

Corn Seed 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:

Examine the corn seed and notice that on one side, there is a shield-like structure not present on the other side. This shield-like structure is the “seed half” or *cotyledon*.

Above, behind and on each side of the cotyledon, is extra stored food called the *endosperm*.

At the top of the seed, on the cotyledon side, you can feel a tiny projecting point. This is where the silk was attached. Feel it, then look for it.

At the bottom of the seed, is a much larger protruding point called the *cob attachment*.

Covering the entire seed is the protective *testa*.

Draw:

Make a drawing of the corn seed which is twice the natural size. Be sure that you have the broad end up and the cotyledon facing the viewer. Label the drawing with the bold words above. Give the drawing the title “External View of a Corn Seed”.

Internal Features:

Place your seed in your dissecting tray and make a longitudinal cut that passes directly through the length of the cotyledon. Be sure to make your cut from the cotyledon side of the seed.

Study the cut surface of one of the halves of the seed.

Notice the *endosperm* that makes up both the upper and back portion of the cut surface.

The *cotyledon* (you just cut it in half) is smaller and a different color than the endosperm.

It is now quite easy to see the *testa* where it covers the cotyledon. Use a dissecting needle to CAREFULLY separate the testa from the cotyledon.

Just underneath the testa, but embedded in the cotyledon tissue is the pointed leaf we call the *plumule*. This points toward the end of the seed with the silk scar.

Below the plumule, you will find the first root called the *hypocotyl*. The hypocotyl points in the direction of the cob attachment.

The tips of both the plumule and the hypocotyl can be picked up with a probe. And you can study these parts in more detail by using a hand lens.

Together, the cotyledon, plumule, and hypocotyl form the *embryo*.

Draw:

Draw the cut surface of the corn seed at twice its natural size and in an upright position. Label your drawing to show the bold words of the internal structures. Title your drawing “The Internal View of a Corn 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.