

## Mendel's Peas

\*Mendel will plant your first five plants after you start the program. Follow his instructions, and those on this worksheet to answer the questions. The questions are due FRIDAY either printed out or written out. DO NOT EMAIL. If you were absent Monday, use this website; <http://www2.edc.org/weblabs/WebLabDirectory1.html> and click "Mendel's peas" and follow the instructions.

HINT: You can see pea color, shape as well as pod color and shape by running the cursor over each plant.

### **PART 1- Investigation**

1. After you plant your first five plants what seven traits do the plants have? List all 7 AND their variations (ex; pea shape- could be round or wrinkled)
2. Is pea shape a gene or allele? What about "round" peas, is that a gene or allele?
3. Cross two plants and write down your observations the different offspring of those plants.
4. Do any of your "baby plants" have characteristics that neither of the parents show? If so, why do you think this is?
5. Are there any traits one of the parents have, that none of the offspring have? If so, what are they AND why do you think the offspring don't have them?
6. Do FOUR more crosses but only look at ONE characteristic for each cross, for example pea color could be the characteristic you focus on for the first one, so only pay attention to the pea color of the parents and the offspring. RECORD ALL information for ALL FOUR crosses..  
Example;  
For cross #1; parent 1=green peas, parent 2=yellow peas → all offspring have yellow peas
7. Look closely at the parents and the offspring results of the last four crosses you did. Write down which allele is dominant AND why you think this. (hint; maybe write out a punnett square).  
Example; yellow pea color is dominant because it was the only color produced in the cross.

### **PART 2-Crossings**

8. Follow the instructions for crossing a plant with itself. Why did a plant with round peas, when crossed with itself, produce plants with wrinkled peas?

9. Why did the next cross of two plants with wrinkled peas give only babies with wrinkled peas?

**PART 3- Crossing flower colors**

10. Which color of flower was dominant, purple or white? How did you learn this?

\*After you cross two of the squares (plants) you can click “view notepad” and select which pea shape you think is dominant and click “check”. You can also change what characteristic you are investigating by pulling down the menu in the top left hand corner underneath “select a trait”.

11. Now do the same with the rest of the 7 characteristics. Which allele is dominant for each characteristic?

- a. round or wrinkled peas
- b. green or yellow peas
- c. yellow or green pods
- d. constricted or inflated pods
- e. tall or dwarf plants
- f. axial or terminal flowers

12. Did your answers for #11 match your answers for #7 (remember you will only have four characteristics from #7). Are your answers the same? Why or why not?