



**THIS IS AN EXAMPLE OF A LESSON PLAN USING JUSTIN.TV THAT COULD BE USED TO TEACH A 10<sup>TH</sup> GRADE CLASS**

### **CHEMISTRY: PERIODIC TABLE**

<b>Overview</b>	In this lesson using justin.tv students will first learn the basics behind the organization of the periodic table. Then via broadcast on Justin.tv the students will be able to interact with University chemists and professors through a presentation and discussion about the periodic table.
<b>Objective</b>	Students will : <ul style="list-style-type: none"> <li>• Organize the first 18 elements of the periodic table according to their atomic mass, number of electron shells, and valence electrons</li> <li>• Then students will compare their order with the periodic table to see if they were right.</li> </ul>
<b>Learning environment</b>	Classroom with a large screen and computer with a high speed internet connection.
<b>ISTE/NETS Standards</b>	<ol style="list-style-type: none"> <li>1. Facilitate and Inspire Student Learning and Creativity</li> <li>2. Design and Develop Digital-Age Learning Experiences and Assessments</li> </ol>
<b>Materials</b>	<ul style="list-style-type: none"> <li>• Large screen</li> <li>• Computer with high speed internet connection</li> <li>• Speakers</li> <li>• Microphone</li> <li>• Webcam or video recording device</li> <li>• Writing materials</li> <li>• Index cards</li> <li>• Periodic Table</li> </ul>
<b>Procedure</b>	<ol style="list-style-type: none"> <li>1. Create a card for each of the first 18 elements of the periodic table. Include the following information at the top of each card, leaving at least half of the card empty so that students can fill in more information:           <ul style="list-style-type: none"> <li>✿ Atomic number</li> <li>✿ Element symbol</li> <li>✿ Atomic name</li> <li>✿ Atomic mass</li> </ul> </li> <li>2. Make enough copies of these cards so that small groups of students will each have one set. Also, make sure that all</li> </ol>

<p><b>Procedure</b></p>	<p>classroom periodic tables are put away or covered up.</p> <ol style="list-style-type: none"> <li>3. Review the definition of an element and an atom. Next, review the basic structure of an atom, including the nucleus, protons, neutrons, and electrons. Choose one of the first 18 elements on the periodic table. Show the class how to draw a model for that element using the element's atomic number and atomic mass. Point out how many electron shells are in the model, as well as the number of valence electrons, or electrons in the outermost shell.</li> <li>4. Divide the class into small groups. Give each group one set of element cards (one for each of the first 18 elements on the periodic table.) Based on the facts on the card, ask groups to fill in the bottom of each card with the following information: <ul style="list-style-type: none"> <li>✿ Number of protons, electrons, and neutrons</li> <li>✿ A model of an atom of that element</li> <li>✿ Number of electron shells in the atom</li> <li>✿ Number of valence electrons</li> </ul> </li> <li>5. Next, ask each group to arrange their cards in order using the following rules: <ul style="list-style-type: none"> <li>✿ Cards must be placed in the order of their atomic number.</li> <li>✿ All cards in the same column must have the same number of valence electrons.</li> <li>✿ All cards in the same row must have the same number of electron shells.</li> </ul> </li> <li>6. When groups have completed this task, reveal a periodic table to the class. Ask them to compare the order of their cards with the order of the periodic table.</li> <li>7. After comparison students will then log on to Justin.tv and watch a scheduled broadcast prepared by chemists or professors from a nearby University or College. The chemists will give a presentation about other elements that the students did not cover, and elements that high school students probably do not get to have any experience with until College.</li> <li>8. Once the presentation is over students will be able to post questions in the chat room to the chemists to prepare for their presentation that they will be giving to the class.</li> </ol>
<p><b>Application</b></p>	<ul style="list-style-type: none"> <li>• Students will check each other's work and see why someone may get confused on certain parts of the periodic table.</li> <li>• Students will apply their knowledge that they have learned in this lesson throughout the semester, because trends within the periodic table are very important to know in science.</li> </ul>
<p><b>Evaluation</b></p>	<p>For an evaluation students will give a presentation in front of the class one of the elements found in the periodic table. They will discuss who found the element, the date founded, why is it significant/it's importance, and provide examples of products that use or are made with their element of choice.</p>
<p><b>Resources</b></p>	<p><a href="http://school.discoveryeducation.com/lessonplans/programs/ec_periodictable/">http://school.discoveryeducation.com/lessonplans/programs/ec_periodictable/</a></p>

