

WEEKLY PLANNER: ALL SCIENCE WEEK

OF 2.25.19



**Mid-terms are
March 4th**

Objectives for the week: 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.3.2.3 Explain how the environment can influence the expression of genetic traits. Chm.2.2.4 Analyze the stoichiometric relationships inherent in a chemical reaction. Chm.2.2.5 Analyze quantitatively the composition of a substance (empirical formula, molecular formula, percent composition, and hydrates).

Day	Honors Biology	Honors Chemistry
Mon 2.25.19	<p>-turn in pre-test corrections</p> <p>-DISCOVERY LAB: https://learn.genetics.utah.edu/content/basics/karyotype/</p> <p>-NOTES! Genetics</p> <p>*HW= Monohybrid crosses: EVENS only on both sides.</p>	<p>-turn in molecular shapes lab & pre-test corrections</p> <p>-DISCOVERY LAB: the mole http://www.physics-chemistry-interactive-flash-animation.com/chemistry_interactive/mole_molar_mass.htm http://www.wiredchemist.com/anim-mole</p> <p>-NOTES! Moles</p> <p>*HW= the MOLE concept worksheet.</p>
Tues 2.26 STUDY BUDDIES!	<p>GO over HW</p> <p>-notes: test crosses and dihybrid crosses</p> <p>*HW=DRAGON dihybrid cross, Genotype vs. phenotype??</p>	<p>Go over HW</p> <p>-notes: stoichiometry and moletown</p> <p>-team activity: http://chemcollective.org/activities/tutorials/stoich/the_mole</p> <p>*HW=pg 50, show all work, units, and UNITS OF WHAT??!?? Kanon diatomics, Kalil F.Units vs. Molecules</p> <p>3rd: What is the mass of Calcium Chloride in amu?</p> <p>What is the mass in grams?</p> <p>How are they similar and different?</p>
Wed 2.27 STUDY	<p>COLLECT practice test corrections</p>	<p>Collect practice test</p>

<p>BUDDIES!</p>	<p>-Virtual genetics lab https://learn.genetics.utah.edu/content/pigeons/pigeonetics/ -Finish notes! * HW= pedigree packet pg #1-4 😊</p>	<p>from ACT day -Finish notes! Virtual activity: http://collective.chem.cmu.edu/stoich/mole.php * HW= do pg 50-53 show work!</p>
<p><i>Thurs</i> 2.28</p>	<p>LAB: BABY DRAGONS!!! * HW= dragon questions (10), dragon picture. <i>Psst... are you reading this? Click on the physics button at the top of the page.</i></p>	<p><i>LAB: Moletown!</i> * HW= STUDY! Finish Moletown <i>Psst... are you reading this? Click on the physics button at the top of the page.</i></p>
<p><i>Friday</i> 2.29</p>	<p>https://www.youtube.com/watch?v=a0urPofZiuY -HAND in EVERYTHING Everyone's zip grade ID= last 5 digits of your student # TEST https://evansccca.weebly.com Mid term REVIEW make up 4 questions per objective 1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 4.1, 4.2</p>	<p>TEST (on everything covered this week) -FINISH MOLE NANOBOT PROJECT MID TERM REVIEW make up 10 questions per objective 1.1, 1.2, 1.3</p>

Moles digging <https://www.youtube.com/watch?v=toARdZKs-IE>

TED-ed mole <https://www.youtube.com/watch?v=TEI4jeETVmg>

3rd BLOCK ESSAY!

#24) Convert 2500 dm³ of CO₂ to atoms .

#25) Convert 3.9 x 10²⁴ atoms of Iodine to grams of Iodine

Warm up activities!

Monday 2.25.19-

<https://evansccca.weebly.com/>

BIO Warm up:
Turn OFF your cell phone and put in bin 😊

<https://learn.genetics.utah.edu/content/basics/dnathings>

What did you learn from this video???

CHEM Warm up:
Turn OFF your cell phone and put in bin 😊

<https://www.texasgateway.org/resource/moles-and-molar-mass>

**1 Mole
carbon =**

Tuesday 2.26.19-

<https://evansccca.weebly.com/>

BIO Warm up:
**Turn OFF your cell phone and
put in bin 😊**

<https://www.youtube.com/watch?v=pv3Kj0UjilE>

Describe genes and alleles.

CHEM Warm up:
**Turn OFF your cell phone and
put in bin 😊**

<https://www.youtube.com/watch?v=TE14jeETVmg>

How big is a mole?

Wednesday 2.27.19-

<https://evansccca.weebly.com/>

BIO Warm up:
**Turn OFF your cell phone and
put in bin 😊**

Describe how two white mice with
brown eyes can have a baby with
white fur and red eyes.

CHEM Warm up:
**Turn OFF your cell phone and
put in bin 😊**

**Convert 12 g sand to moles of
sand.**

Thursday 2.28.19-

<https://evansccca.weebly.com/>

BIO Warm up:
**Turn OFF your cell phone and
put in bin 😊**

BIOLOGY see below-

CHEM Warm up:
**Turn OFF your cell phone and
put in bin 😊**

Convert 9.3×10^{24} atoms of carbon
to grams of carbon.

Friday 3.1.19-

<https://evansccca.weebly.com/>

BIO Warm up:
**Turn OFF your cell phone and
put in bin 😊**

BIOLOGY see below-

CHEM Warm up:
**Turn OFF your cell phone and
put in bin 😊**

Convert 500 g of Oxygen gas to
molecules of Oxygen gas.

Parent 1
 B = brown eyes
 b = blue eyes
 H = brown hair
 h = blonde hair

Parent 2
 B = brown eyes
 b = blue eyes
 H = brown hair
 h = blonde hair

	BH	Bh	bH	bh
BH	BBHH brown eyes brown hair	BBHh brown eyes brown hair	BbHH brown eyes brown hair	BbHh brown eyes brown hair
Bh	BBHh brown eyes brown hair	BBhh brown eyes blonde	BbHh brown eyes brown hair	Bbhh brown eyes blonde hair
bH	BbHH brown eyes brown hair	BbHh brown eyes brown hair	BbHH blue eyes brown hair	bbHh blue eyes brown hair
bh	BbHh brown eyes brown hair	bBhh brown eyes blonde hair	bbHh blue eyes brown hair	bbhh blue blonde

1/16 = bbhh 6.25%
 4/16 = blue eyes 25%
 4/16 = blonde hair 25%



courtesy of Bernard Drax (Draxtor.com)
a SL video reporter/blogger (on Youtube)

Part 1:
3-D VSEPR
Theory Project

Part 2:
NSF Lab Project



Go to google and search: youtube chemistry drax 19
or <https://www.youtube.com/watch?v=twAi73JCXOM>

ER KEY

MOLES AND MASS

Name _____

Determine the number of moles in each of the quantities below.

1. 25 g of NaCl	0.43 mole	_____
2. 125 g of H_2SO_4	1.28 moles	_____
3. 100. g of $KMnO_4$	0.633 mole	_____
4. 74 g of KCl	0.99 mole	_____
5. 35 g of $CuSO_4 \cdot 5H_2O$	0.14 mole	_____

Determine the number of grams in each of the quantities below.

1. 2.5 moles of NaCl	145 g	_____
2. 0.50 moles of H_2SO_4	49g	_____
3. 1.70 moles of $KMnO_4$	269g	_____
4. 0.25 moles of KCl	19g	_____
5. 3.2 moles of $CuSO_4 \cdot 5H_2O$	800g	_____

THE MOLE AND VOLUME

Name _____

For gases at STP (273 K and 1 atm pressure), one mole occupies a volume of 22.4 L. What volume will the following quantities of gases occupy at STP?

1. 1.00 mole of H_2	22.4 L
2. 3.20 moles of O_2	71.7 L
3. 0.750 mole of N_2	16.8 L
4. 1.75 moles of CO_2	39.2 L
5. 0.50 mole of NH_3	11.2 L
6. 5.0 g of H_2	56 L
7. 100. g of O_2	70.0 L
8. 28.0 g of N_2	22.4 L
9. 60. g of CO_2	31 L
10. 10. g of NH_3	13 L

800g

**THE MOLE AND
AVOGADRO'S NUMBER**

Name _____

One mole of a substance contains Avogadro's Number (6.02×10^{23}) of molecules.

How many molecules are in the quantities below?

1. 2.0 moles	1.2×10^{24}
2. 1.5 moles	9.0×10^{23}
3. 0.75 mole	4.5×10^{23}
4. 15 moles	9.0×10^{24}
5. 0.35 mole	2.1×10^{23}

How many moles are in the number of molecules below?

1. 6.02×10^{23}	1.00
2. 1.204×10^{24}	2.00
3. 1.5×10^{26}	0.00025
4. 3.4×10^{24}	560
5. 7.5×10^{24}	0.00012

ANSWER I

MIXED MOLE PROBLEMS

Name _____

Solve the following problems.

1. How many grams are there in 1.5×10^{23} molecules of CO_2 ?

$$1.1 \times 10^3 \text{ g}$$

2. What volume would the CO_2 in Problem 1 occupy at STP?

$$5.6 \times 10^2 \text{ liters}$$

3. A sample of NH_3 gas occupies 75.0 liters at STP. How many molecules is this?

$$2.02 \times 10^{24} \text{ molecules}$$

4. What is the mass of the sample of NH_3 in Problem 3?

$$56.9 \text{ g}$$

5. How many atoms are there in 1.3×10^{22} molecules of NO_2 ?

$$3.9 \times 10^{22} \text{ atoms}$$

6. A 5.0 g sample of O_2 is in a container at STP. What volume is the container?

$$3.5 \text{ liters}$$

7. How many molecules of O_2 are in the container in Problem 6? How many atoms of oxygen?

$$9.4 \times 10^{22} \text{ molecules} \quad 1.9 \times 10^{23} \text{ atoms}$$

BIOLOGY warm ups for Thursday and Friday:

Thurs: Cross a woman carrier for hemophilia with a hemophiliac man. $X^h X^H$ = female carrier and the lower case h is recessive for hemophilia. $X^h Y$ = male hemophiliac

Friday:

You have type $I^A i$ blood and your spouse to be has type $I^B i$ blood. What types of blood would you expect your children to have and why?

Blood Type (Phenotype)	Genotype(s)
Type O	ii
Type A	$I^A I^A$ or $I^A i$
Type B	$I^B I^B$ or $I^B i$
Type AB	$I^A I^B$

--	--

BABY DRAGONS!!

Step 1- get to know your pet dragon!

Green Autosomes

GENOTYPES		Alleles in		TRAIT---Ph
MOM	DAD	Egg	Sperm	

Step 2- find a mate for your pet dragon!

Step 3- get to know your pet dragon's mate!

Step 4- FLIPing time! To determine the egg allele and then the sperm allele for each trait.

Step 5- determine the traits of your new baby dragon

Step 6- Draw a picture of your baby dragon

Step 7- Give your baby dragon a fitting name 😊

Getting to know your pet dragon =)

My pet dragon is a _____ because I got a (pink/blue) sex chromosome. This means my pet dragon will be a (mommy/daddy) dragon!

My (lady/guy) dragon's AUTOSOMES (body chromosomes)

GREEN (if nothing, put a •) <https://www.youtube.com/watch?v=M1fZ74ieGRE>

FRONT	BACK	TRAIT held by this dragon

RED

FRONT	BACK	TRAIT held by this dragon

Orange

FRONT	BACK	TRAIT held by this dragon

Yellow

FRONT	BACK	TRAIT held by this dragon

MOLETOWN- chemistry

- must clearly show the calculations from one area to the next
- must include mole in the center
- must branch out to liters, grams, and particles
- must have a throughway for the nanobot to make it from one point to the next
- must have a way to change nanobot directions.



