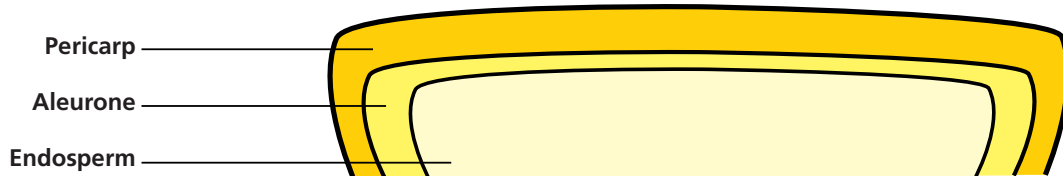


NAME _____

DATE _____

Investigating a Phenotype

In this activity you will examine an ear of corn to discover if there are consistent differences in the phenotypes of the seeds contained on the ear. The diagram below shows a longitudinal section through the upper part of a corn seed. (In reality, the pericarp and aleurone layers are much thinner than shown in the diagram.) The endosperm is the primary food storage tissue of the seed. The food storage product is starch.



Examine the seeds in three or four rows of seeds on the ear. Note here any consistent differences in the appearances (phenotypes) of the seeds.

Using sandpaper, abrade the tops from about 20 seeds in a row to expose the endosperm, which will appear white. Be sure to include samples of seeds having the phenotypes you recorded above. Clean the sanding dust before proceeding.

What color does iodine produce when it reacts with starch? _____

Place a drop of iodine solution on the abraded top of a seed. Watch for about 10 seconds for a color reaction and record it below. Repeat for each seed in turn.

Seed #	Color	Seed #	Color	Seed #	Color	Seed #	Color
1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	
5		10		15		20	

What does the difference in the color developed by the iodine tell you about the endosperm of the different seeds?

Look at the phenotypes of the seeds. Do these show a correlation with the color developed after treatment with iodine? What might this indicate?

Assuming that the phenotypes result from the actions of a pair of alleles at a single gene locus, give the genotypes and their resulting phenotypes.

_____	_____
_____	_____
_____	_____

Describe the two phenotypes you have worked with in this lab. How did the iodine test help indicate the phenotypes?

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