### Advanced Clues

<table>
<thead>
<tr>
<th>Red:</th>
<th>Blue:</th>
<th>Yellow:</th>
</tr>
</thead>
</table>
| 1. Most abundant element in the universe  
2. Alkali metal in the 4th period ***Pen up | 1. Makes up 78% of air  
2. Most common isotopes have mass numbers of 10 and 11  
3. 6th period, group 13  
4. Atomic mass = 208.98 ***Pen up  
5. Mendeleev predicted the existence of this low melting point metal, one period below Al  
6. Famously poisonous group 15 metalloid ***Pen up | 1. Atomic number = 27  
2. Neutral atom contains 25 electrons  
3. 42 protons  
4. Atomic mass = 183.84  
5. Named after Nobel Prize winner Niels  
6. 159 neutrons ***Pen up |

<table>
<thead>
<tr>
<th>Purple:</th>
<th>Green:</th>
<th>Orange:</th>
</tr>
</thead>
</table>
| 1. 6th period, group 16  
2. Period 2 element that commonly forms an anion with a -2 charge  
3. Halogen, liquid at room temperature  
4. Period 2 element with 8 valence electrons  
5. Radioactive, colorless, odorless noble gas ***Pen up | 1. +2 cation has 26 electrons  
2. Atomic number = 110 ***Pen up  
3. Makes up 97.5% of a U.S. penny (hint: it’s not copper!)  
4. Named after famous astronomer who formulated the heliocentric model of our solar system ***Pen up  
5. 5th period, group 10  
6. 48 electrons in neutral atom ***Pen up | 1. Period 4 alkaline earth metal  
2. +1 cation has the same electron configuration as Kr  
3. The second row of the inner transition elements (f-block) is named after this element  
4. Most common isotope has 52 neutrons and a mass number of 93  
5. Both carbon fiber and this element are used to make high-end racing bike frames  
6. Period 5 transition metal chemically similar to the lanthanides  
7. Stored in bones and teeth ***Shade the interior of the shape orange |

American Association of Chemistry Teachers