ovary** of a plant becomes

- A a seed
- B nectar
- C a fruit
- D pollen



(C)

2 A **perfect flower** is a flower with

- A a stamen and a pistil
- B a stamen
- C a pistil
- D neither a stamen nor a pistil



(A)

3 An **imperfect flower** is a flower with

- A a stamen or a pistil
- B a stamen and a pistil



(A)

4 What **type of flower** is shown below?

- A a nonvascular flower
- B a perfect flower
- C an imperfect flower
- D a gymnosperm



(B)

5



(A)

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(C)

- C anther
- D stigma



- C travel down pollen tubes
- D travel through the flower's stem



9

What does the following diagram show?

- A the stamen of a flower
- B the pistil of a flower
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- D seed dispersal



(B)

10

The **sperm cells** from the pollen go from the stigma, down the **style** through the **pollen tubes**, to the \_\_\_\_\_ of the flower.

- A ovary
- B sepals
- C anthers
- D petals



(A)



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

### Match each of the following terms to its definition:

Flower

Embryo

Anther

Endosperm

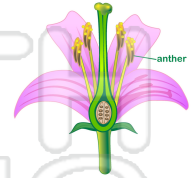
Ovary

Cross-pollination

Ovule

Imperfect flower

1. \_\_\_\_\_ - the part of the flower that contains pollen that collects on bees and butterflies that land on the flower



2. \_\_\_\_\_ - the transfer of pollen from the anther of one flower to the stigma of another flower



3. \_\_\_\_\_ of human follow



4. \_\_\_\_\_

5. \_\_\_\_\_

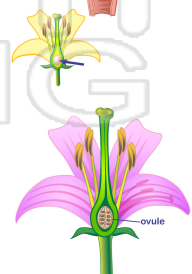
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6. \_\_\_\_\_

7. \_\_\_\_\_ - the part of the flower that contains egg cells, where seeds form and turn into fruit; a female reproductive organ where eggs are produced



8. \_\_\_\_\_ - the part of the plant that becomes a fruit; a structure that houses an egg cell





Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

**Match each of the following terms to its definition:**

Flower

Embryo

Anther

Endosperm

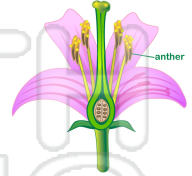
Ovary

Cross-pollination

Ovule

Imperfect flower

1. **anther** - the part of the flower that contains pollen that collects on bees and butterflies that land on the flower



2. **cross-pollination** - the transfer of pollen from the anther of one flower to the stigma of another flower



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6. imp

7. **ovary** - the part of the flower that contains egg cells, where seeds form and turn into fruit; a female reproductive organ where eggs are produced



8. **ovule** - the part of the plant that becomes a fruit; a structure that houses an egg cell

