CHEMICAL BONDING

TIC TAC TOE

This project is a lot of fun for both students and parents; essentially the student will pick three boxes with project ideas in each box the goal is for them to complete all three and earn a TIC-TAC-TOE by finishing three projects vertically, horizontally or diagonally. The free space is dedicated for those students who have a great idea and want to impress you with their creativity and understanding about chemical bonding

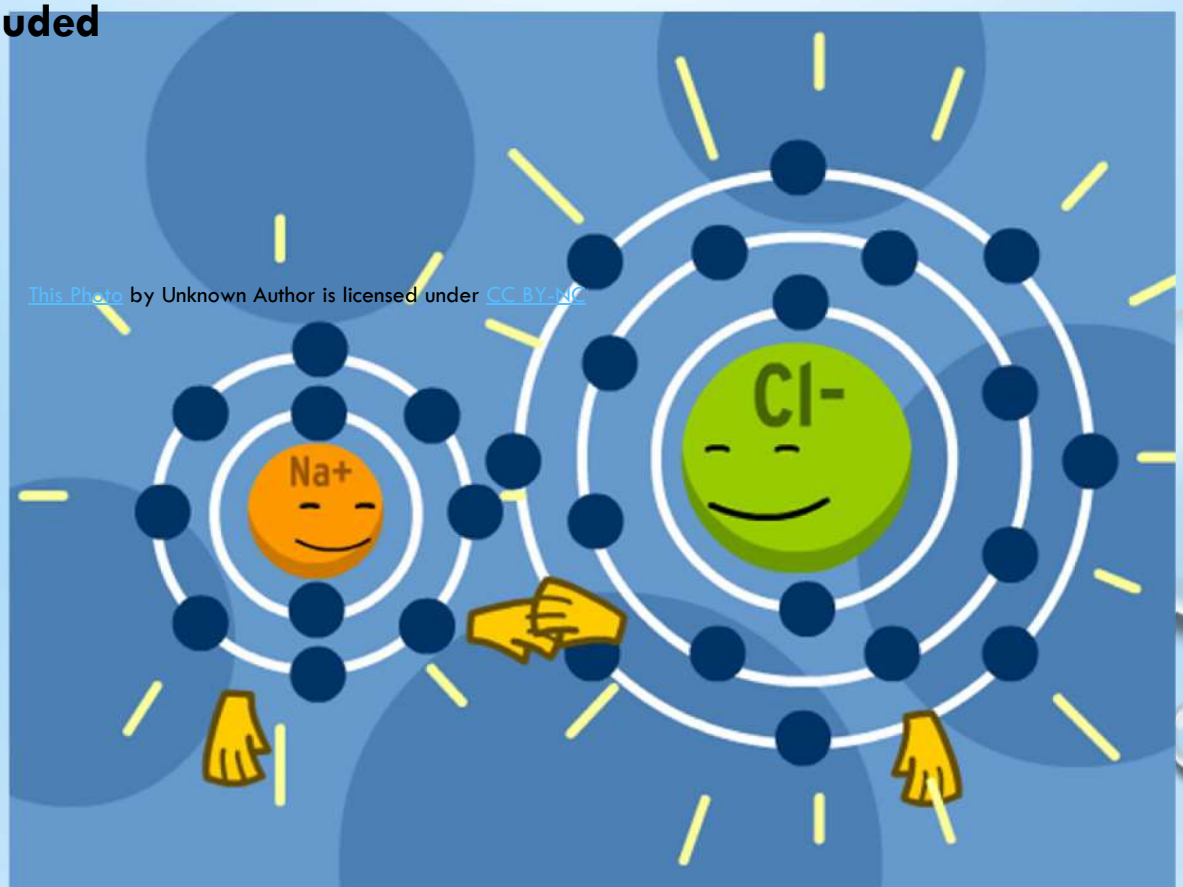
Possible materials needed

- Poster board or large white paper
- Materials from a board game
- Ruler for drawing (comic strips, etc.)
- Cell phone for video recording

. I tell them to not spend anything more than $5 dollars. Be crafty and try to bond with some items and repurpose them!

Time frame - 2-3 Weeks

Rubric Included



Teachers guide for Bonding .

Learning goal for this activity- I use this project once I have completed teaching my lessons on ionic and covalent bonding and allow this to serve as a reflection about what they have learned. This project could run along side with a portion of class time allowing students to work with their teams.

The overall goal of this project is for the student to provide evidence that they understand Ionic, covalent, and comparisons of the two. In a fun way. I have been amazed with the products students and student buy in to this project. I had students filming a *Saturday Night Live Skit, writing and then acting out the play they wrote. I really enjoyed this project and I know you will as well.*

The Learning Goal for this project is:

1. Students will distinguish differences and concepts of Ionic and Covalent bonding
2. Students will explain nomenclature, interpretation and the correct construction of formulas for ionic and covalent compounds.

Timeframe for this activity: 2-3 weeks; however, it could be shortened by assigning more students to the work group.

The Vocabulary needed for this project; however, you as a teacher may want them to use a specified amount or add words of your own that you feel your students would grasp better.

Essential Chemical Bonding Vocabulary words that should be addressed in the students three products.

Atom, Metals, Cations, Ions, electronegativity, Ionic Salts, Lattice energy, Polarity, Non-polar covalent bond, polar covalent bond, molecule, chemical formulas, molecular formula, bond energy, Lewis dot Structures, Single, double, triple bonds, activation energy, resonance structures, potential energy, kinetic energy, Orbitals, polyatomic ions, VSEPR Theory, hybridization, dipole, London dispersion forces

TIC TAC TOE

Chemical Bonding and Nomenclature

Student Name _____Period_____Date_____

Learning goal for this activity

•Students will distinguish differences and concepts of Ionic and Covalent bonding
•Students will explain nomenclature, interpretation and the correct construction of formulas for ionic and covalent compounds.

Various vocabulary words that should be addressed in your three products.

Atom, Metals, Cations, Ions, electronegativity, Ionic Salts, Lattice energy, Polarity, Non-polar covalent bond, polar covalent bond, molecule, chemical formulas, molecular formula, bond energy, Lewis dot Structures, Single, double, triple bonds, activation energy, resonance structures, potential energy, kinetic energy, Orbitals, polyatomic ions, VSEPR Theory, hybridization, dipole, London dispersion forces

Possible materials needed

•Poster board or large white paper
•Materials from a board game
•Ruler for drawing (comic strips, etc.)
•Cell phone for video recording

Directions: As you complete each product bring them in for presentation and you will receive a stamp. Full completion should form a tic tac toe across, diagonal, or down. You must select three topics 1 Ionic, 1 Covalent and 1 Comparing Ionic and Covalent

Be creative! I should hear an angel sing and be blinded by light when you present your products as this will be a large part of your project-based grade category, so do not take it lightly.

Be sure to not rush, instead create neat, accurate and clever products in order to explain ionic and covalent bonding to your classmates.

Price Limits: Please do not spend any more than $5.00 on all three projects. So be thrifty, find items at home to repurpose, be crafty and creative as you complete your three products.

Remember to finish this project you must complete three products either across, diagonal, or vertical. If you miss any of the products you will not win this project goal.

*Be sure to mark each element as you complete each product. Do not wait until the last moment to start working on this project because we want a great product and not rushed work. .

This project will be due on _____

Ionic Bonding **Trading Cards – You must make a trading card using 3'5 Index cards. These cards will explain different ions and how they combine to form ionic compound heroes. Cards must be neat, colored, assume you are designing roleplaying type cards. All cards should be placed in a carrying bag.**	**Covalent Bonding** **Develop a board game that takes players on a journey through the various methods chemicals form covalent bonds. The game should foster a theme of sharing, just like covalent bonding. You may design the game incorporating Lewis dot structures, and differences in naming as covalent compounds do.**	**Comparing Ionic and Covalent** **Create a PowerPoint presentation comparing Ionic and Covalent bonding. Must contain 10 slides, No more than 10 words per slide, Colored theme with only one graphic per page. Animations are optional but must not be distracting. Written in your own words with information cited.**
Comparing Ionic and Covalent Bonding **Draw a comic strip that shows the similarities and differences between Ionic and Covalent Bonding. You should make the comic colorful, funny and accurate.**	FREESPACE **Have a great idea other than those listed here that will explain either Ionic or Covalent bonding? Fill out the Free Space Proposal form attached, and have it approved to earn an X in this location.**	**Ionic Bonding** **Create a class model that allows other students to interact with bonding by demonstrating the method ions pair up to form bonds. Be sure to use the vocabulary associated with this unit that deals with Ionic Bonding**
Covalent Bonding **Write a song or rap. And then share your work by singing/rapping for the class** **Use words from the associated vocabulary dealing with covalent bonding. Must be performed**	**Ionic Bonding** **Write and perform a play, dance, musical performance or piece of art. Your muse and focus to tell the story through art about a lonely atom whom has one dream to find another ion to bond**	**Ionic and Covalent** **SKIT OR AN ACT You will play the role of once lonely atom that has met his perfect ION date online. atomicmatch.com Explain to your classmates how you met this wonderful ion. What activities did you do**

Free Space Proposal

Complete this form to get prior approval for an idea that you have allowing you to earn an x on the free space. It is not required that you fill the free space but perhaps you have a great idea that I have not thought of if so, write it down and submit it for approval. Remember you must complete one ionic, one covalent and one comparing ionic and covalent in order to complete this project!

1. What is your Idea?

2. What type of bonding will this explain?

3. How will you accomplish this task?

4. What criteria should be used to grade it (e.g., neatness, content, creativity, artistic value)?

5. What will your product look like?

6. What materials will you use to create this product? Will any materials need to be provided by me for you to create this product?

Teacher Approval Signature _____

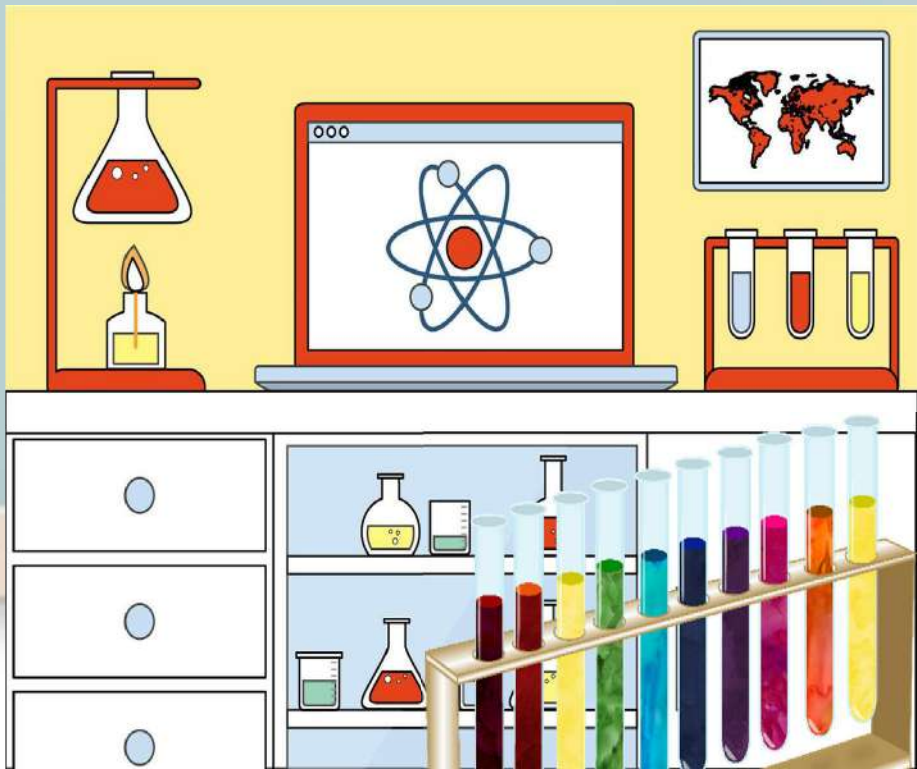
Kalium's Chemistry

Thank you for your purchase

I hope you will find this resource to be easy for you and meaningful for your students. My goal is to provide you with resources that allow you to differentiate your lessons and not break the bank in the process.

Please if you liked my work please leave me feedback !

Questions?? Please do not hesitate to send me a message!



Rubric for Grading

Student Name

_____Period_____Date_____

Your grade for this project A B C D F _____%

Teacher Comments/Feedback:

_____

_____

_____

Criteria	Excellent	Good	Fair	Poor
Prepared and Ready- All materials are ready and turned in by the due date	10 points everything is ready to go	6 Points Mostly present	3 points Present but scrambling to complete	0 Points NOT READY AT ALL
Understanding – Presenter understands the material well all information is presented	20 Points All information is correct and in the right format	12 Points Presenter understands; 75 % of the material	4 Points Presenter understands half of the material	0 points Presenter understands nothing of what they are presenting, rather just reading information
Interesting and Fun – Presentation was involving, others enjoyed it for its content.	15 Points Everyone Enjoyed and participated	10 points Most of the class participated	5 points Few members of the class understood or participated	1. Points No one participated and were bored
Creativity - Information was presented in an imaginative way	20 Points I heard an angel sing and was blinded by the creativity of this project. As was the class	12 points Good Idea	5 Points Some good pieces but general in nature	0 Points Not creative, everyone wanted to throw tomatoes at you.
Total Point values				