Samantha, Bahiyah, Alex 1-29-18

FAST PLANT INTRO:

Summary: In this lab we will be observing the life cycle of the Fast plant, genetics, phenotypes, and characteristics. The procedure of this lab is to take parental seeds and observe each parental type which is homozygous with the phenotypes we will investigate. In order to complete our lab successfully everyone will need to have good background knowledge on genetics. The purpose of the procedure is to understand the basics of mendelian genetics, the use of punnett squares, chi-square analysis of data, and the life cycle of diploid organisms useful in genetics studies.

- **Monohybrid**: If a parent plant differs in just one set of phenotype (tall v. short)
- **Dihybrid**: If parent differs in more than one phenotype (tall v. short, green v. yellow, etc)

BACKGROUND KNOWLEDGE QUESTIONS:

1. How will I know which allele is dominant and which allele is recessive?
2. Am I dealing with a monohybrid or a dihybrid cross? How will this affect my results?
3. How ill I know what F2 the plants will look like? What phenotypic ratio will I expect in the F2?
4. If my F1 plants are accidentally pollinated by one of the parental types or one of the other mutant types, how will I know that this has happened?
5. How will I know that my results are valid?

F_1 generation (parent) seeding observation: **seed-B** - tiny, bright yellow, smooth, and round.
Date F_1 seed planted: 1/30/18
Dates of pollination: 2/15/18

Phenotype	When born-	Later on-	Total
My Data	Purple leafs	Turned green stems and yellow leafs	
Class Data for the Same F_1			

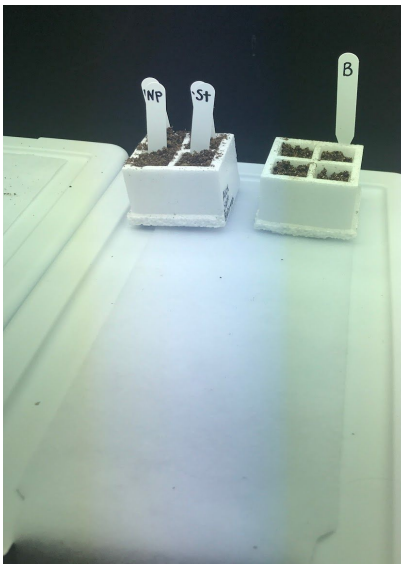
1. What is the phenotype of your mutant parent?

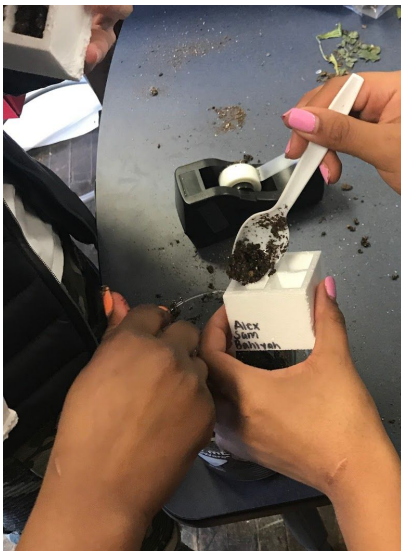
2. What is the phenotype of you F_1 plants?

3. Which allele(s) is/are recessive? Explain how you know.

4. Are you dealing with a monohybrid cross or a dihybrid cross? Explain how you know.

Label	Phenotype	Genotype	Dominant or Recessive?
ST	Standard Purple Stem Hairy	ANL/ YGR	D
NP	Non-Purple Stem	anl/anl	R
YG	Yellow-Green Leaf	ygr/ygr	R
NG	Non-Purple stem yellow-green leaf	anl/anl ygr/ygr	R





Day 1- observations:

The measurements: Feb, 5

St: 0.8 cm

Yg: 1.3 cm

Np: 1 cm

Ng: 1.2 cm

B: 1 cm

Observations:

- Plants had a white root below the plant (all of them).
- One of the B plants didn't grow at all.
- St was the smallest of the grown plants.
- The tallest plant was Yg.
- Np and Ng, had similar colours while different from the rest at the same time.

Day 2 Observations

The measurements: Feb 6.2018

St: 1.5 cm **Yg:** 1.7cm **Np:** 1.4 cm **Ng:** 1 cm **B:** 1.8 cm	Observations: ➢ One of the B plants didn't grow at all. ➢ Plant B have purple roots (All) ➢ Ng was the smallest of the grown plants. ➢ The tallest plant was Yg. ➢ Yg and St are a darker green then both Ng and Np

Day 3 observations

The measurements Feb 12, 2018

St: 6.3 cm **Yg:** 0 cm **Np:** 4 cm **Ng:** 0 cm **B:** 6cm	Observations: ➢ ST grew 5 cm, a part of the plant is bending. ➢ Yg The plant grew before and it now died. ➢ NP grew 3 cm they are perfectly straight not bending. ➢ NG This plant also grew before and now it died. ➢ B grew 5 cm and two cubes behind the front ones still did not grow. ➢ B has grown a small purple leaf. ST has a purple color in the bottom of the stem


NP


B

The measurements Feb 13, 2018

St: 7 cm **Yg:** 1 cm **Np:** 4 cm **Ng:** 1 cm **B:** 18cm (tallest)	Observations: ➢ St has started to die off ➢ Ng and Yg have started to grow ➢ B has grown to be the tallest plant

The measurements Feb 14, 2018

St: 6 1/2 cm **Yg:** 1 cm **Np:** 14 1/2 cm **Ng:** 1 cm **B:** 16cm (tallest)	Observations: ➢ St has started to die off ➢ Ng and Yg have started to die ➢ B has grown to be the tallest plant ➢ Np second tallest ➢ B tallest

Feb 15 notes/ observations:

Np: grew to 16 centimeters

- **Moss grew in Np plant.**
- **Bottom of B plant is purple**

Predictions for cross sex-linked traits of B & NP	**yrg**	**YRG**
anl	**yrganl**	**YRGanl**
anl	**yrganl**	**YRGanl**

This prediction means that our child plant will be fully yellow leaves - with green stems. However, if our plants are as we think, then our stem of the child plant will have purple-yellow colours.

Observations for 2/26

- All Fast plants got pods
- Some are still the same height as before
- Others have leaves that are starting to dry out.

Observations for 3/1/18

This week's observations:

- Our plants for the container of (NP) is about to give "birth" in about 1 more week.

- As for our B plant, it still seems to be growing and seems to be ready to give "Birth" in two more weeks.