Department Chair Report

Hesperia HS Math and Science

Board Meeting Report

December 4, 2020

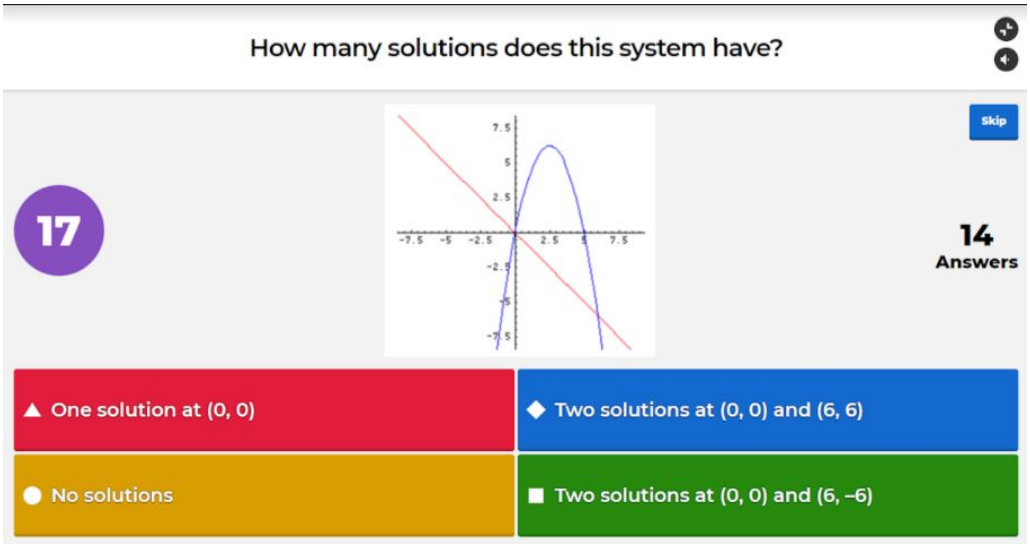
The Math and Science department comprises 6 members and instructs the following courses.

- ❏ Jose Capella - Math I and Math II
- ❏ Ashley Chaney - Math III, Pre-Calculus Honors, and Calculus Honors
- ❏ Sophia Munoz - Math I and Math II
- ❏ Ramsey Hassen - Environmental Science
- ❏ Kristine Jareno - Chemistry I/IHonors, Chemistry II Honors, Grade 8 Science (1 section)
- ❏ Christie Scott - Biology, AP Biology, Grade 7 Science (1 section)

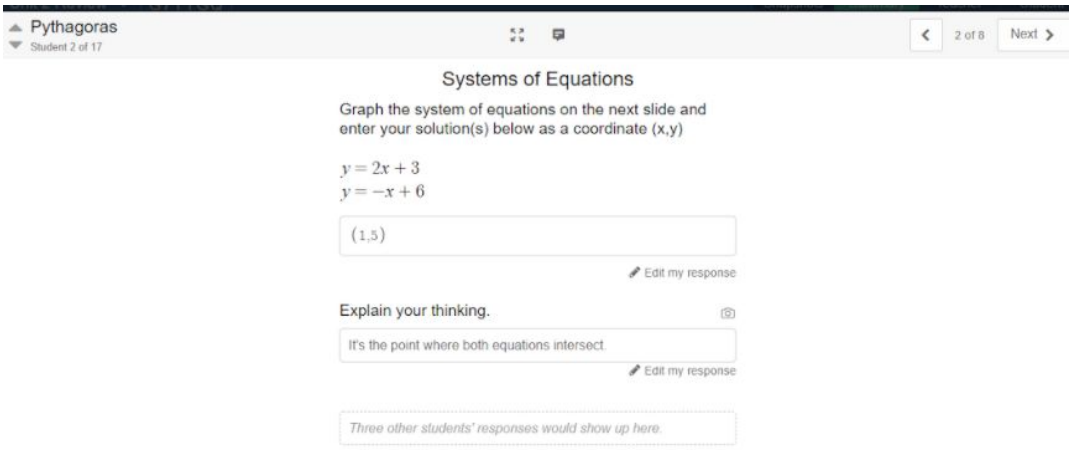
This report highlights the team's best practices and accomplishments.

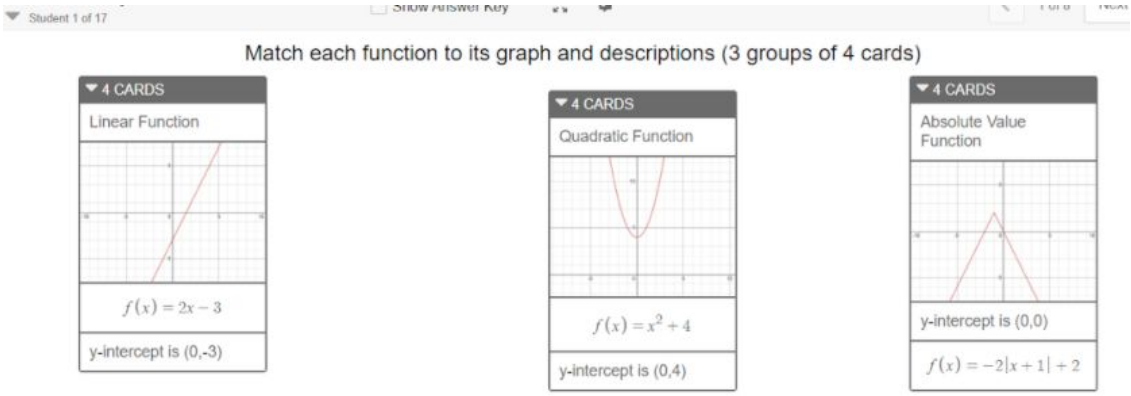
Math

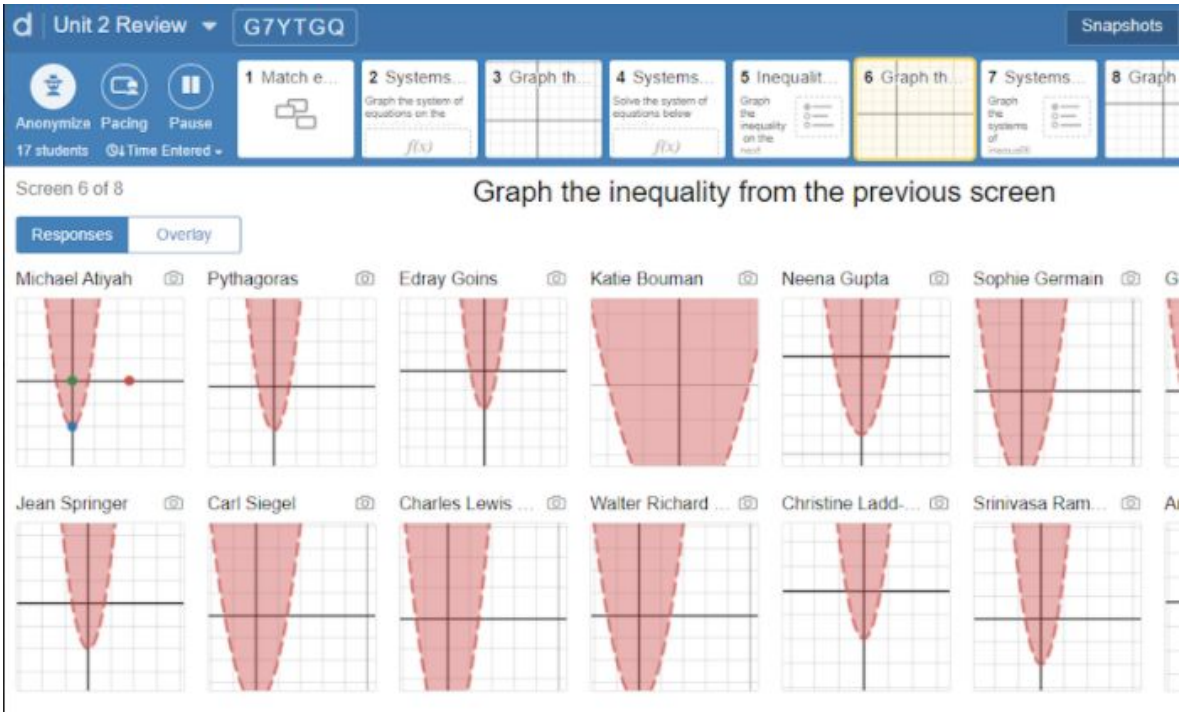
- ★ The use of online resources such as Desmos and Kahoot to engage students in the lesson during Zoom.
  - Kahoot is effective as a review and as an assessment of current knowledge. Many students enjoy the competitive nature of the Kahoots and the immediate feedback it provides.



- Desmos is used as an interactive teaching tool where students can graph, solve equations, explain their thought process, and match information cards. Students may change their answer(s) as many times as they wish, which is a great learning tool as students can make mistakes, learn from them, and fix them before submitting their final answer(s). Desmos also provides students with live answers from their peers while allowing them to stay anonymous, as well as a live teacher view of what students graphs and answers are, so the teacher can provide immediate support to individual students, or the entire class, as needed.

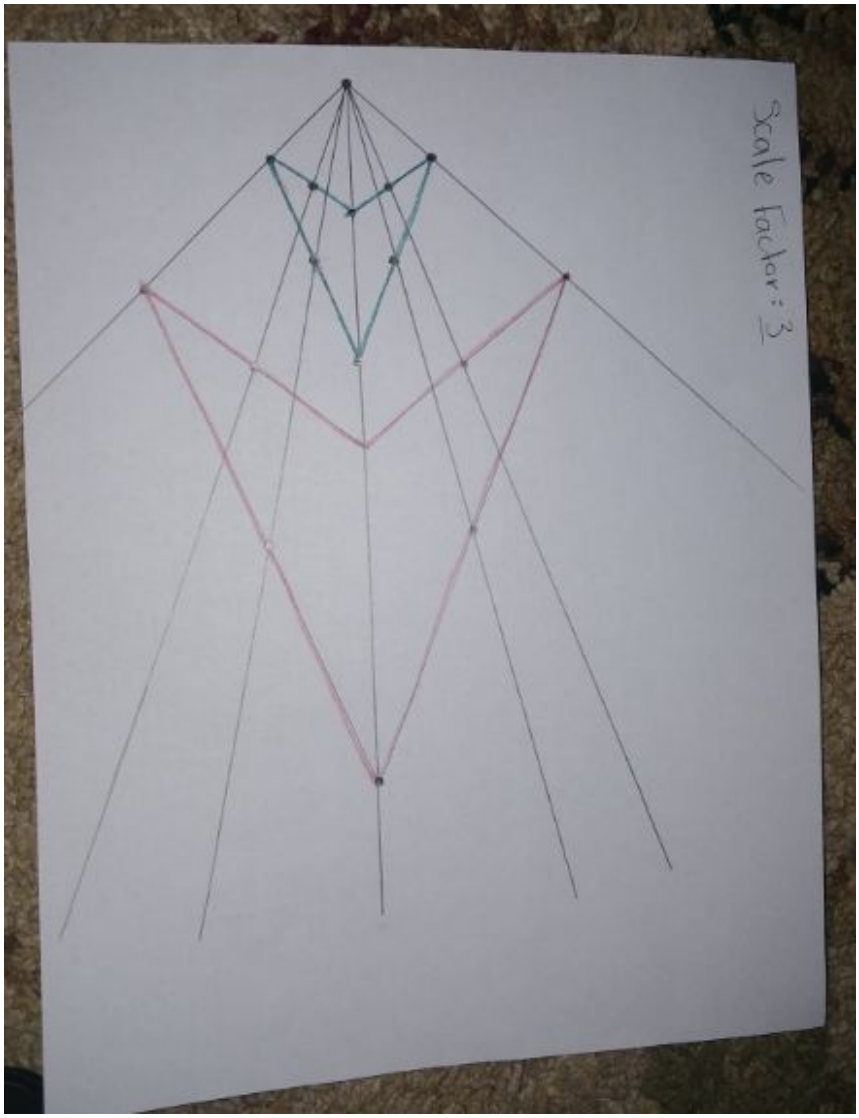

Pythagoras
Student 2 of 17
2 of 8
Next
Systems of Equations
Graph the system of equations on the next slide and enter your solution(s) below as a coordinate (x,y)
$y = 2x + 3$
$y = -x + 6$
(1,5)
Edit my response
Explain your thinking.
It's the point where both equations intersect.
Edit my response
Three other students' responses would show up here.


Student 1 of 17
Match each function to its graph and descriptions (3 groups of 4 cards)
4 CARDS
Linear Function
$f(x) = 2x - 3$
y-intercept is (0,-3)
4 CARDS
Quadratic Function
$f(x) = x^2 + 4$
y-intercept is (0,4)
4 CARDS
Absolute Value Function
y-intercept is (0,0)
$f(x) = -2|x + 1| + 2$



★ On a mini dilation project, students showcase their understanding of similar figures through geometric construction using a center point and lines to map out the new image.

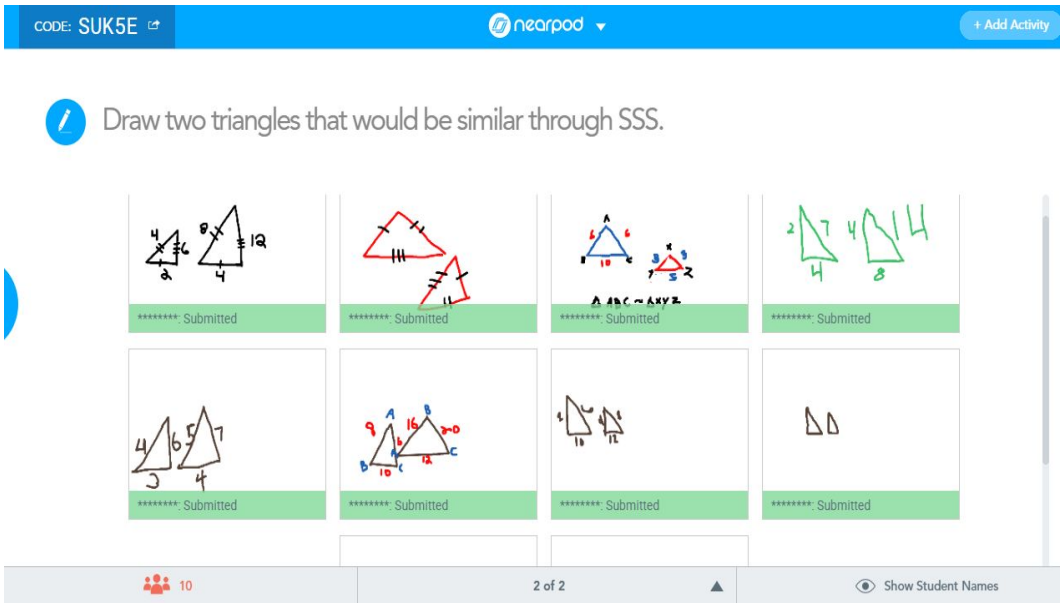
- Sample work of student mini dilation project submitted on 12/8/2020



★ Incorporate warm up using nearpod. It has the option for asking a poll question, where students share answers through a sticky note placed on a cork board "virtually"

- Nearpod Warm up example
  - Students had to draw an example of two triangles that are similar through SSS (Side side side) postulate. Using numbers to label the sides and

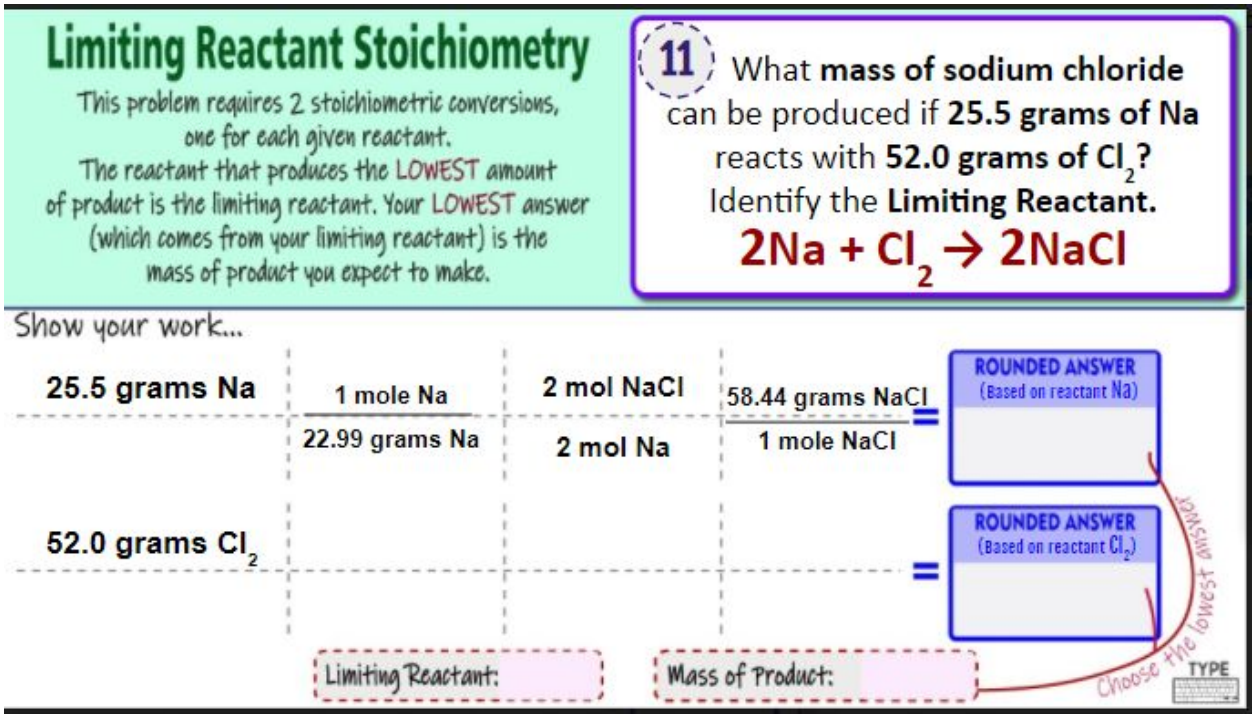
indicate that all sides are proportional. Answers are discussed while student names remain anonymous.



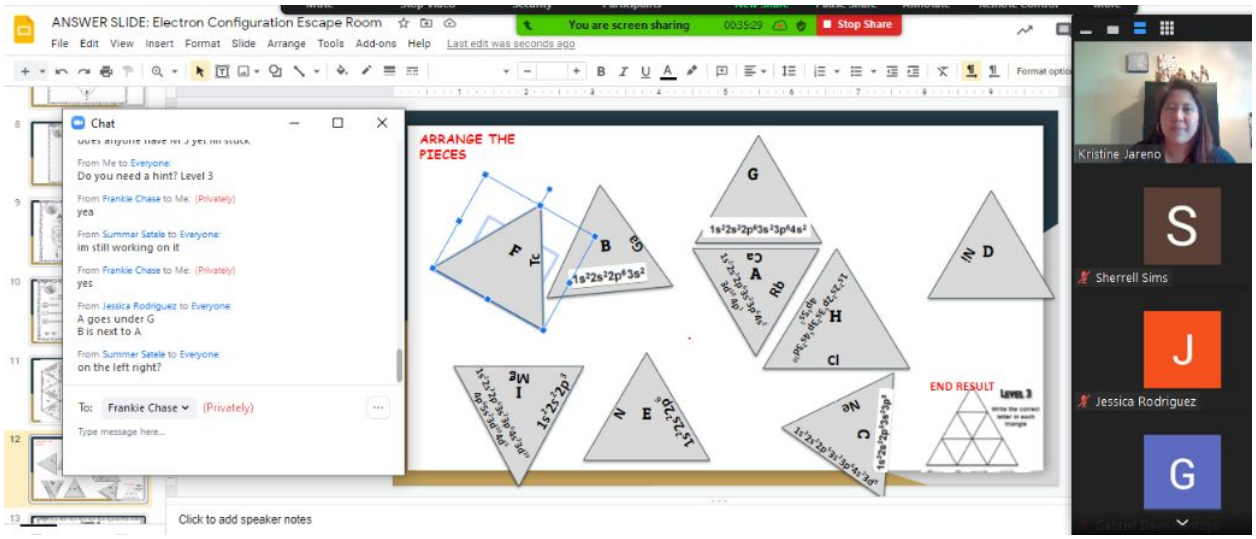
Science

- Guide notes: To increase engagement and give students structure in biology, handouts are created so students can make a copy of and fill in as we have class notes/discussion. This has been very useful, and students have said they enjoy using them. The teacher often adds graphics or GIFs as additional study aids.
- Virtual labs in bio (example: microscope):The use virtual labs allow students to get some kind of lab experience.
- Virtual modeling: Utilized in seventh grade class, virtual modeling for processes such as photosynthesis and cellular respiration. They manipulated dots that represented atoms and showed how matter is transformed through necessary life processes. We have also been working on virtual food webs and pyramids.

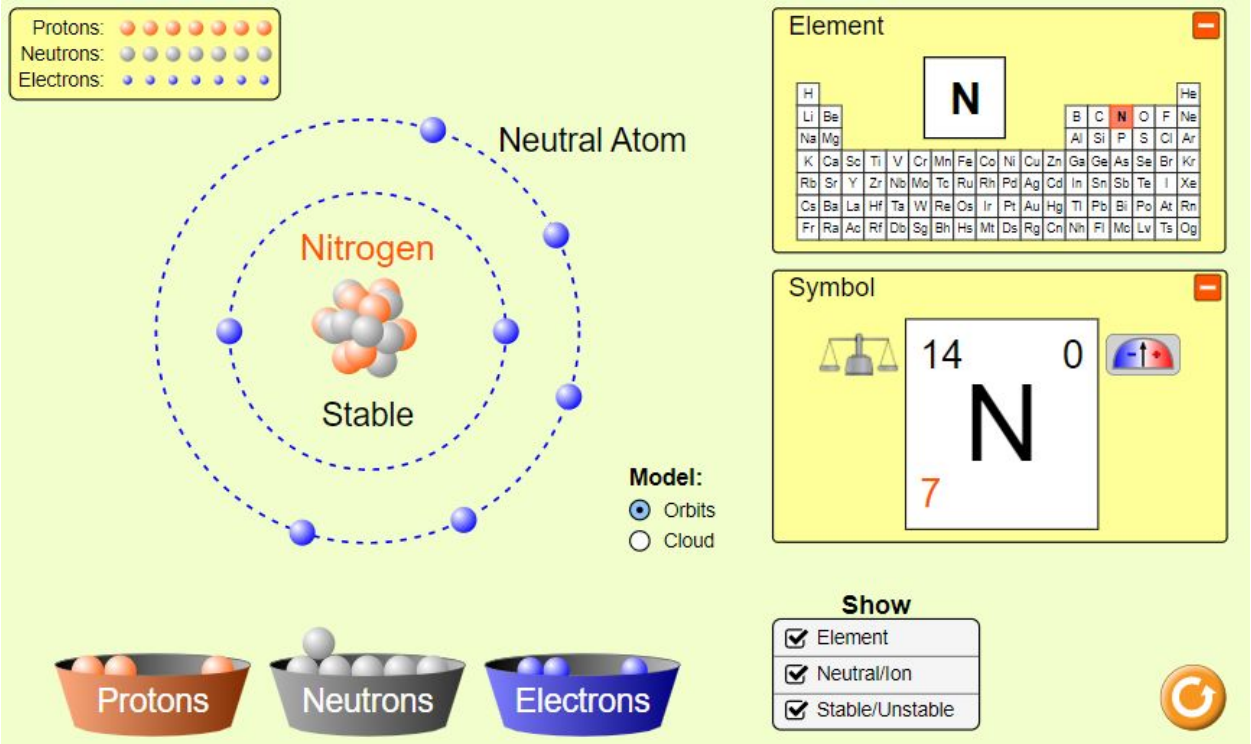
- AP Bio lab modeling: For labs that are not able to be done online or at home, the teacher models them, compiles pictures, and engages students in discussion about results, relates it to the topic, and cites its significance. Students then complete the lab report and turn it in.
- Utilize a variety of interactive slides so students can focus on the process of how to do it (like solving stoichiometric problems) and relating this topic to real life scenarios. Limiting reactant stoichiometry can be relevant in creating new products to be released in the market, for example, medicine.
  - Chemists will need to identify the limiting reactant to predict the mass produced in the reaction. Effective mass production of any medicine can be made if the chemical reaction is known, identifying the limiting reactant to optimize the process.



- Use of team based and game format activities such as Escape Rooms enables students to reinforce learned concepts and collaborate with other students.



- Utilize lab simulations to supplement concepts discussed. In the simulation Build an Atom, students were able to use the phet simulation that enables to visualize the different subatomic particles and explain the role of these particles in atoms.



- Use of student-centered learning activities and competitions to create interactions that are both fun and productive. One example of this is the "Periodic Table Virtual Scavenger Hunt." Students competed virtually to complete the answers and the student or group that completed the assignment correctly in the shortest possible time won the scavenger hunt. Teacher rewarded the winning students with a Periodic Table Pen and Trophy that was sent to the winner's doorstep.

Periodic Table Virtual Scavenger Hunt!!

DAY 1

******TYPE YOUR ANSWERS IN RED

PART 1: Organization of the Periodic Table

Click here to be taken to a website to answer the following questions.

1. Why are the elements placed in specific places on the Periodic Table? _____
2. Periods are _____ that run from _____ to _____.
3. Elements in the same period have the same _____.
4. Every element in the first period has _____ shell for its _____. Every element in the second period has _____ for its _____. See the pattern?
5. Groups are _____ that run from _____ to _____.
6. The elements of a group have the same number of _____ in their _____ shell.
7. Every element in group one has _____ electron in its outer shell. Every element in group two has _____ electrons in its outer shell.
8. Hydrogen is special because it can act like two groups, _____ and _____.
9. Hydrogen sometimes is _____ an electron and sometimes it has an _____ electron.
10. Although helium has only _____ electrons in its outer shell, it is grouped with elements that have _____.
11. The green elements on this table are called _____ elements. They each have two electrons in their outer shell.

Click here to be taken to a website to answer the following questions.

12. Click on Alkali Metals (left bar) and answer the following questions.

a. What is the group number? _____

b. Are these metals reactive? _____