

SCIENCE PLANNER: WEEK OF 10.28.19



OBJECTIVES FOR THE WEEK:

Biology : 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).

Chemistry: Chm.2.1.1 Explain the energetic nature of phase changes. Chm.2.1.2 Explain heating and cooling curves (heat of fusion, heat of vaporization, heat, melting point, and boiling point). Chm.2.1.3 Interpret the data presented in phase diagrams.

DAILY AGENDA – (SUBJECT TO CHANGE)

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

DAY	Honors Biology	Honors Chemistry
Mon 10.28	<p>NOTES- pedigree and Rh factor.</p> <p>LAB! A murder MYSTERY</p> <p>*HW= Pedigree pgs 33-35 in pkt</p>	<p>GO OVER HW-phase diagrams</p> <p>NOTES- states of matter, heating curves, Phase diagrams, exo/endo thermic</p> <p>*HW= Temp vs. time graph for water states of matter</p>
Tues 10.29	<p>NOTES- Genetic engineering</p> <p>FINISH lab project: Blood type mystery.</p> <p>HW= Steps and diagrams for gel electrophoresis</p>	<p>Finish notes: States of matter:</p> <p>http://ths.sps.lane.edu/chemweb/unit4/problems/phase/index.htm</p> <p>*HW= online quiz (above) and pg 12-14 of pkt.</p>

	<p>, What's up with Laboradoodles ??</p>	
<p>Wed 10.30</p>	<p>Finish Genetic engineering notes. Electrophoresis lab?</p> <p>DRAGON BABIES LAB! *HW= Answer ALL questions on a separate sheet of paper. EACH of you draw an accurate baby picture of your dragon!!!!</p>	<p>QUIZ- Notes: Specific heat</p> <ol style="list-style-type: none"> 1) 25 g ice cube from -22 degrees C to steam at 108 degrees C. 2) Page 15 3) Quiz corrections
<p>Thurs 10.31</p>	<p>Go over HW DRAGONS movie =) ACT practice... graphing</p> <p>*HW= answer the 9 questions and study for test.</p>	<p>Go over HW LAB- Heat of fusion paradigm lab</p> <p>*HW= finish lab and do the problems on the worksheet.#1,5,6,7</p>
<p>Fri 11.1</p>	<p>QUIZ- Pedigrees and genetics _DUE Monday #1-20 1pt for the answer 1pt for explanation</p>	<p>QUIZ and calorimetry HW & Lab presentations!</p> <p>*DUE mon= finish calorimetry problem and lab, research daylight savings.</p>

WARM UP ACTIVITIES

DAY	Warm up questions
10/28	<p>https://www.youtube.com/watch?v=905JQqlngFY</p> <p>A mother is heterozygous + for Rh type blood, the father is also homozygous for - type RH blood. Make a punnet square and explain the % chance of each blood for a baby.</p>
	<p>https://www.youtube.com/watch?v=9z4vDaK29fg</p> <p>What is entropy? What is sublimation?</p> <p>Write an equation for an EXOTHERMIC physical change.</p> <p>Write an equation for an ENDOTHERMIC physical change.</p>
10/29	<p>Predict TWO possible motives the thief may have had to steal part of the inheritance.</p>
	<p>What happens when the vapor pressure of a liquid gets high enough to reach atmospheric pressure?</p>
10/30	<p>Draw a diagram of an electrophoresis set up and explain HOW DNA is sorted. Also explain what is used to make the movement of the DNA happen.</p> <p>https://learn.genetics.utah.edu/content/labs/gel/</p>
	<p>What questions did you get wrong on the quiz? Do corrections on your warm up sheet (ok to use back).</p>
10/31	<p>Do you think dragons could be real?? Why or why not?</p>
	<p>A cup of water at 22°C has ice put in it then a 10 g cube of ice at 0°C is placed in it. What is the final temperature once the ice melts?</p>
11/1	<p>If dragons really lived, explain how they overcame the small wing to mass ratio.</p>

	An Iron bolt with a mass of 30g is placed in boiling water and allowed to sit in it for 3 minutes. What is the temperature of the bolt when you take it out?

Calculations showing work and units of the water LOSING heat energy in Joules in order for it to cool down in temperature.	Calculations showing work and units of the ice GAINING heat in order to melt. Clearly box in your final answer of the mass.
"Before" picture with cube of ice and temperature	"After" picture with water at its final temperature right at the

separate from cup
of water at ____°C.

moment the last
piece of ice
melted.

CHEM DUE MONDAY!!!!

CALORIMETRY PROBLEM:

A piece of metal weighing 59.047 g was heated to 100.0 °C and then put it into 100.0 mL of water (initially at 23.7 °C). The metal and water were allowed to come to an equilibrium temperature, determined to be 27.8 °C. Assuming no heat lost to the environment, calculate the specific heat of the metal. (Hint: First calculate the heat absorbed by the water then use this value for “Q” to determine the specific heat of the metal in a second calculation)

25% Draw a before picture and label with everything you know about it (example: you know boiling water is 100 deg. C)

25% Draw an after picture and label with everything you know about it

25% Show equations needed to set heat lost by metal equal to heat gained by cool water.

25% Show units and cancel to solve for the specific heat of the metal!!

54927J

The screenshot shows a web browser window displaying a ZipGrade quiz results page. The browser's address bar shows the URL: <https://www.zipgrade.com/quiz/qOcmmBHmT.qu.CCFB9BCC-8E7D-44EC-965B-8D09B0AE3091/all/>. The main content area contains a table with the following data:

#	Answer	# Correct	% Correct	Discrim. Factor	Alt. Answers
1	B	2.0	14.3 %	0.198	D:50% A:29% _:7%
2	D	11.0	78.6 %	0.550	E:14% C:7%
3	B	5.0	35.7 %	0.806	A:64%
4	B	11.0	78.6 %	0.219	C:14% D:7%
5	E	12.0	85.7 %	0.411	D:7% DE:7%
6	A	8.0	57.1 %	0.481	E:29% D:14%
7	C	12.0	85.7 %	0.577	B:7% D:7%
8	D	9.0	64.3 %	0.448	B:21% E:7% C:7%
9	D	12.0	85.7 %	0.301	B:7% E:7%
10	D	10.0	71.4 %	0.551	B:29%
11	A	9.0	64.3 %	0.326	C:29% D:7%
12	B	7.0	50.0 %	0.407	D:36% A:14%
13	C	9.0	64.3 %	0.407	B:21% A:14%
14	A	7.0	50.0 %	0.639	D:29% C:14% B:7%
15	B	3.0	21.4 %	0.442	D:64% C:14%
16	B	12.0	85.7 %	0.190	D:14%
17	C	12.0	85.7 %	0.356	B:7% D:7%
18	A	7.0	50.0 %	0.484	C:36% B:7% D:7%
19	A	11.0	78.6 %	0.502	B:21%
20	A	2.0	14.3 %	0.198	B:86%

Below the table, there is a section titled "GRADED PAPERS" and a table header with columns: ID, Name, Score, % Correct, Key. The browser's taskbar at the bottom shows the time as 2:47 PM on 10/30/2019.

Wastes 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

4. Auto. Dom.

5. What do the circles represent on a pedigree? females Squares? males

6. What does shaded represent? have it Unshaded? don't have it

7. What does a horizontal line represent? marriage Vertical? kids

8. What can a pedigree be a useful tool for geneticists? trace a disease/trait through a family & determine its inheritance pattern

9. How many generations are shown in the pedigree in #4? Label them. 4

10. Number the family members in this pedigree from oldest to youngest. Then tell me how person #9 is related to person #2. #2 is #9's grandmother

11. Explain how person #9 is related to person #7. #7 is #9's uncle

Packet Honors Key.pdf

8. What can a pedigree be a useful tool for geneticists? *Trace a disease trait through a family + determine inheritance pattern*

9. How many generations are shown in the pedigree in #4? Label them. *4*

10. Number the family members in this pedigree from oldest to youngest. Then tell me how person #9 is related to person #2. *#2 is #9's grandmother*

11. Explain how person #9 is related to person #7. *#7 is #9's uncle*

12. Explain how person #15 is related to person #16. *#15 + #16 are brothers*

13. Create a pedigree for the following family. Then label the inheritance pattern and the genotypes of each family member.

- John and Chauna are married with 2 sons and 3 daughters.
- One of their sons, Doug, is married to Alicia and they have one son, Damien.
- Doug's sister, Elisabeth, is also married and has three daughters.
- John, Chauna, Doug, 2 of Doug's sisters (but not Elisabeth) and Doug's son, Damien, are affected with achondroplasia.

Auto Dom.

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2:48 PM
10/28/2019

[Inbox \(49\) - adrienne.phy](#) x [Keys - Google Drive](#) x [CCCA- SCIENCE - Scienc](#) x [Weebly](#) x

[Secure | https://drive.google.com/drive/u/2/folders/1P2qB57NKcrkhDK6Mw-cm6u9GXXNdcdMo](https://drive.google.com/drive/u/2/folders/1P2qB57NKcrkhDK6Mw-cm6u9GXXNdcdMo)

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Auto Dom.

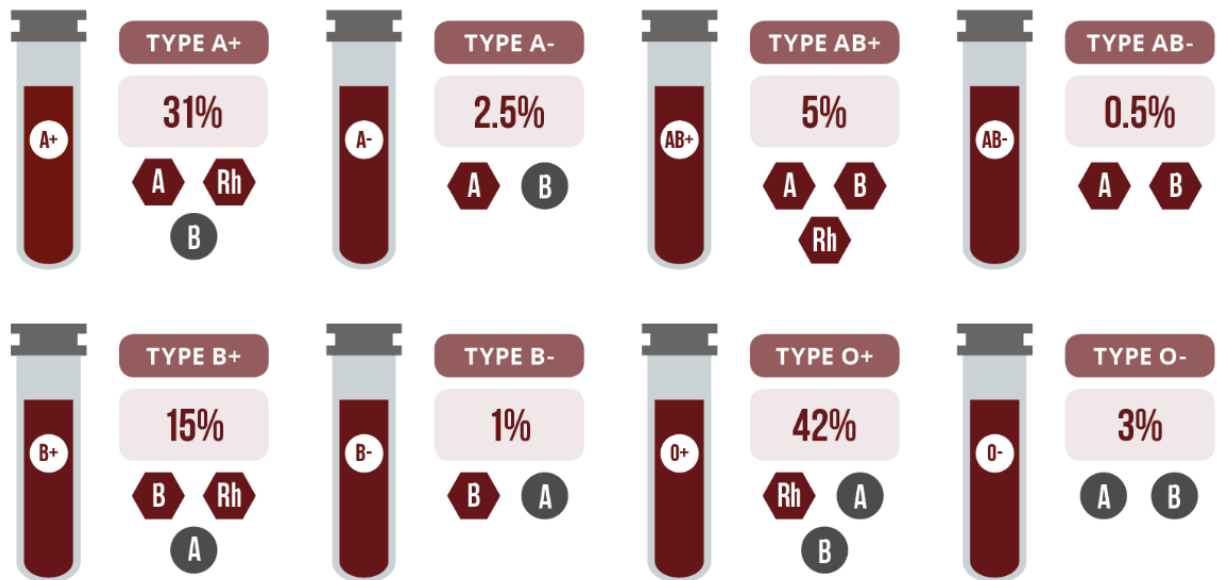
14. Create a pedigree for the following family. Then label the inheritance pattern and the genotypes of each family member.

- Corey and Ainsley are married and have one daughter, Adelyn.
- Adelyn is married and has four sons.
- One of Adelyn's sons, Jacoby, is married and has one son and one daughter.
- Ainsley, Jacoby, and one of Jacoby's brothers have cystic fibrosis.

Horally Unit © It's Not Rocket Science 2016 35

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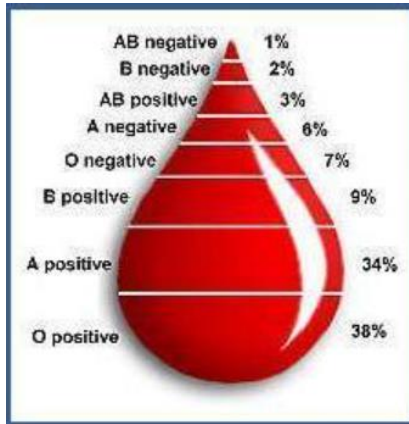
BLOOD TYPE DISTRIBUTIONS



KEY

- ANTIGEN (Red hexagon)
- ANTIBODY (Black circle)

This graphic shows approximate worldwide distributions of different blood types. Note that for different locations and ethnicities figures vary from those shown in this distribution.



If Your Blood Type Is...

Type	You Can Give Blood To	You Can Receive From
A+	A+ AB+	A+ A- O+ O-
O+	O+ A+ B+ AB+	O+ O-
B+	B+ AB+	B+ B- O+ O-
AB+	AB+	Everyone
A-	A+ A- AB+ AB-	A- O-
O-	Everyone	O-
B-	B+ B- AB+ AB-	B- O-
AB-	AB+ AB-	AB- A- B- O-

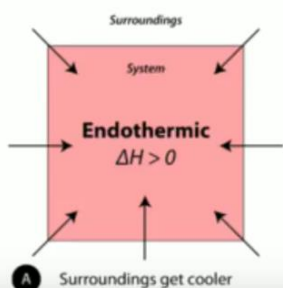
Describing heat changes in an equation

• Endothermic

- ΔH is positive
- Energy is reactant (on the left)
- Feels cold around the change
- $\text{H}_2\text{O}_{(s)} + \text{heat} \rightarrow \text{H}_2\text{O}_{(l)}$

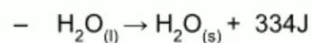


$$\Delta H = +334$$

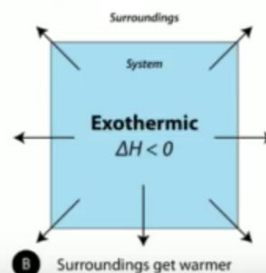


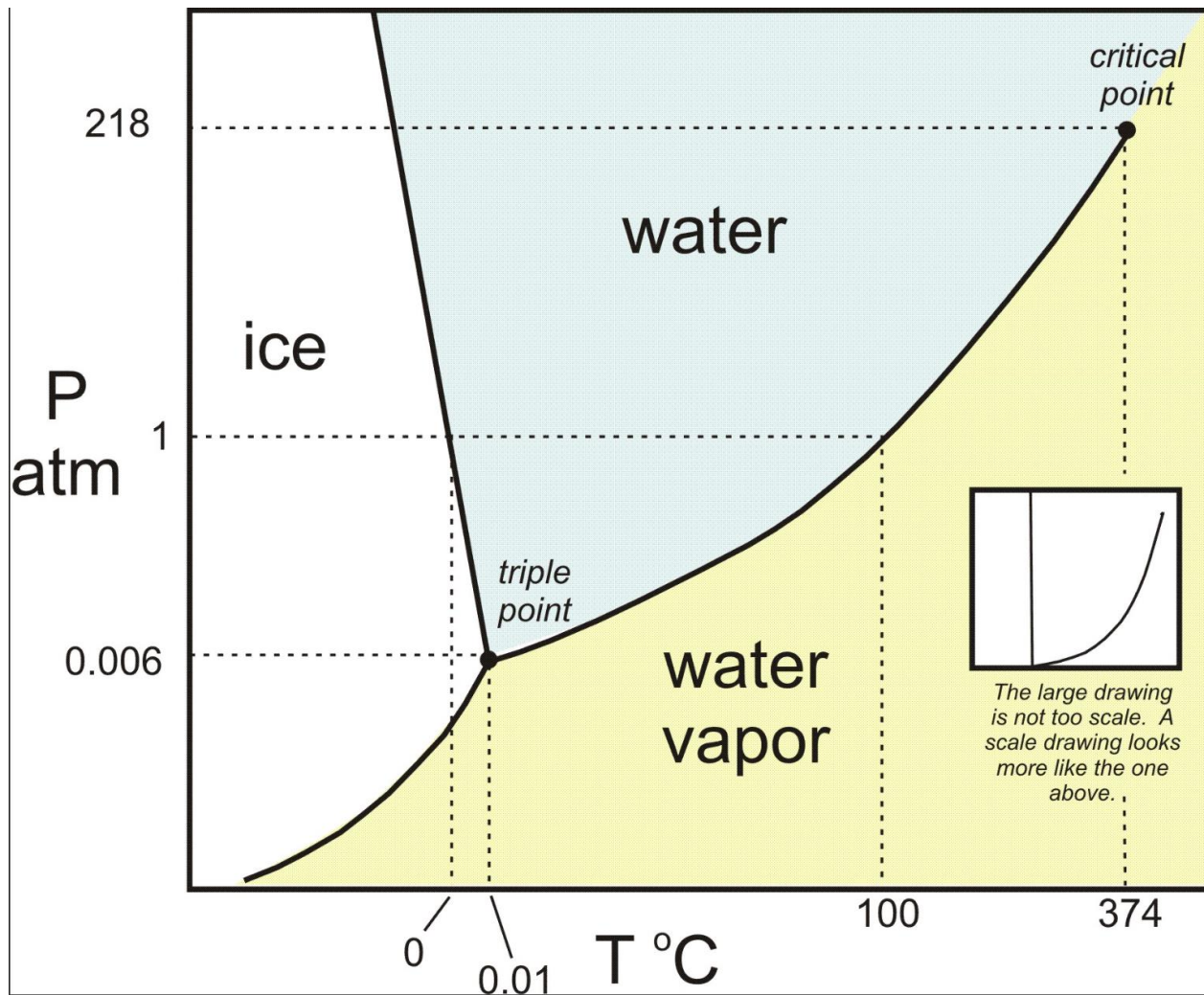
• Exothermic

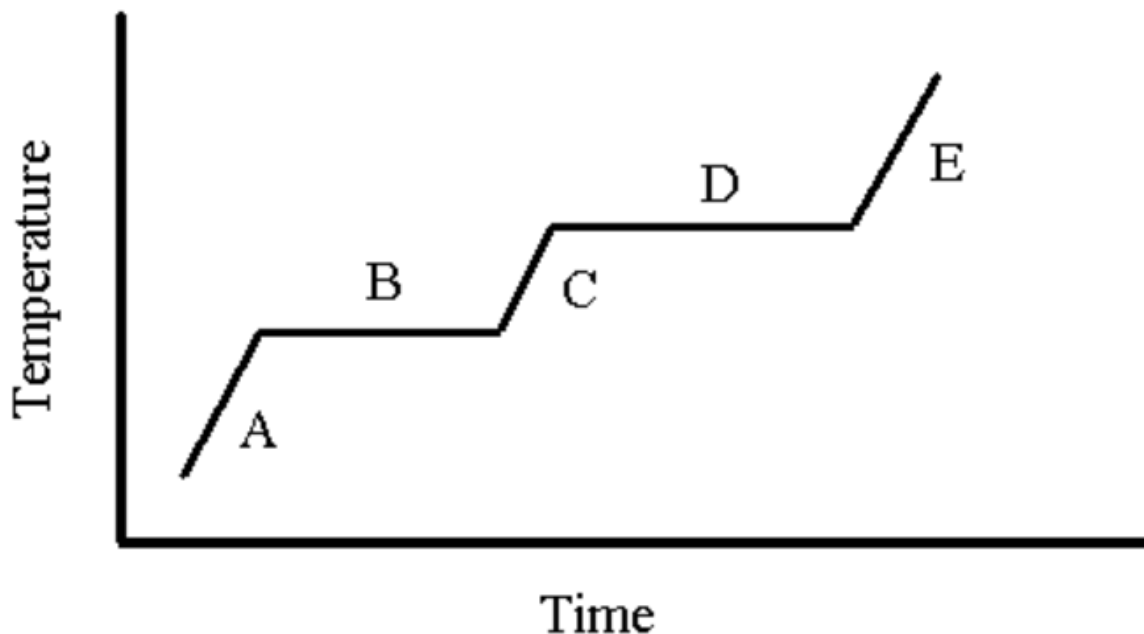
- ΔH is negative
- Energy is product (on the right)
- Feels warm around the change.
- $\text{H}_2\text{O}_{(l)} \rightarrow \text{H}_2\text{O}_{(s)} + \text{heat}$



$$\Delta H = -334$$







1. Using the data below, create a graph to demonstrate the heating curve of water. The water starts out as ice and is heated until it is all water vapor. When you are finished with the graph, label the areas on the graph as: ice, water, steam, melting, or evaporating. Don't forget to give it a title and completely label the axes. Then answer the questions below.

minutes	degree s Celcius	minutes	degree s Celcius	minutes	degree s Celcius	minutes	degree s Celcius
0	-15	9	15	18	60	28	100
1	-10	10	20	19	65	29	100
2	-5	11	25	20	70	30	100
3	0	12	30	21	75	31	100
4	0	13	35	22	80	32	100
5	0	14	40	23	85	33	100
6	0	15	45	24	90	34	105
7	5	16	50	25	95	35	110
8	10	17	55	26	100	36	115
				27	100		

Questions:

- Q1: At what temperature does ice melt? How do you know?*
Q2: At what temperature does water boil? How do you know?
Q3: Why doesn't the temperature of the water change while the ice is melting or boiling?
Q4: What is happening to the heat energy?

Hydrate lab, Mg lab, can crusher, ice lab, hot hands lab, balloon lab