

Big Idea #10: Hereditary information is inherited and expressed. (The Laws of inheritance in sexual reproduction are determined by genetics. The gene is the common functional unit of heredity.)

- a. The DNA that comprises an organism's genome is organized into chromosomes. (S11.B.2.2.1)
- b. Genes and their related proteins comprise chromosomes. (S11.B.2.2.1)
- c. One or more pairs of genes code for the expression of inherited traits. (S11.B.2.1.2; S11.B.2.1.4; S11.B.2.2.1)
- d. Two or more versions of a gene (alleles) contribute to the expression of inherited traits. (S11.B.2.1.4; S11.B.2.2.1)
- e. Meiosis involves a two-step nuclear division reducing the number of chromosomes in half producing gametes. (S11.B. 1.1.3; S11.B.2.1.4; S11.B.2.2.1 & 2 & 3)
- f. During the process of meiosis genetic recombinations may occur contributing to genetic variability within a population. (S11.B. 1.1.3; S11.B.2.1.4; S11.B.2.2.1 & 2 & 3)
- g. Patterns of inheritance reflecting how genes interact and express themselves (including dominant, recessive, codominance, incomplete dominance, sex-linked, sex-influenced, multiple alleles) can be predicted, observed, and described. S11.B.2.1.4; S11.B.2.2.1 & 2 & 3)
- h. The Punnet square is a tool that can be used to predict the probability of an offspring's genotype and phenotype. (S11.B.2.2.1 & 2 & 3)

Tuesday & Wednesday November 23 & 24 – Chapter 10 Test

11.1 The Work of Gregor Mendel

- 1.—11.1 Lesson Overview PowerPoint (37 slides)
- 2. The Work(sheet) of Gregor Mendel hand in
- 3. 11.1 Skills Workbook: (11.1 due next Tuesday after break)

Describe Mendel's studies & conclusions about inheritance Describe what happens during segregation

Begin Mendelian Genetics

- 1. "Mendelian Genetics in the Simplest Terms I Can think Of" PPT lesson with notes
- 2. Simple Monhybrid & Dihybrid Cross Worksheet (Frog Biology Workbook) together
- 3. Blast Animations: Single Trait Crosses <u>http://media.pearsoncmg.com/bc/bc_0media_bio/blast/index.htm?single_trait_cross</u> Genetic Variation: Independent Assortment <u>http://media.pearsoncmg.com/bc/bc_0media_bio/blast/index.htm?independent_assortment</u>

Two Trait Crosses http://media.pearsoncmg.com/bc/bc_Omedia_bio/blast/index.htm?two_trait_cross

4. Marshan Genetics – if time

Review concepts & terms of genetics & construct Punnett squares in examples Randomly select the genotype of an organism & construct its phenotype

- 11.2 Applying Mendel's Principles will probably still need to finish #2, #3 & #4 from yesterday in periods 1&4
 - 1. Review with 11.2 Lesson Overview PowerPoint (52 slides)
 - 2. SpongeBob Genetics Problems: SB Gen 1, SB Gen 2 & SB Dihybrid check answers as you go finish Tuesday
 - 3. 11.1 due after break

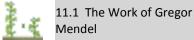
Explain how geneticists use the principles of probability to make Punnett squares Explain the principle of independent assortment Explain how Mendel's principles apply to all organisms

**Animation: http://www.sumanasinc.com/webcontent/animations/content/mendel/mendel.html

Tuesday November 30

- 1. Collect, check & go over 11.1 homework at the end of class
- 2. Finish SpongeBob problems
- 3. Hand out notes: Genetics & Math
- 4. Lab: The Ups & Downs of Probability
- 5. Homework: 11.2 Study Workbook & SpongeBob Genetics Quiz tomorrow (?)

Explore how probabilities can be used to predict outcomes



Compare predicted outcomes to experimental outcomes

Substitute properly marked coins for gamete cells & toss the coins to represent offspring

Determine the expected offspring & compare it to observed offspring obtained through coin tossing

Wednesday December 1: 11.3 Other Patterns of Inheritance

- \rightarrow go over additional genetics & math notes & examples
- \rightarrow finish up/down labs
- 1. Collect, check & go over & 11.2 homework at the end of class
- 2. SpongeBob Genetics Quiz: (genetics problems I & II only, no dihybrid)
- 3. 11.3 Lesson Overview PowerPoint (15 slides) or my complex inheritance PPT
- 4. SpongeBob Genetics: Incomplete Dominance(or worksheet w/ codominance problems also) check answers & hand in
- 5. 11.3 due tomorrow, & 11.4 due Friday



11.2 Applying Mendel's Principles

Describe the other inheritance patterns Explain the relationship between genes & the environment

Thursday December 2: 11.4 Meiosis

- 1. Collect, check & go over 11.3 homework at the end of class
- 2. My Meiosis notes
- 3. Cells Alive Meiosis Animation http://www.cellsalive.com/meiosis.htm
- 4. 11.4 Lesson Overview PowerPoint (50 slides)
- 5. Frog Workbook worksheet: Stages of Meiosis & Comparing Mitosis & Meiosis
- 6. Lab: Comparing Mitosis & Meiosis
- 7. Homework: 11.4 Study Workbook & Vocab Review



11.3 Other Patterns of Inheritance

11.4 Meiosis

Contrast the number of chromosomes in body cells & gametes Summarize the events of meiosis Contrast meiosis & mitosis Describe how alleles from different genes can be inherited together

BioFlix: Mitosis <u>http://media.pearsoncmg.com/bc/bc_0media_bio/bioflix/bioflix.htm?cc6mitosis</u> BioFlix: Meiosis <u>http://media.pearsoncmg.com/bc/bc_0media_bio/bioflix/bioflix.htm?cc6meiosis</u>

Friday December 3

- 1. Collect 11.4/voc rev check while class completes Comparing Mitosis & Meiosis
- 2. BioJunction Mendelian Genetics PowerPoint (slides 1-64) & Notes
- 3. Review for Test poker? Jeopardy

Monday December 6:

- 1. Chapter 11 Test
- 2. Human Chromosomes

a) Genetics & Heredity Concept Map
b) My Human Heredity Notes page 1 & PowerPoint (slides 1-5)
c) Lab 21: A Chromosome Study – *cut out chromosomes* – <u>or do simpler giant version</u>
d) Chapter 14 Study Workbook

Learn what a karyotype is Prepare a karyotype of a normal human's chromosomes Prepare a karyotype of an abnormal human's chromosomes