

SCIENCE PLANNER: WEEK OF 9.7.19



OBJECTIVES FOR THE WEEK:

Biology : What is DNA and how does it work? 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.

Chemistry: How do we count (and account for) atoms? Chm.2.2.4 Analyze the stoichiometric relationships inherent in a chemical reaction.

DAILY AGENDA – (SUBJECT TO CHANGE) <https://evansccca.weebly.com/>

| DAY | Biology | Chemistry |
|--------------|---|--|
| Mon 10.7 | <p>WARM up: inquiry minilab https://learn.genetics.utah.edu/content/basics/builddna/</p> <p>NOTES- DNA</p> <p>*HW=FINISH Cell cycle and questions, watch 2 videos: https://www.youtube.com/watch?v=o_-6JXLYS-k https://www.youtube.com/watch?v=8kK2zwjRV0M</p> | <p>WARM up: inquiry minilab https://interactives.ck12.org/simulations/chemistry/balancing-chemical-equations/app/index.html</p> <p>NOTES- stoichiometry</p> <p>*HW= FINISH CK12 stoichiometry! Finish CK12 balance equations assignment.</p> |
| Tues 10.8 | <p>Mitosis/Meiosis notes https://www.biointeractive.org/classroom-resources/double-helix</p> <p>V. LAB!! DNA analysis</p> <p>*HW= DNA lab #1-6, redo respiration lab!</p> | <p>Stoichiometry PRACTICE day- TEAMS (pg 62 and 63)</p> <p>*HW= pg 57 & 59 (take a picture of someone's if you lost it!!!).</p> <p>ANY make up work by 2:25pm Wed will earn SOMETHING.!!!</p> |

| | | |
|----------------|---|---|
| Wed 10.9 | QUIZ DNA extraction lab due! Respiration lab due! *HW= CK12 assignment on cell replication. Due SUNDAY before bedtime! | Quiz FINISH ENTIRE PACKET!! *HW=DUE Monday 10/14= Chapter 13 questions, use your own paper and write out in your own words! |
| Thurs 10.10 | PSAT/ACT- 12th and 13th graders to room 210 | PSAT/ACT -12th and 13th graders to room 210 |
| Fri 10.11 | MOLE DAY= 10/23 !!! | MOLE DAY= 10/23 !!! |

WARM UP ACTIVITIES

https://www.flippity.net/rp.asp?k=1jy_bnwqkx871207fc41qknpfegzp7xyf-6yrttsjwk

| | |
|-------------|--|
| MON | Bio- The grey and white circles on the models represent partial positive and negative charges that form _____ bonds <u>between complementary bases.</u> CHEM- Write YOUR balanced equation HERE: ☺ |
| TUES | Bio- explain the difference between purines and pyrimidines. Chem- 2 moles of zinc react in a huge vat of Hydrochloric acid. How many moles of hydrogen gas are produced? How many grams? How many |

| | |
|------------|--|
| | Liters @STP? |
| WED | Bio= Describe a centrosome. CHEM= List 12 ions. |
| THU | ACT/PSAT |
| FRI | TEACHER WORKDAY! |

10.10.19 ACT/PSAT day! Williams group comes to me, Lilianna's group to Hobbs, Lindsey's group goes to Ms. Robin Gore
Adrienne Evans' Roster

First Session:

William Adams
Annayeli Aguayo-
 Dionisio
Carah Ammons
 Brenda Avellaneda
 Gonzalez
 Nancy Ballesteros
 Ethan Bartley
 Elham Bromell
 Chasity Brooks
 Tiffany Brown
 Emily Canady
 Hannah Clarke
 Aaron Creech
 Robert Dwyer
Azariyah El
 Hannah Ellis
Landon Enzor
Keasy Escobar
 Brantley Evans
Elizabeth Felmlee
 Edin Gonzalez
 Khalil Hampton
 Blake Hardee

Second Session AND

Survey:
 Lilianna Hernandez
Zachary Horrell
 Bryson Huggins
 Zachary Inman
 Shannon Jackson
 Heaven Johnson
 Stacy Johnson
 Keaton Jones
 Elizabeth Kirby
 John Lane
 Robert Littrell
 Arianna Long
 Dayton Long
Terron McAllister
Mykael McCutchen
Dawson McLamb
Christopher McNiel
 Bryson Miller
 Austin Morgan
 Christian Norton
 Alexis Pickett
 Nathaniel Ramirez

Third Session:

Lindsey Reyes
 Britney Rockwell
 Jacob Rowell
 Jade Sasser
John Sauls III
Montana Schmoll
 Katelynn Scott
 Laney Simmons
 Victoria Simmons
Takeia Smith
 Madison Stanley
 Anthony Stephens
 Georgia Strickland
Chancey Tedder
 Charles Townsend
 Jada Troy
Nikaila Watkins
 Christopher Watson
 Logan Williamson
 Madison Williamson|
 Kasey Willoughby
 Shania Young

SCHEDULE: 11th graders ONLY:
ACT/PSAT (11th Graders) Prep

Schedule:

8:40-10:00: First Session

10:05-11:25: Second Session

11:25-12:25: Survey (w/ same group as 2nd session)

12:25-12:55: Lunch

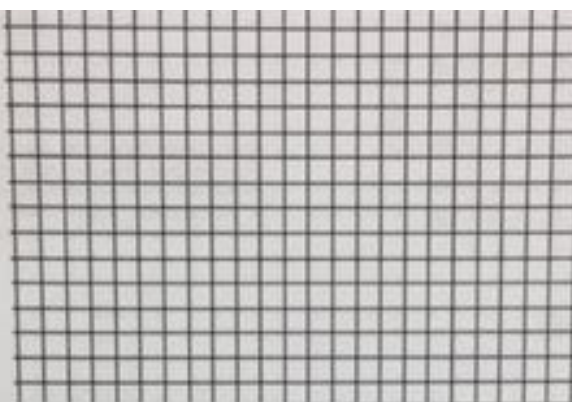
1:00-2:20: Third Session

Teachers / Location

English: Robin Gore, Nesmith 205

Math: Nicky Hobbs, Nesmith 202

Science: Adrienne Evans, Nesmith 203



14. Consider the volume of gas collected in the trial in Experiment 2 for Ni at 30°C. The same approximate volume of gas was collected in the trial in Experiment 1 for what mass of Ni?

F. 0.20 g
 G. 0.25 g
 H. 0.30 g
 J. 0.35 g

15. How many temperatures were tested in Experiment 1, and how many temperatures were tested in Experiment 2?

| | Experiment 1 | Experiment 2 |
|----|--------------|--------------|
| A. | 1 | 1 |
| B. | 1 | 5 |
| C. | 5 | 1 |
| D. | 5 | 5 |

16. Which of the following statements describes a difference between Experiments 1 and 2? In Experiment 1:

F. only Fe was tested, but in Experiment 2, Fe, Ni, and Zn were tested.
 G. Fe, Ni, and Zn were tested, but in Experiment 2, only Fe was tested.
 H. the same mass value of each metal was tested, but in Experiment 2, multiple mass values of each metal were tested.
 J. multiple mass values of each metal were tested, but in Experiment 2, the same mass value of each metal was tested.

17. Which of the following variables remained constant throughout both experiments?

A. Atmospheric pressure — Always the same at sea level
 B. Mass of metal
 C. Temperature
 D. Volume of gas collected

18. If a temperature of 5°C had been tested in Experiment 2, would the volume of gas collected for Zn more likely have been greater than 107 mL, or less than 107 mL?

F. Greater than 107 mL, because for a given metal, the volume of collected gas increased as the temperature decreased.
 G. Greater than 107 mL, because for a given metal, the volume of collected gas increased as the temperature increased.
 H. Less than 107 mL, because for a given metal, the volume of collected gas decreased as the temperature decreased. *extrapolate*
 J. Less than 107 mL, because for a given metal, the volume of collected gas decreased as the temperature increased.

19. Consider the balanced chemical equation in the passage. Based on this equation, if 10 moles of HCl are consumed, how many moles of H₂ are produced?

A. 5
 B. 10
 C. 15
 D. 20 *mole ratio*

20. Suppose that the trial in Experiment 1 with 0.25 g of Zn is repeated, except that the inverted graduated cylinder is replaced by inverted test tubes, each completely filled with 60 mL of water. Based on Figure 1, how many test tubes will be needed to collect all the gas?

K. 1
 G. 2
 H. 3
 J. 4

Conventional current = follow the "+" charge

Passage IV

Figure 1 is a diagram of an RLC circuit. The circuit has a power supply and 3 components: a resistor (R), an inductor (L), and a capacitor (C).

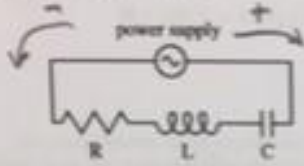


Figure 1

Electric current can flow through the circuit either clockwise (positive current) or counterclockwise (negative current). Figure 2 shows how the electric current in the circuit, I (in amperes, A), and the power supply voltage, V_s (in volts, V), both changed during a 20-millisecond (msec) time interval.

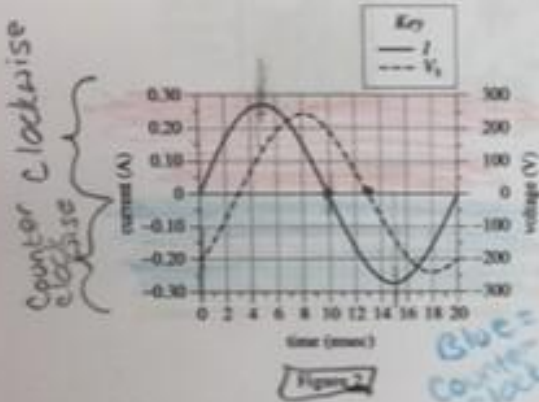


Figure 2

Figure 3 shows how the voltages across the components— V_R , V_L , and V_C , respectively—each changed during the same 20 msec time interval.

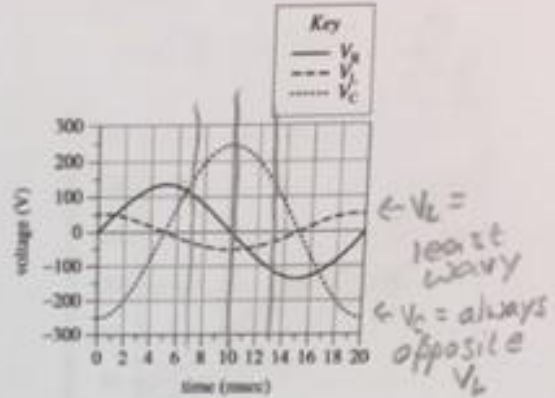


Figure 3

23. According to Figures 2 and 3, which voltage varied the least during the 20 msec interval?

- A. V_R
- B. V_L
- C. V_C *least wavy*
- D. V_s

24. Polarity refers to whether a voltage is positive or negative (a voltage of 0 V has no polarity and can be ignored). Based on Figures 2 and 3, which 2 voltages were always opposite in polarity?

- F. V_R and V_L
- G. V_R and V_s
- H. V_L and V_C
- J. V_s and V_C

25. Based on Figure 2, at which of the following times was the current in the circuit flowing counterclockwise?

- A. 0 msec
- B. 5 msec
- C. 10 msec
- D. 13 msec

$I = \text{current} = \text{changing to upward} = \text{(-Amps + positive change) = counter clock}$

21. According to Figure 2, the maximum positive value of V_s was approximately:

- A. 125 V
- B. 200 V
- C. 250 V *Power Supply = V_source highest point*
- D. 275 V

22. A period is the time required for a wave to complete one full cycle. Based on Figure 3, the period for V_C was:

- F. 5 msec
- G. 10 msec
- H. 20 msec *crest to crest or trough to trough*
- J. 40 msec

26. The table below lists the electric charge (in microcoulombs, μC) stored on the capacitor at 3 different times during the 20 msec interval.

| Time (msec) | Charge (μC) |
|-------------|--------------------------|
| 7 | 0.51 |
| 10 | 0.87 |
| 13 | 0.51 |

Based on Figures 2 and 3, from time = 7 msec through time = 13 msec, did the charge on the capacitor more likely change in sync with I (or with V_C)?

- F. I ; over that time interval, both the charge and I decreased and then increased.
- G. I ; over that time interval, both the charge and I increased and then decreased.
- H. V_C ; over that time interval, both the charge and V_C decreased and then increased.
- J. V_C ; over that time interval, both the charge and V_C increased and then decreased. *fig 3*

46. In the human kidney, urea from the blood is filtered through the glomerular membrane into a nephron. The movement of urea across this membrane occurs without an input of energy. Which factor is the

MOST likely reason urea absorption does not require energy? A. a pH imbalance B. a pressure difference C. a temperature increase D. a concentration gradient

(12) DNA Structure and F x purines vs. pyrimidines - x Chapter 20 Molecular Ge x SMART Ink x

Secure https://slideplayer.com/slide/13386825/

Purine vs. Pyrimidine

- *A purine is always **complementary paired** with a pyrimidine:

- **Purine:**
 - Adenine (A)
 - Guanine (G)
- **Pyrimidine:**
 - Thymine (T) **DNA** or Uracil (U) **RNA**
 - Cytosine (C)

Diagram showing the chemical structures of Thymine (T) and Adenine (A). Thymine is a pyrimidine base with a methyl group (CH₃) and a carbonyl group (C=O). Adenine is a purine base. Both are shown attached to a sugar molecule.

Figure 2
Adenine forms two hydrogen bonds with thymine, while guanine forms three hydrogen bonds with cytosine.

Diagram showing the chemical structures of Cytosine (C) and Guanine (G). Cytosine is a pyrimidine base and Guanine is a purine base. Both are shown attached to a sugar molecule. The diagram illustrates the hydrogen bonding between C and G (three bonds) and between A and T (two bonds).

- **Hydrogen bonds** between the bases on opposite strands hold the double helix together.

SlidePlayer 10 / 85

Windows taskbar: 8:37 AM 10/8/2019



+



+



=



||