

Name: _____

Date: _____

Period: _____

KEY

Honors Biology: Chromosomal Basis of Inheritance and Sex-Linked Genes (9.16-9.21)
Guided Reading

How can patterns of inheritance be explained using a knowledge of chromosomes?

1. On your own... Read Sections 9.16-9.21

2. Define the following terms:

- Chromosome Theory of Inheritance: the behavior of chromosomes during meiosis explains patterns of heredity
- Linked genes: genes on same chromosome
- Recombination frequency: the % of recombinant alleles
- Sex chromosomes: determine gender (XX ♀, XY ♂)
- Sex-linked gene: genes whose alleles are on the X chromosome

3. Looking at figure 9.16 on p. 171, How can Mendel's Laws be explained using a knowledge of chromosomes?

As chromosomes line-up (metaphase) and segregate (anaphase), alleles on these chromosomes end up in gametes in equal #'s of each possible combo.

4. Why do "linked genes" NOT follow Mendel's Law of Independent Assortment?

because they are on the same chromosome... so they do not end up in diff. gametes

5. What are recombinant gametes? How are they related to linked genes?

Gametes that have allele combinations not found in parents. When linked genes are "reshuffled" by crossing over, the result is recomb. gametes

