

# **Bean Dissection:**

**Remember to utilize lab safety!!! You will be using sharp dangerous utensils!**

Obtain your dissection set and a bean. Then proceed to the following:

## **Identify the External Features:**

Hold the bean seed in an upright position (curved toward you) so that the scar points toward you. The scar is called the *hilum*. This is where the stalk was fastened that attached the bean to the pod.

A small opening called the *micropyle* is near one end of the scar. It was through this tiny opening that the pollen tube once entered the ovule.

The entire seed is covered by a protective coat called the *testa*.

## **Draw:**

Draw the bean seed in the upright position with the scar pointing toward you and label the drawing with the bold faced words above. Give your drawing the following title: The external Structure of a Bean Seed.

## **Internal Features:**

To identify these structures, you will need to be very careful or you will destroy the tiny plant inside the seed!!!!

VERY CAREFULLY, remove the testa from the seed.

Notice the white worm-like structure which seems to be coming out at one end from between the two halves of the seed. This is the root structure called the *hypocotyl*. It will push through the micropyle of the testa and develop into the plant's root.

GENTLY, separate the two "seed halves" or *cotyledons*.

On the inside of the cotyledons, attached to one end of the hypocotyl, you will see two small folded leaves called the *plumule*. The plumules have veins and will later develop into the first two leaves of the bean seedling. (Unless you have both the hypocotyl and the plumule attached to only one cotyledon, you must obtain a new seed and begin again.)

## **Draw:**

Draw the seed half that contains both the plumule and the hypocotyl. Label the drawing with the internal features and title the drawing: "The Internal Structure of a Bean Seed."

**Clean-up:** Throw your seed parts and paper towel in the trash and replace the paper towel in the dissection tray. Return the dissection tray to the cupboard.