Ch 2.Review Game

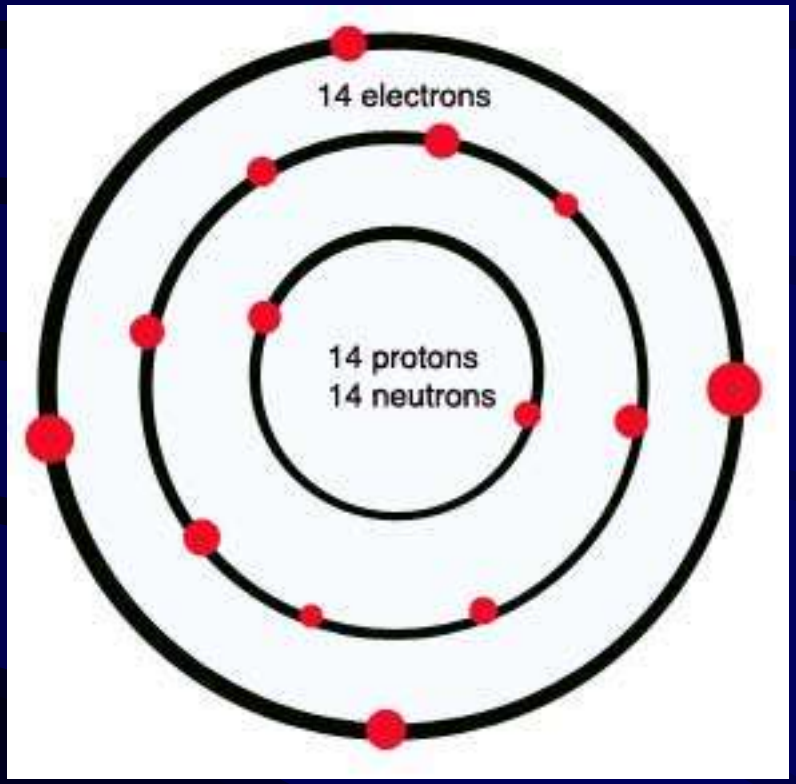
Chemistry of life	Properties of water	C based molecules	Chemical Reactions	Enzymes
Q $100	Q $100	Q $100	Q $100	Q $100
Q $200	Q $200	Q $200	Q $200	Q $200
Q $300	Q $300	Q $300	Q $300	Q $300
Q $400	Q $400	Q $400	Q $400	Q $400
Q $500	Q $500	Q $500	Q $500	Q $500

Final Jeopardy

$100 Question from H1

Draw Silicon on the board

$100 Answer from H1



$200 Question from H1

What is an element? How do you identify different elements?

$200 Answer from H1

Specific kind of atom.
Number of protons.

$300 Question from H1

What is an ion? How does an ionic bond form?

$300 Answer from H1

Gain/loss of electrons.
Attraction between oppositely charged ions.

$400 Question from H1

What are valance electrons?
Why do they matter?

$400 Answer from H1

Outermost electrons, reactivity

$500 Question from H1

What is the difference between ionic And covalent bonds? Which is Stronger?

$500 Answer from H1

Ionic- attraction between two oppositely charged IONS
Covalent- physical sharing of electrons between two atoms
Covalent are stronger

$100 Question from H2

What is a solvent?

$100 Answer from H2

Present in greater amounts, dissolves the solute. Water is a popular example

$200 Question from H2

What is concentration? Give an example of how to increase the concentration of a solution

$200 Answer from H2

Amount of solute dissolved in solvent
Ex- more sugar in your kool-aid

$300 Question from H2

What does pH stand for? What does it mean?

$300 Answer from H2

Potential hydrogen
Potential for a substance to release or remove protons

$400 Question from H2

Why is hydrogen bonding possible?

$400 Answer from H2

Polarity results in partial +/- charges.

Water molecule is polar because of unequal sharing of electrons

$500 Question from H2

Name and define the 3 important properties of water associated with hydrogen bonding

$500 Answer from H2

High specific heat- resists temperature change
Cohesion- molecules attracted to themselves
Adhesion- molecules attracted to another substance.

$100 Question from H3

How many bonds can Carbon make?

$100 Answer from H3

4

$200 Question from H3

What is a monomer? What is a polymer?

$200 Answer from H3

Monomer- basic unit/subunit
Polymer- many monomers bound together

$300 Question from H3

Name the four macromolecules

$300 Answer from H3

Carbs, lipids, proteins, nucleic acids

$400 Question from H3

What are the monomers for each of the macromolecules?

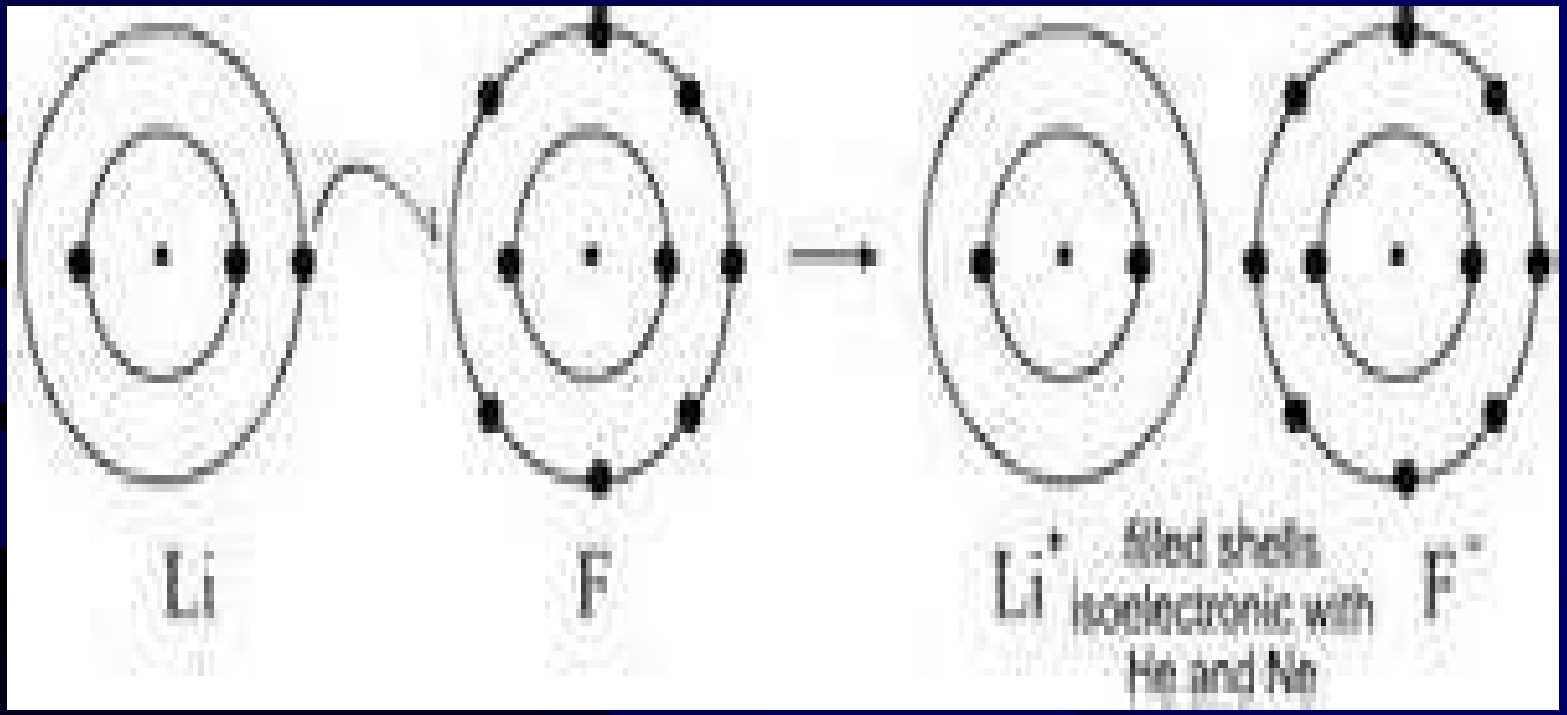
$400 Answer from H3

Carbs- monosaccharides
Protein- amino acids
Nucleic acids- nucledtides
Lipid- trigylceride

$500 Question from H3

Send someone to the board to draw an ionic compound LiF.

$500 Answer from H3



$100 Question from H4

$N + 3H \rightarrow NH_3$

What are the reactants
What are the products?

$100 Answer from H4

R- N, H
P- NH3, ammonia

$200 Question from H4

What is activation energy?

$200 Answer from H4

Energy required to get a reaction going

$300 Question from H4

When is a chemical reaction said to be in equilibrium?

$300 Answer from H4

Reactants and products produced at same rate (reaction proceeds in two Directions rather than only 1)

$400 Question from H4

What elements make up a carbohydrate and in what ratio?

$400 Answer from H4

C, H, and O in 1:2:1 ratio

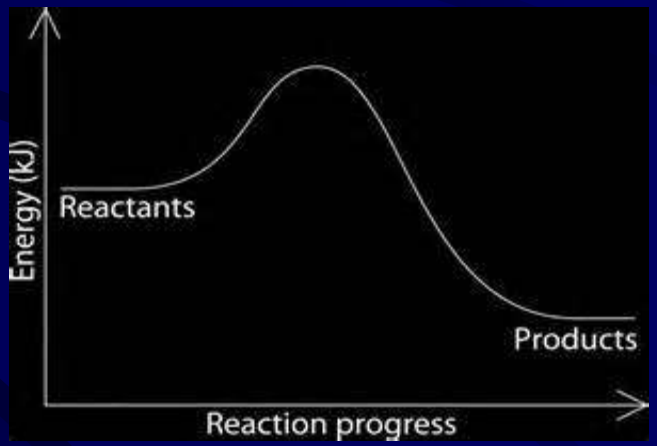
$500 Question from H4

Send someone to draw a fully labeled exothermic reaction

$500 Answer from H4

Overall release of energy.
Products lower than reactants.

Labels: reaction progress x axis
Energy y axis
Reactants
Products
Activation energy



$100 Question from H5

What is a catalyst

$100 Answer from H5

Speeds up chemical reaction by lowering Activation energy

$200 Question from H5

What is an enzyme?

$200 Answer from H5

Enzymes are catalysts inside living things. They allow chemical reactions to occur under tightly controlled conditions.

$300 Question from H5

Why are enzymes necessary?

$300 Answer from H5

Chemical reactions in our body must occur under tightly controlled conditions. Often times reactants in Our bodies are present in very small quantities and need a catalyst to get going. Enzymes are special catalysts specially designed to jump start specific reactions by binding to the active site on a particular substrate.
Without enzymes many of our necessary metabolic chemical reactions would not proceed.

$400 Question from H5

Lactose intolerance occurs because of a mutation in an enzyme called lactase that binds to lactose to catalyze the breakdown of dairy products. If lactase is the damaged enzyme, lactose would be the _____. Why can't a different enzyme do the job of lactase?

$400 Answer from H5

Substrate.
Structure/function lock/key

$500 Question from H5

How does the structure of an enzyme affect function? Why is this important?

$500 Answer from H5

Enzymes have unique structures that allow them to bond only to certain substrates like a lock and key. Each lock and key can start up a unique reaction. This is important because we don't want enzymes going around and catalyzing any and every chemical reaction in our body. Living things need their internal environment to be steady and controlled.

Final Jeopardy

On a separate sheet of paper draw the following:

MgS

H_2O (draw two molecules and show how they hydrogen bond)

O_2

The first group to put their paper in the air will have their answers checked first.

Final jeopardy answer: