

# SHOWCASE LESSON

<b>TOPIC/Objectives</b>	<p>8<sup>th</sup> Grade Earth Science – Chemistry Unit TOPIC: Naming and Categorizing Ionic Compounds OBJECTIVES: SWBAT –</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Name chemical formulas containing any combination of<ul style="list-style-type: none"><li><input type="checkbox"/> metal</li><li><input type="checkbox"/> nonmetals</li><li><input type="checkbox"/> transition metals</li><li><input type="checkbox"/> polyatomic ions</li></ul></li><li><input type="checkbox"/> Write chemical formulas if given the name</li><li><input type="checkbox"/> Identify a chemical formula as ionic or covalent</li></ul>
<b>P</b>	<p><b>HOW DID YOU GET THE STUDENTS EXCITED ABOUT THE LESSON?</b> After briefly reviewing one topic from the previous class I needed to address, I got the students excited while checking for understanding by asking them to rate themselves on a scale. Each student was given a sticky note and asked to write their name on it. I had the students come up to the board and place their sticky note on the scale based on how they felt about the material. They could rank themselves as a “Jedi Padawan” (beginner), “Jedi Knight” (intermediate), or “Jedi Master” (expert). This got students excited about the lesson because not only did they enjoy the Star Wars analogy and being able to get out of their seats, they were excited when I presented them with the challenge that after this class period I wanted them to be more confident in their abilities and be able to rank themselves in the next highest category.</p>
<b>L</b>  <b>A</b>	<p><b>HOW WERE STUDENTS ACTIVELY ENGAGED?</b> After the students ranked themselves, I passed out different cards to each student that each had both the name and the formula of an ionic compound on them. There were several different types of ionic bonds depending on what the cation and anion were, and the students had to categorize themselves by moving to a different part of the room based on what category their card belonged in. The six categories were Metal/Nonmetal (eg. NaCl), Metal/Polyatomic Ion (eg. NaOH), Transition Metal/Nonmetal (eg. FeO), Transition Metal/Polyatomic Ion (eg. Fe(OH)<sub>2</sub>), Polyatomic Ion/Nonmetal (eg. NH<sub>4</sub>Cl), and Polyatomic Ion/Polyatomic Ion (eg. NH<sub>4</sub>OH), and a poster with the category name on it was placed in a different corner of the room so students could spread out. Students stayed engaged because they had to think about their card in order to know where to go, as well as discuss with the other people in that category to make sure they got the correct answer.</p> <p><b>HOW DID YOU COMMUNICATE CONNECTEDNESS TO PRIOR AND FUTURE LEARNING TOPICS?</b> In order to categorize their compound, students needed to remember what metals, nonmetals, transition metals, and polyatomic ions were, which had been discussed in the previous few classes. Even though students did not need to memorize the transition metals or the polyatomic ions, they needed to be able to recognize what about the name or formula indicated that the ion was a transition metal or a polyatomic ion (transition metal names contain a roman numeral, polyatomic ions contain more than 1 element). This related to future topics as well because the next step, which was reflected in the practice activity the students began after this activity, was to be able to name chemical formulas as well as</p>

write the formula when given the name. If students knew how to categorize the ionic formula then it would be easier for them to determine the proper way to write the name/formula on their own.

#### **HOW WERE STUDENTS FORMATIVELY ASSESSED?**

Though not due at the end of the period, students were formatively assessed by the ionic naming worksheet that the students worked on for the remainder of the class period. While only a few of the students turned it in at the end of the period, I did get a chance to walk around to the table groups, ask if they needed help, and see what they were working on and where they needed help. This gave me a pretty good idea of how the students were doing on the material before the class period ended. I eventually took up their worksheets during the next class for a grade, which solidified how they were doing on the material. Also, while not necessarily an assessment, I did check for student understanding again by asking students to move their sticky note on the board if they felt they improved during the class period, which many students did. While not every student moved their sticky note, it was helpful for me to see who did feel they had improved, so that when I was looking at their worksheets later I could tell who was getting better and more confident, even if their work still had some mistakes.

#### **HOW DID YOU DIFFERENTIATE INSTRUCTION?**

Because students had the ability to work at their own pace during the practice time, it allowed for instruction to be differentiated based on the student's skill level. I allowed students to move around the room and choose who they wanted to work with, which typically meant they paired themselves with other students who worked at the same pace as them. I have noticed my students will work harder and stay focused when they are allowed to choose who they work with, because sometimes their normal group members work at a different pace than them, which makes collaboration difficult. I was able to walk around and help students who needed a little more support, and I also asked students who deemed themselves a "Master" at the beginning of the class to help their classmates with the work when they were finished. I also gave the students who finished quickly an additional worksheet to do that was slightly more difficult, in order to challenge them on the material. This was also helpful because the second worksheet was not being taken up for a grade, so students who worked slower did not have to stress about finishing multiple practice sheets and could focus on mastering the material they had and asking for help.

#### **HOW DID YOU SUMMARIZE THE LEARNING GOALS?**

I summarized the learning goals for the students both at the beginning and the end of class, before each time I asked them to move their names on the scale. This allowed them not only to know what we were talking about for the day, but exactly what material I was asking them how confident they were in. Even if the students did not feel good about the learning goals at the beginning of class, I emphasized that it was more important for them to feel like they were improving and feel more confident about the learning goals by the end of the class.

**N**