Science 9
Unit A Biological Diversity
Unit Review Package

1. Describe the variety of biological species on Earth.

2. What is biological diversity?

3. What is variation?

4. Describe the types of interdependencies (3 of them) between and among species. Provide an example of each.

5. What are niches? Provide an example.

6. How does natural selection work? Use the pepper moths in your explanation.

7. What are heritable traits? Provide an example.

8. Explain the differences between continuous and discrete variations.

9. Does the environment affect variation? Explain.

10. How do asexual and sexual reproductive processes differ?

11. Illustrate each of the following:

Budding	Binary fission
Spore Production	Vegetative reproduction

12. Explain how the different types of reproduction (sexual and asexual) affect variation.

13. What carries the genetic information from parent to offspring?

14. Compare DNA and the genetic code.

15. Compare genes and chromosomes.

16. Illustrate and label the following cell divisions. Indicate their purpose.

Mitosis	**Meiosis**
Purpose:	Purpose:

17. Describe the difference between dominant and recessive traits.

18. Compare and contrast purebreds (homozygous) with hybrids (heterozygous).

Information is provided on the genetics of Zorks in the following table:

Allele	*Trait*	*Dominant/Recessive*
W	**Two Wings**	**Dominant**
w	**No Wings**	**Recessive**
N	**One Leg**	**Dominant**
n	**Two Legs**	**Recessive**
R	**Green Skin**	**Dominant**
r	**Yellow Skin**	**Recessive**
B	**Thick Eyebrow**	**Dominant**
b	**Thin Eyebrow**	**Recessive**

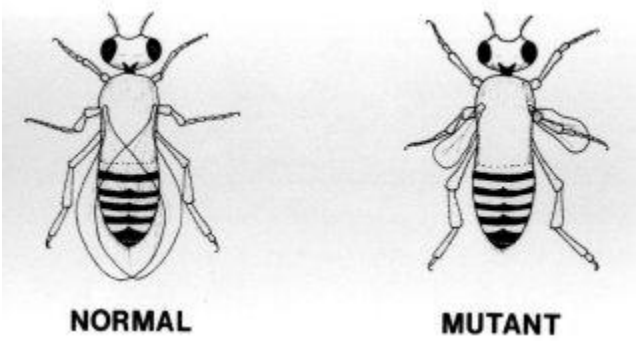
19.

a. Using the above information, write the **physical appearance** for each of the following genetic codes

   i. Rr _____
   ii. BB _____
   iii. Nn _____
   iv. ww _____

b. Using the above information, write one possible **genotype** for each trait below

   i. yellow skin _____
   ii. two wings _____
   iii. thin eyebrow _____
   iv. one leg _____



In fruit flies, **normal wing shape** is **dominant** to **mutant wing shape** (**recessive**).

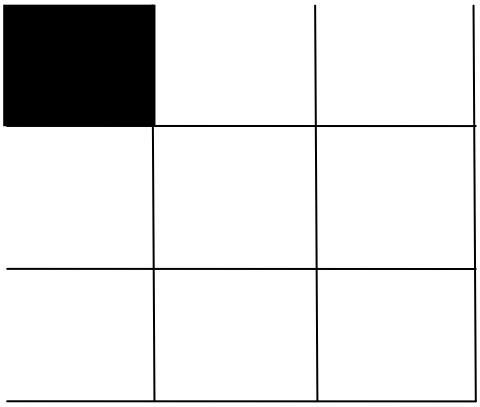
20. Identify a letter to represent the normal wing shape (dominant) allele and the mutant wing shape (recessive) allele.

a. Dominant allele _____
b. Recessive allele _____

21. A heterozygous normal winged fruit fly (parent 1) is crossed with a homozygous recessive mutant wing fly (parent 2). Remember that heterozygous means they have two different traits (hybrids) and homozygous means they have the same two traits. **Identify the genotypes (genetic coding) of the parents.**

a. Parent 1 _____
b. Parent 2 _____

22. Make a Punnett square for the mating of the hybrid normal winged fly with the purebred mutant winged fly.



23. Identify the genotypes (genetic code) and phenotypes (physical appearance) of the offspring.

a. Offpsring 1 Genotype: _____ Phenotype _____
b. Offpsring 2 Genotype: _____ Phenotype _____

24. What is extinction? How is it different than extirpation?

25. What causes extinction and extirpation?

26. Explain why/how the wolves in Yellowstone are important to biological diversity.

27. Explain the difference between in-situ conservation and ex-situ conservation.

28. Describe two technologies that affect biological diversity.