Station 1

Use the word bank and your notes to complete each statement.

Word Bank:
Different
Genetic
Heterozygous
Homozygous
Letters
Physical
Yellow
Same

1. Purebred - Also called _____ and consists of gene pairs with genes that are the _____.
2. Hybrid - Also called _____ and consists of gene pairs with genes that are _____.
3. Genotype is the actual _____ makeup represented by _____.
4. Phenotype is the _____ appearance of a trait, such as a _____ body color.

Fill in the blank:

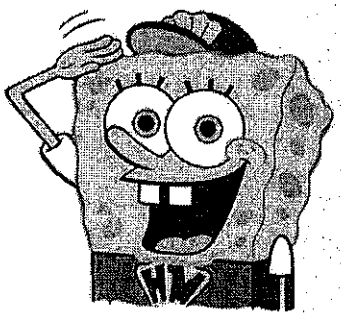
5. A test cross is carried out when you are trying to determine if an individual has a _____ or _____ form of a trait. It is done by mating that individual with another individual with a _____ genotype.

6. The genotype of a carrier is _____. This can only be used when the trait is choose one: (dominant/recessive) _____.

Station 2: 2 Factor Cross

Key:

Trait	Dominant Gene	Recessive Gene
Body Shape	Squarepants (S)	Roundpants (s)
Body Color	Yellow (Y)	Blue (y)
Eye Shape	Round (R)	Oval (r)
Nose Style	Long (L)	Stubby (l)



SpongeBob is heterozygous for his yellow body color and his squarepants, while his wife SpongeSusie is blue and has roundpants. Use this information to answer the following questions.

1. Give the genotypes for each.
SpongeBob = _____ SpongeSusie = _____

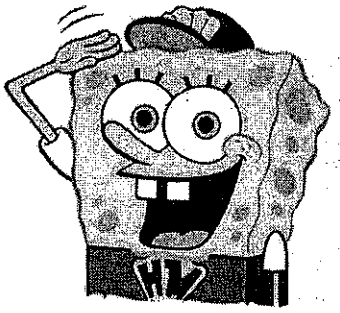
2. What are the possible gamete combinations for each person?
SpongeBob = _____ SpongeSusie = _____

3. Set up a Punnett square to predict the genotypes and phenotypes for their first child. (If you have time, complete the problem.)

Station 3: 2 Factor Cross

Key:

Trait	Dominant Gene	Recessive Gene
Body Shape	Squarepants (S)	Roundpants (s)
Body Color	Yellow (Y)	Blue (y)
Eye Shape	Round (R)	Oval (r)
Nose Style	Long (L)	Stubby (l)



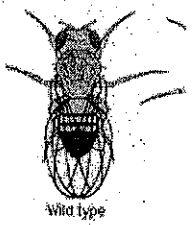
SpongeBob is heterozygous for his round eyes and his long nose. SpongeSusie is also heterozygous for her round eyes. She too has a long nose. But her father had a stubby nose.

1. Carry out all of the steps necessary to set up a Punnett Square to show the possible crosses that could take place to produce their first child.

2. Predict the phenotype ratio of the possible traits their first child could have.

Station 4: X-Linked Trait

In fruit flies, long wings are x-linked dominant to short (vestigial) wings. Complete a cross between a short winged male and a heterozygous female. What are the possible genotypes and phenotypes for the offspring?



Wild type

Vestigial wings

Station 5: Incomplete Dominance

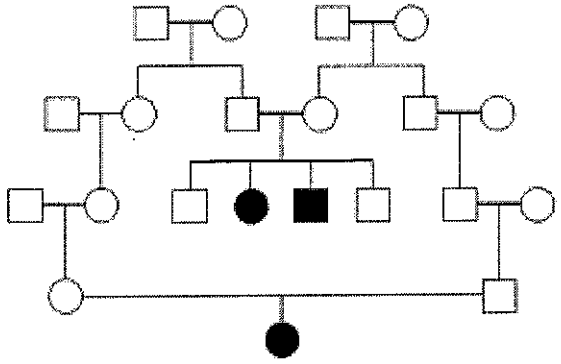
In certain flowers, blue and yellow flowers are incompletely dominant to each other. Show the cross between a pure blue flower and a pure yellow flower. Identify the phenotypic and genotypic ratios of the offspring.

Station 6: Codominance

In some chickens the gene for feather color is controlled by codominance. Feathers are either black or white. The heterozygous condition is called barred or erminette. Show the cross between a rooster with black feathers and a barred female. What is the probability that the offspring will inherit barred feathers?

Station 7: Pedigrees

Identify each pedigree as autosomal recessive, autosomal dominant, X-linked recessive, or Y-linke



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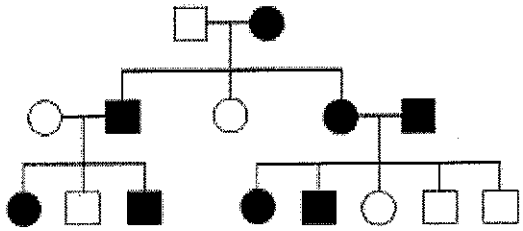

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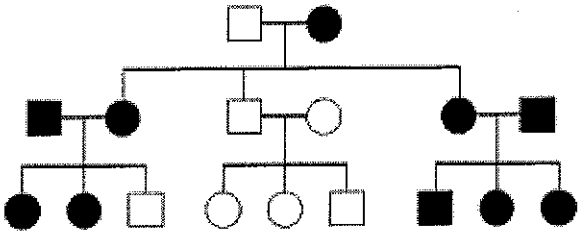

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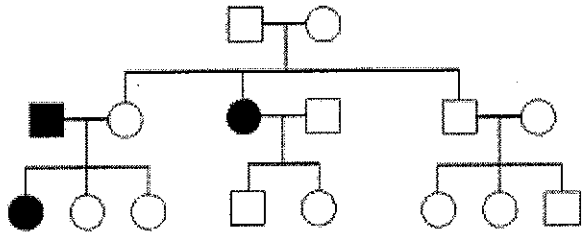
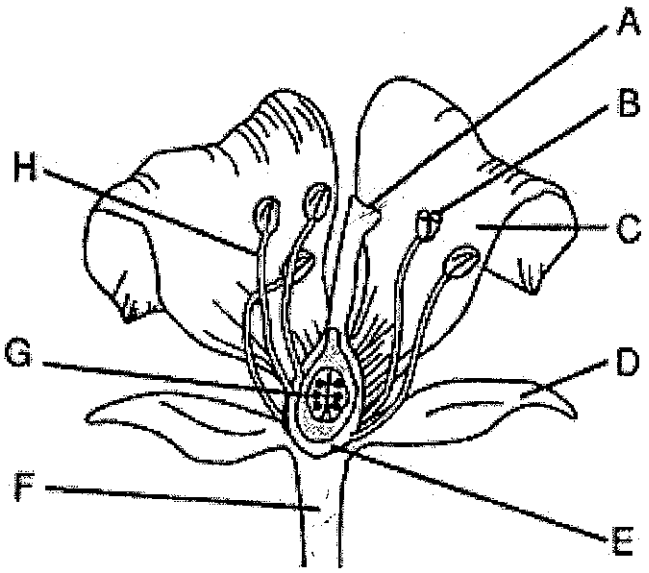


d.

Station 8: Flower Diagram

Label the following flower parts on the diagram:

1. Ovary _____
2. Ovule _____
3. Anther _____
4. Stigma _____
5. Style _____
6. Filament _____

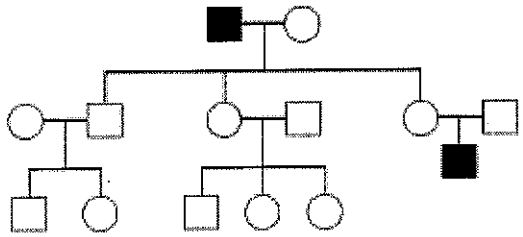


7. List the parts that make up the pistil: _____

8. List the parts that make up the stamen: _____

Station 9: Pedigrees

Identify each pedigree as autosomal recessive, autosomal dominant, X-linked recessive, or Y-linke



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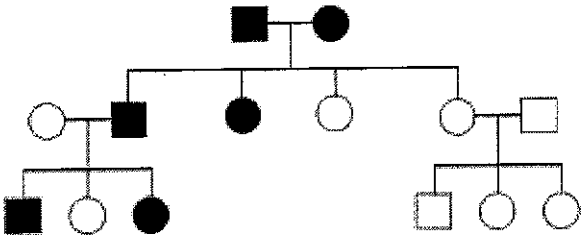

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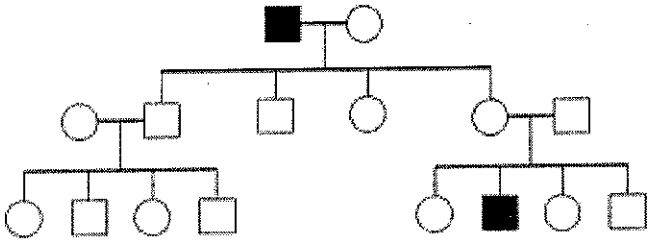

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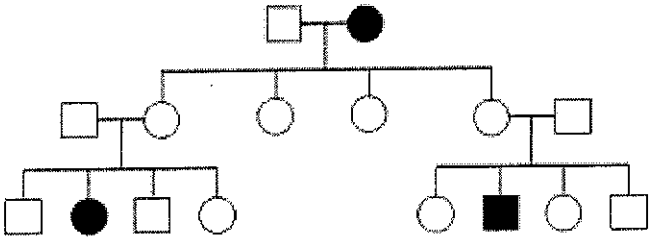

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