

Tuesday/Wednesday, October 23/4, 2018

Your Learning Goal: Students will review for their next summative assessment and know what to do to prepare.

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Atomic Jeopardy- 16L + R

Catalyst (16L):

1. What are 3 concepts you need to review OR what are 3 content questions you have?
2. What are two ways you can find out the answer to these questions?



Homework:

Notebook check + Quiz Next Week!



Agenda:

1. Catalyst
2. JEOPARDY!
3. Reflection

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Catalyst:

- 1. What are 3 concepts you need to review OR what are 3 content questions you have?**
- 2. What are two ways you can find out the answer to these questions?**

Reflection:

16L

Atomic Jeopardy 10/25

Physical / Chemical?

Atomic Structure

Periodic Table

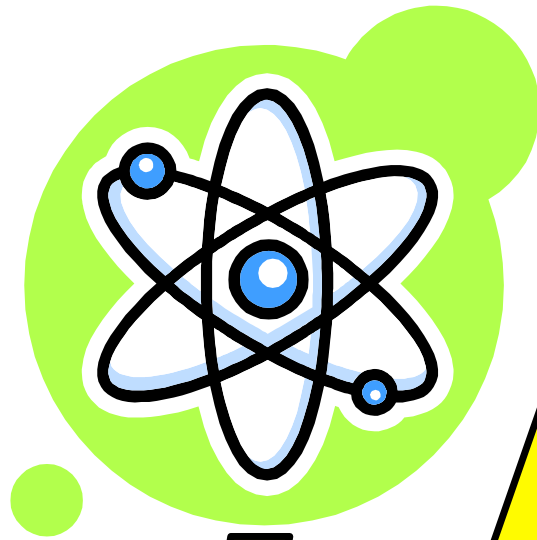
Acids/Bases Exo/Endo

16R

REMEMBER!

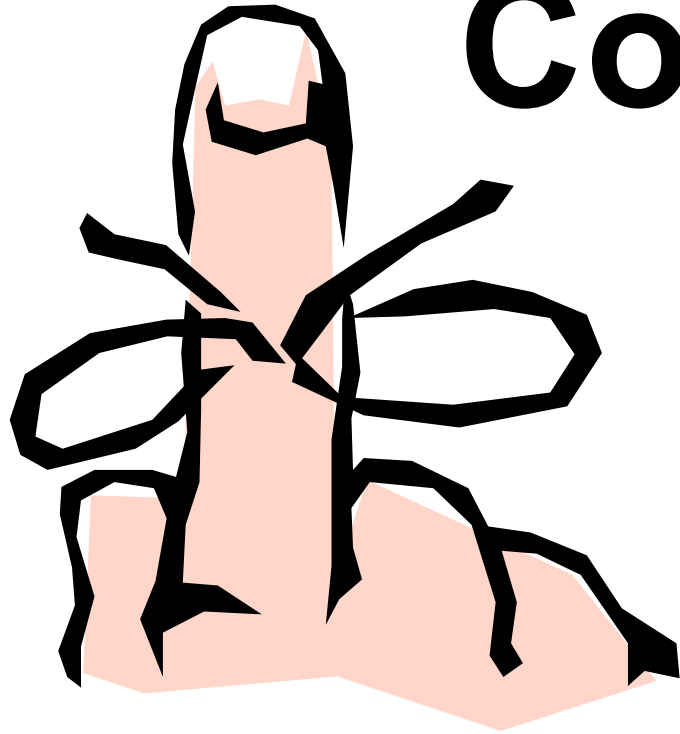
**You should be writing down some notes on the questions
and answers from Jeopardy in your notebook**

16 R



Atomic Jeopardy

Adapted by T. Trimpe <http://sciencespot.net/>



Contestants

Don't

Forget...

RULES

1. You should NOT write your answers in the form of a question.
2. You DO need to keep track of your score. You do NOT lose points if you answer incorrectly.

RULES

3. Your team should answer EACH question on your whiteboard.
4. We will rotate who has control of the board, choosing the question.

Physical or Chemical?	Atomic Structure	Periodic Table	Exothermic/Endothermic	Acids & Bases
<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>
<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>
<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>
<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>



Physical or Chemical? for \$100

Dew forming on a leaf

Why?

Physical Change

It is just water vapor
(gas) condensing on a
leaf



[Back to
Game](#)

Physical or Chemical? for \$200

Erosion of soil

Why?

Physical Change

Soil is just moving
from one place to
another



**Back to
Game**

Physical or Chemical? for \$300

A ripening banana

Why?

Chemical Change

The color change lets us
know it is a chemical
reaction



**Back to
Game**

Physical or Chemical? for \$400

Moldy Bread

Why?

**The mold is 'eating'
the bread and
digesting it**



**Back to
Game**

Daily Double!!

(Worth 2x the points!)

**Describe the difference
between physical and
chemical changes (in your
own words)!**

Chemical Changes: Any change that results in the formation of new chemical substances. (At the molecular level, chemical change involves making or breaking of bonds between atoms).

Physical Changes: Any change that occurs without altering the chemical composition of a substance



**Back to
Game**

Atomic Structure for \$100

What are the subatomic particles that are negative and found outside the nucleus in shells?

Electrons!



**Back to
Game**

Atomic Structure for \$200

What two 'massive' particles 'live' within the nucleus AND what are their charges?

Protons (positive)

Neutrons (neutral)



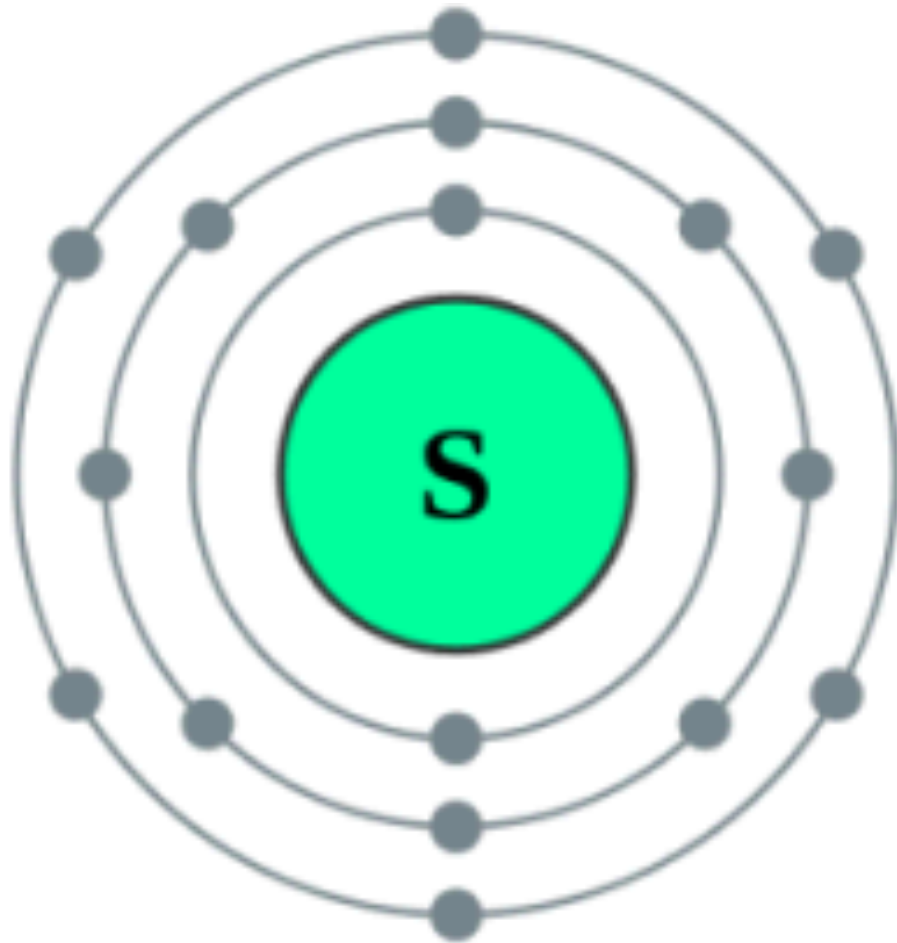
**Back to
Game**

Atomic Structure for \$300

Create a Bohr Model structure for the element Sulfur



16
S
Sulfur
32.066

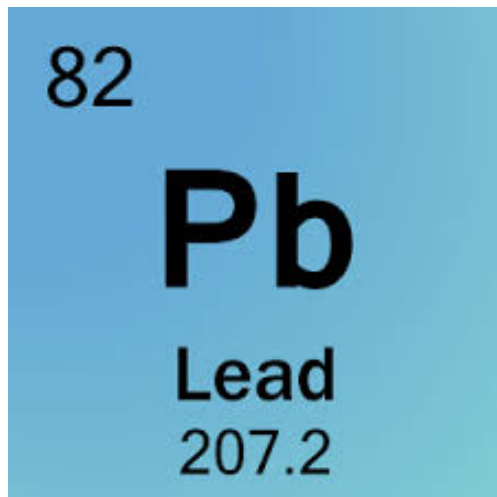


**Back to
Game**

Atomic Structure for \$400

Calculate the number of protons for the element Lead





$$207 - 82 = 125 \text{ protons}$$

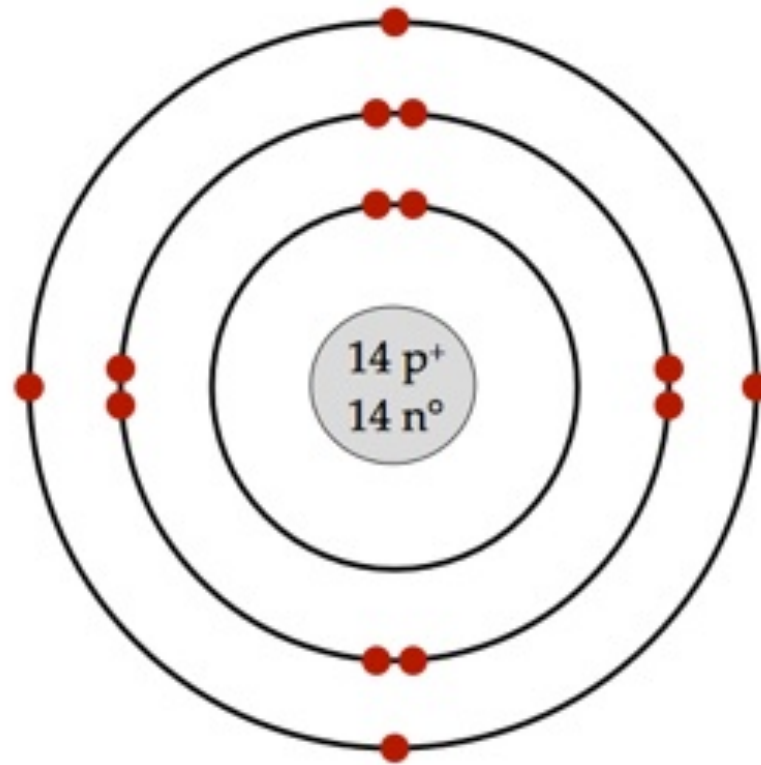


**Back to
Game**

Atomic Structure for \$500

Create a complete Bohr Model for the element Silicon





Silicon



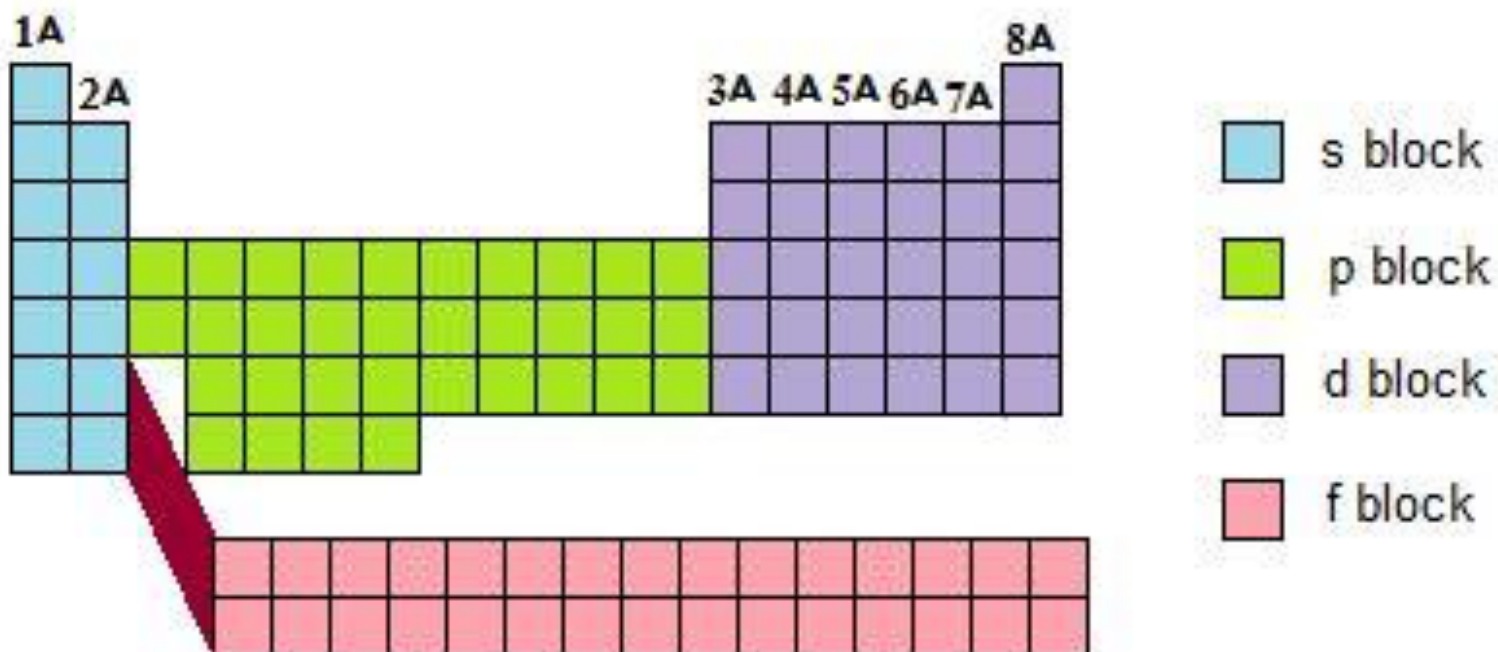
**Back to
Game**

Periodic Table for \$100

The vertical columns of the periodic table which share common characteristics can also be called what?

Periodic Table for \$200

The number above each column can be used to determine what?



Valence Electrons

Number of electrons in the outer most shell that determine reactivity



**Back to
Game**

Periodic Table for \$300

The horizontal rows of elements on the periodic table are called what?

Periods

Periodic Table of the Elements

The periodic table shows elements arranged in horizontal rows (periods) and vertical columns (groups). The fifth period is highlighted in blue and includes the following elements: Rb, Sr, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, In, Sn, Sb, Te, I, Xe. A red arrow points to the first element of this period, Rb.

1	H																	He
2	Li	Be											B	C	N	O	F	Ne
3	Na	Mg											Al	Si	P	S	Cl	Ar
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
6	Cs	Ba	*La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
7	Fr	Ra	+Ac	Rf	Ha	Sg	Hs	Hs	Mt	110	111	112	113					

* Lanthanide Series
Ce Pr Nd Pm Sm Eu Gd Tb Dy Ho Er Tm Yb Lu

+ Actinide Series
Th Pa U Np Pu Am Cm Bk Cf Es Fm Md No Lr

The horizontal rows of the periodic table are called PERIODS.



Back to Game

Periodic Table for \$400

What is the MOST reactive family on the periodic table and why?

Periodic Table for \$500

What particle(s) are used to measure the atomic Mass of an element AND why?

Protons & Neutrons:

**They are massive subatomic particles, where electrons are only a fraction of their size/
mass**



**Back to
Game**

Exothermic/Endothermic for \$100

What measurement tool is especially helpful when collecting data on these reactions?

A Thermometer!



**Back to
Game**

Exothermic Endothermic for \$200

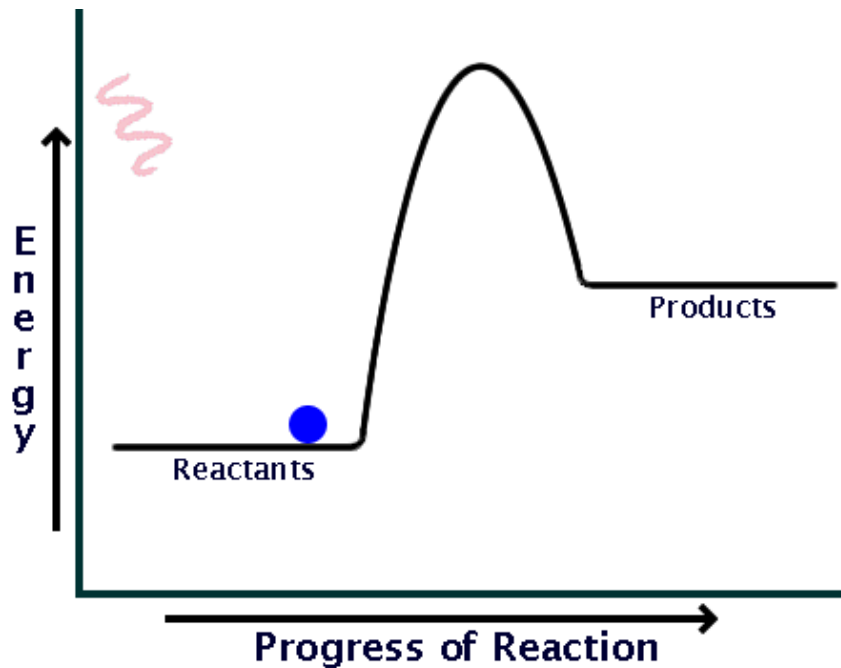
**Exothermic reactions
release what?**

Heat



**Back to
Game**

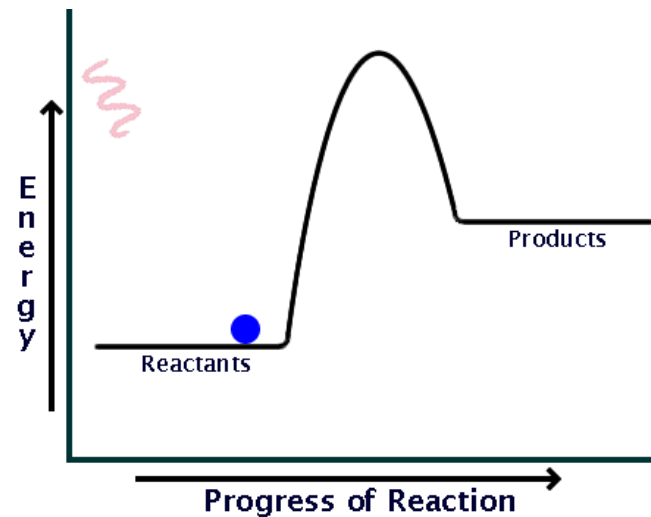
Exothermic Endothermic for \$300



Which reaction absorbs energy from the environment?

Endothermic

They feel cold, after absorbing energy (heat)



**Back to
Game**

Exothermic Endothermic for \$400

What type of reaction occurred and how do you know?

DATA TABLE #2	
Time (seconds)	Temperature (°C)
0 s	22°C
5 s	28°C
10 s	35°C
15 s	40°C
20 s	42°C



Exothermic

The temperature increased over time
Energy was released to the environment



**Back to
Game**

Exothermic Endothermic for \$500

Combustion of a firework is what type of chemical reaction? How do you know?



Exothermic

The temperature increased over time
Energy was released to the environment



**Back to
Game**

Acids & Bases for \$100



Which one of these substances is acidic?

Vinegar

Will result in a pink color



**Back to
Game**

Acids & Bases for \$200

Which pH values are basic?

pH Paper Scale

pH	Color
1	Red
2	Dark Orange
3	Orange
4	Bright Yellow
5	Yellow
6	Light Yellow
7	Light Green
8	Dark Green
9	Blue
10	Dark Blue

pH Paper Scale

pH	Color
1	Red
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10	Dark Blue

8 - 10



**Back to
Game**

Acids & Bases for \$300

**What tool(s) can you use to
measure pH?**

pH paper and/or an indicator like cabbage juice



**Back to
Game**

Acids & Bases for \$400

Rank the pH values in order from most acidic to most basic

pH 1 pH 14 pH 4

pH 7 pH 6 pH 10 pH 12

pH 1 pH 4 pH 6 pH 7

pH 10 pH 12



**Back to
Game**

Acids & Bases for \$500

*Name 3 characteristics that
would let you know a
chemical reaction may have
occurred*

- 1 Color Change*
- 2. pH change*
- 3. Phase Change*
- 4. Light Emitted*
- 5. Heat released or absorbed*



**Back to
Game**

Final Jeopardy

*How many points do
you want to risk?*

Final Jeopardy

A friend tells you that when they burned paper it disappeared.

Are they correct or incorrect in their assumption, explain.



The Law of Conservation of Mass states that matter cannot be created nor destroyed.

Meaning, the amount of each element on both sides of the reaction must be equal.

And the winner is ...



Catalyst:

1. What are 3 concepts you need to review OR what are 3 content questions you have?
2. What are two ways you can find out the answer to these questions?

Reflection:

Write a 'to do' list for exactly how you will prepare for the exam.
(Not just "study" but how?)

16L

Atomic Jeopardy 10/25

Physical / Chemical?

Atomic Structure

Periodic Table

Acids/Bases Exo/Endo

16R