

# Krug Chemistry – Deep Run Daily Planning Guide

Date of Lesson: Q1 Day 21 – Periodic Trends Jigsaw Project

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| <b>Topic /Big Questions: (<a href="#">Question Stems</a> &amp; <a href="#">Question Creation Chart</a>)</b> <ul style="list-style-type: none"> <li>• How do chemists use the periodic table as a tool?</li> <li>• What trends can be seen in the table?</li> <li>• How do the physical and chemical properties change as you go across a period?</li> <li>• How do the physical and chemical properties change as you go down a group?</li> <li>• Who designed the modern periodic table?</li> <li>• What benefits or limitations are present in other designs for the periodic table?</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b><a href="#">State SOL</a></b><br><br>CH1<br><br>CH 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Unpacking the Standards (<a href="#">Video explanation shown at 3:18</a>)</b><br><br>CH.1 The student will demonstrate an understanding of scientific and engineering practices by f) obtaining, evaluating, and communicating information<br><br>The student will investigate and understand that elements have properties based on their atomic structure. The periodic table is an organizational tool for elements based on these properties. Key information pertaining to the periodic table includes a) average atomic mass, isotopes, mass number, and atomic number; b) nuclear decay; c) trends including atomic radii, electronegativity, shielding effect, and ionization energy; d) electron configurations, valence electrons, excited electrons, and ions; and e) historical and quantum models. |
| <b>Visible Learning (For the three items with asterisks*, think from a student perspective. Use simple language)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>*What am I learning today?</b> Chemists use the periodic table as a tool to define the physical and chemical properties of elements.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>*Why is it important?</b> The periodic table contains trends, such as atomic radius, ionization energy, metallic properties, electronegativity, and shielding, that will help chemists predict the behavior of elements.                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>*How will I know I've learned it?</b> I will research the trend I am assigned by the teacher and I will participate in the jigsaw activity to learn about the other trends.                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b><a href="#">Differentiation strategies:</a></b><br><br><b>Periodic Trends Jigsaw Project</b> <ul style="list-style-type: none"> <li>• Periodic Trend Group Criteria</li> <li>• Periodic Trend Research Worksheet</li> <li>• Google Slide Presentation</li> <li>• Kahoot</li> <li>• Periodic Trends Jigsaw Rubric</li> </ul>                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Accommodations and/or modifications are being met for students with IEP's/504's.</b><br><br>Small group activities; frequent checks for understanding; materials available on Schoology                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**Daily Plan/Sequence of Instruction:**

Students will be separated into groups. Each group will research a different periodic trend. Students will work together to complete the **Periodic Trend Research Worksheet** for their specific trend. Once their research is complete, students will create a **Google Slide Presentation** and a **Kahoot**. Students should refer to the Group Criteria document and the **Periodic Trends Jigsaw Rubric** to make sure they have completed all tasks. Students will have 2 class blocks to complete this assignment. Then they will take turns giving their presentations and Kahoots to the class.

**Assessments (List all [formative/summative](#) assessments used to check for understanding during this lesson. Summative assessments may occur during a different class period.):**

**Kahoots** – (summative)

**Periodic Trends Jigsaw Rubric** – (summative)

After assessing today's lesson are you and your students comfortable moving forward with your next objective?

**Yes** - students have scored 80% or higher on the Kahoot quizzes and the Jigsaw Rubric

**No**, remediation required to proceed – students, who fail a Kahoot quiz from their class period, can retake a different Kahoot for the same trend that was made by a different class; teacher will warn students in jeopardy of failing the Jigsaw Rubric; corrections will be discussed but partial credit points will NOT be awarded once the presentations are over.

**Teacher reflection:** In 2018, I had trouble with college prep students researching the wrong trend. Every time I asked if they needed help, they declined assistance. I explained their trend to the them at least three times and offered assistance every class. When they did their presentation it was obvious that they were talking about the wrong trend. Although they gave factual information, they lost points for not talking about their trend that was assigned. This caused tension because they were "A" student, who received an "F" on this project... which counted as a TEST grade. The girls kept interrupting my other classes to ask for a points back and extra credit options. This was very disrespectful. I finally had to email the parents and lay it all out – both the lack of focus on the project and the disrespectful interruptions. To avoid this in the future, I have redesigned the Periodic Trend Research Worksheets to be more specific for each trend. So now I have a different worksheet for each trend, instead of a one size fits all worksheet. I will also make it clear that students will be given time to fix their presentations and Kahoots, but once they present to the class – their grade is their grade. Done deal. So make it count!