Unit 5: Genetics
PowerPoint Questions

Gregor Mendel- ***responsible for our laws of inheritance***

1. What organism did Mendel study?

2. When was Mendel's work recognized?

3. How is Mendel referred to today?

4. In what country did Mendel do his research on peas?

5. Mendel stated that physical traits were inherited as _____.

6. Today we know that particles are actually what?

Terminology

7. Define these three terms:
   a. trait -

   b. heredity -

   c. genetics -

8. Name & describe two types of genetic crosses.

9. What is used to solve genetic crosses?

10. Sketch a Punnet square & show how they are used to solve a genetics problems.

11. What are alleles & what are the two forms?

12. Explain the difference between dominant & recessive alleles.

13. Using a letter of the alphabet, show how each allele would be represented.

14. What is a genotype and write 3 possible genotypes?

15. What is a phenotype and write possible phenotypes for your genotypes in question 18?

16. Using these alleles, R = red flower and r = yellow flowers, write all possible genotypes & phenotypes.

17. What are homozygous genotypes?

18. Write a homozygous dominant genotype.

19. Write a homozygous recessive genotype.

20. What is meant by a heterozygous genotype?

21. Write a heterozygous genotype.

22. Heterozygous genotypes are also called _____.

Pea Experiments

23. Give 4 reasons that Mendel used garden peas, ***Pisum sativum***, for his experiments.

24. Explain how Mendel cross pollinated his pea plants.

25. How did Mendel's experimental results compare to the theoretical genotypic ratios? Explain.

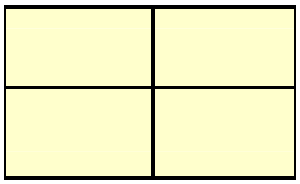
26. What does P_1 mean?

27. What is the F_1 generation?

28. What is the F_2 generation?

29. Show all your work for solving a P_1 monohybrid cross for seed shape.
Trait:
Alleles:

P_1 cross: _____ x _____



Genotype _____
Phenotype _____
G. Ratio _____
P. Ratio _____

30. The offspring of the above cross are called the _____ generation.

Mendel's Laws

31. _____ are responsible for inherited traits.

32. Phenotype is based on _____.

33. Each trait requires _____ genes, one from each _____.

34. State the Law of Dominance and give an example.

35. State the Law of Segregation and tell when alleles are "recombined".

36. State the Law of Independent assortment & tell what type of crosses show this.

37. Show how to work an F_1 dihybrid cross for seed shape & seed color.

Traits:
Alleles:

F1 cross _____ x _____

Genotypes *Phenotypes*

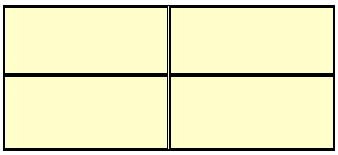
Incomplete and Co-Dominance

38. Incomplete dominance occurs in _____ and produces a phenotype _____ the phenotype of the two parents.

39. Show your work solving a cross for flower color in snapdragons when there is **incomplete dominance**.

Trait:
Alleles:

Cross: RR x rr



Genotype _____
Phenotype _____
G. Ratio _____
P. Ratio _____

40. What is codominance & give an example?

41. Write the genotypes for each of these blood types:

type A
type B
type AB
type O

42. Solve this codominance problem: I^BI^B x I^Ai.

43. Solve this codominance problem for blood type: ii x I^AI^B.

Sex-Linked Traits

44. What are sex linked traits?

45. Name the sex chromosomes.

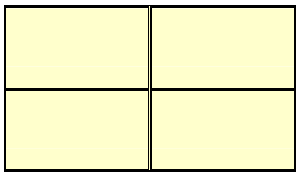
46. Write the genotype for male and for female.

47. Most sex-linked traits are carried on what chromosome?

48. Give an example of a sex-linked trait in fruit flies.

49. Show the results of crossing a red-eyed male (X^RY) with a white-eyed female (X^rX^r) fruit fly.
RR =
Rr =
rr =
XY =
XX =

Cross: _____ x _____



Genotype _____
Phenotype _____
G. Ratio _____
P. Ratio _____

50. What is meant by a female carrier?

51. Name a disease that can be carried in this manner.