

Day
of
Week

Date

Skill

Plan

<p>M 09/22/14</p>	<p>Unit 2: Metabolism: Photosynthesis, Cellular Respiration & Fermentation <u>Unit questions:</u> *I will understand the components required for photosynthesis and cellular respiration. *I will be able to compare and contrast the two processes. *I can distinguish between aerobic and anaerobic respiration and know which process produces the most energy. *I will understand fermentation.</p>	<p>Opening: Individual study time. Followed by few mins to answer any questions and a brief review [15min] Test: Metabolism: Photosynthesis, Cellular Respiration & Fermentation Read articles while awaiting others to finish. Begin to Discuss: DNA structure, function, history [Watson & Crick,] - If time Video to introduce with general overview before Destiny: History of DNA http://www.teachertube.com/video/history-of-dna-113347 with Questions [23 mins]</p>
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<p>T 09/23/14</p>	<p>Unit 3: DNA, Protein Synthesis, Genetics and Biotechnology Obj. # = 3.1.1-3, 3.3 Essential? = # 1 Unit ? = #1, 3, 5 Cont. ? = #1, 2 'I will' = # 9</p>	<p>Opening: Baby Mice Formative Assessment Probe Life Sc Assess. P 17 Post assessment: discuss probe. Discuss, or continue: DNA structure: sugar phosphate backbone with matching base pairs, double helix/ladder structure, polarity, function, history with Scientists Practice: DNA Origami - Honors DNA color sheet- Reg Clwk to Hmwk: DNA Info & Coloring Diagram</p>
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W 10/01/14

Obj. # = 3.1.1-3, 3.3
Essential? = # 1
Unit ? = #1, 3, 5
Cont. ? = #1, 2
'I will' = # 9

Opening: Review DNA Notes

Quiz:

Discuss: Destiny visit, DNA technology, Restriction enzymes,

Technology: Learn to load/unload micropipette tip, read & set the volume, and use the micropipettor.

Real World Practice: simulated case to use restriction enzyme to 'cut' DNA and run in 'gel' to determine the thief in "The Case of the Crown Jewels".

[Combine 3rd hr Bio classes for Technology and Real World

Application.]

H 10/02/14

Obj. # = 3.1.1-3, 3.3
Essential? = # 1
Unit ? = #1, 3, 5
Cont. ? = #1, 2
'I will' = # 9

Opening:

BIOTECHNOLOGY: Destiny Bus- Gel Electrophoresis Lab

Opening: Complete Destiny Bus Lab Questions

Review: Gel Electrophoresis Lab Data & answer any questions students may have.

Discuss: DNA replication with guided notes

Classwork/Homework: Pairs of students create, swap & replicate strands of DNA.

F 09/26/14

**Obj= 1.1.3, 1.2.2,
3.1.1-3**
Essential? = # 1
Unit ? = #1, 2, 4
Cont. ? = #1, 2
'I will' = # 1, 2, 3

EXTRA

EXTRA:

Objectives

- Bio.1.2.2 Analyze how cells grow and reproduce in terms of interphase, mitosis and cytokinesis.
- Bio.3.1.1 Explain the double-stranded, complementary nature of DNA as related to its function in the cell.
- Bio.3.1.2 Explain how DNA and RNA code for proteins and determine traits.
- Bio.3.1.3 Explain how mutations in DNA that result from interactions with the environment (i.e. radiation and chemicals) or new combinations in existing genes lead to changes in function and phenotype.
- Bio.3.2.1 Explain the role of meiosis in sexual reproduction and genetic variation.
- Bio.3.2 Understand how the environment, and/or the interaction of alleles, influences the expression of genetic traits.
- Bio.3.2.2 Predict offspring ratios based on a variety of inheritance patterns (including: dominance, co-dominance, incomplete dominance, multiple alleles, and sex-linked traits).
- Bio.3.3 Understand the application of DNA technology.
- Bio.3.3.1 Interpret how DNA is used for comparison and identification of organisms.
- Bio.3.3.2 Summarize how transgenic organisms are engineered to benefit society.
- Bio.3.3.3 Evaluate some of the ethical issues surrounding the use of DNA technology (including: cloning, genetically modified organisms, stem cell research, and Human Genome Project).
- Bio.4.1.2 Summarize the relationship among DNA, proteins and amino acids in carrying out the work of cells and how this is similar in all organisms.
- Bio.3.2.3 Explain how the environment can influence the expression of genetic traits.
- Bio 1.1.3 Explain how instructions in DNA lead to cell differentiation and result in cells specialized to perform different functions in multicellular organisms

Curricular Framing ?s

1- Why is it important for cells to replicate?

2- Defend the statement "Government backed stem cell research should be continued."

I will . . .

- 1 -understand the structure of DNA and RNA and the purposes of each
- 2 -understand the process of replication and protein synthesis
- 3 -discuss how cells that contain the exact same DNA carry out a variety of functions
- 4 -learn how the knowledge gained from the Human Genome Project has benefitted mankind
- 5 -understand the stages in the cell cycle and how the processes of mitosis and meiosis are alike and different.
- 6 -know the definitions of terms associated with Mendelian and Non-mendelian genetics
- 7 -be able to complete monohybrid and dihybrid crosses as well as sex linked, incomplete and co-dominance crosses
- 8 -have an understanding of the genetic causes and impact on animals of albinism, sickle cell anemia, cystic fibrosis, and Huntington's disease
- 9 -understand and conduct labs using restriction enzymes and produce DNA fingerprints
- 10 -understand how the environment effects the expression of genes in humans

Unit ?'s

- 1- What patterns do various gene combinations produce in the next generation?
- 2- Evolutionarily speaking, why are pluripotent stem cells important.
- 3- How is genetic information passed on through generations?
- 4- On a molecular basis why is DNA the key to life?
- 5- What makes us different from each other while retaining all traits that make us human?

Content Q's

- 1- How do the four bases on DNA code for the multiple amino acids?
- 2- How does DNA replicate?
- 3- How do the processes of transcription and translation occur?
- 4- What are the three types of RNA? What are their roles?