Where did I learn it? THE MATRIX ~ Unit: \_\_\_\_

For each standard we learned during this unit, indicate in the box provided to the right which assignment or class activity we learned it through. There may be more than one activity that relates to the standard.

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| **Topic** | Nature of Matter |
| **Benchmark**[**SC.CH.4.7**](http://165.248.72.55/hcpsv3/imr/report_by_code.jsp?code=SC.CH.4.7) | Describe why the chemical bonds between atoms in molecules, such as H2, CH4, NH3, C2H4, N2, Cl2, and many large biological molecules are covalent |

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| **Benchmark**[**SC.CH.4.2**](http://165.248.72.55/hcpsv3/imr/report_by_code.jsp?code=SC.CH.4.2) | Identify the essential characteristics of alkali metals, alkaline earth metals, and transition metals, trends in ionization energy, electronegativity, and the relative sizes of ions and atoms |
| **Sample Performance Assessment (SPA)** | The student: Explains that characteristics of alkali metals, alkaline earth metals, and transition metals reflect the overall trends in ionization energy, electronegativity, atomic radius, and ionic radius within the periodic table.  |

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| **Topic** | Periodic Table |
| **Benchmark**[**SC.CH.4.3**](http://165.248.72.55/hcpsv3/imr/report_by_code.jsp?code=SC.CH.4.3) | Use the periodic table to determine the number of valence electrons of an element |
| **Sample Performance Assessment (SPA)** | The student: Uses the periodic table to determine the number of valence electrons in sodium, oxygen, copper, iron, and gold).  |

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| **Benchmark**[**SC.CH.4.6**](http://165.248.72.55/hcpsv3/imr/report_by_code.jsp?code=SC.CH.4.6) | Explain that atoms combine to form molecules by sharing the outermost electrons to form covalent, or metallic bonds or by transferring electrons to form ionic bonds |
| **Sample Performance Assessment (SPA)** | The student: Describes covalent, ionic, or metallic bonds in terms of valence electrons and gives an example of each type of bond.  |

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| **Benchmark**[**SC.CH.4.9**](http://165.248.72.55/hcpsv3/imr/report_by_code.jsp?code=SC.CH.4.9) | Describe how electronegativity and ionization energy relate to bond formation |
| **Sample Performance Assessment (SPA)** | The student: Explains how to tell the difference between a polar-covalent vs. non-polar bond based on the properties of electronegativity and ionization energy.  |

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