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| Course/Subject/Grade(s): Science 9 | | | | | | Planning Team | | |
| Unit Big Idea: The electron arrangement of atoms impacts their chemical nature | | | | | | Unit Guiding Question(s): How and why do atoms combine to form compounds? | | |
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| Goals | | Access – This is what I NEED to know and do | All – This is what I MUST know and do | | Most – This is what I CAN know and do | | Few – This is what I COULD know and do | Extension – This is what I can TRY to know and do |
| Content Goal:  Structure of the periodic table  Types of compounds | | I know what an element it  I know the 3 subatomic particles  I can draw Bohr models for elements  I can determine the number of each subatomic particle in an element or ion  I know the 10 number prefixes | I know the periodic table is arranged by atomic number  I can identify metals and non-metals  I can identify a compound as ionic or covalent  I can name covalent compounds  I can name binary univalent ionic compounds | | I know 4 chemical families  I know the 7 diatomic atoms  I know how elements are grouped on the periodic table  I can explain why covalent formulae are not reduced  I can explain why ionic formulae are reduced  I can name ionic compounds with polyatomic ions | | I know the semi-metals  I can explain why only 7 elements are diatomic  I can explain the size changes for atoms across a period, down a row  I can explain why some metals are multivalent  I can name multivalent ionic compounds | I can explain how and why metallic character changes across periods and down rows  I can explain why some compounds do not fit in the ionic/covalent trends  I can predict the charge for a metal |
| Curricular Competencies: Processing and analyzing data  Evaluating | Seek and analyze patterns, trends and connections in data | I can arrange into an order | I can find at least one pattern in a data set and use it to arrange the data | | I can explain the pattern in a data set | | I can predict where there is a missing data point in the data set  I can predict where an new data point will do given partial information | I can find additional examples of the pattern in the natural world  I can express the trend in multiple ways |
| Construct analyze and interpret graphs, models and/or diagrams | I can fill in a pre-set-up model or diagram | I can construct a model or diagram and explain it | | I can use my constructed model or diagram to explain science concepts | | I can identify and explain errors or missing points in my model or diagram. | I can use my diagram or model to explain phenomena from society or a different science concept |
| Use knowledge of scientific concepts to draw conclusions that are consistent with evidence | I can summarize the evidence of an experiment | I can write simple one point conclusions using scientific vocabulary from the unit | | I can write conclusions which draw on 2 or more point using scientific vocabulary from the unit | | I can compare conclusions to theory and explain differences and the reasons for the errors in the experiment or data | I can explain how the conclusion has relevance for our lives in society |
| Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled | I can recognize the difference between a model and the real thing  I can explain why models are used | I can recognize the validity or limitations of the model I am studying | | I can explain the historical significance of the model | | I can compare and contrast different models based on validity and limitations | I can suggest changes to a model to address limitation |