Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chapter 3 Section 1 Heredity**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-the passing of genetic traits from parents to offspring

Facts about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

* Born in 1822 in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Grew up on a farm and learned a lot about \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Entered a monastery at age \_\_\_\_\_
* He was sent to Vienna where he could receive training in teaching.
* He had trouble \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* He failed the final exam & returned to the monastery to do research.
* He discovered the principles of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the monastery garden.

He noticed that a trait that appeared in one generation (parents) was not always   
present in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (offspring). However, in the next generation, the trait showed up again.  
  
Mendel decided to study these patterns in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Why were garden peas a good choice?

* Pea plants grow \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* There are many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ kinds available.
* They are able to \_\_\_\_\_\_\_\_\_\_\_ pollinate.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plant-has both male and female reproductive structures. So, pollen from one flower can fertilize the ovule of the same flower or the ovule of another flower on the same plant.

Why is it important that pea plants can self pollinate?

* Because eggs (in an ovule) and sperm (in pollen) from the same plant combine to make a new plant.

These are called? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ -all of its offspring will have the same trait as the parent.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-pollen from one plant fertilizes the ovule of a flower on a different plant.

* How can this happen?

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did he make sure the plants would cross pollinate?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How did he do his research?

* He studies \_\_\_\_\_\_\_\_\_\_\_\_\_\_ characteristic at a time.
* characteristic-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + - ie-hair color
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-the different forms like red, yellow, or brown are called this.

**Mendel’s 1st experiments:**

* He crossed \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to study different characteristics.
* He used \_\_\_\_\_\_\_\_\_\_\_\_\_\_ breeding plants.
  + - ie. white flower with a purple flower
* The offspring of the 1st cross is called the \_\_\_\_\_\_\_\_ generation.

The results in the 1st cross were always purple flowers. He called this trait that appeared the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- the trait that seemed to fade into the background.

**Mendel’s 2nd Experiment:**

* He allowed the 1st generation plants to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* The results: The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait (white flower) appeared.
* \_\_\_\_\_\_\_\_\_\_-a relationship between two different numbers that is often expressed as a fraction.
* Look at Mendel’s results on page 60. Calculate the dominant-to-recessive ratio for each characteristic.

**Conclusion:**

* He explained his results showed that each plant had \_\_\_\_\_\_\_\_ sets of instructions for each characteristic. Each parent donated \_\_\_\_\_\_\_\_ set of instructions.
* He published his findings in 1865, but it was not until after his death that his work was recognized.

He opened the door to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.