How to Use the Oregon 4-H STEM Activity Template

**Skill Level:** Choose either or both as appropriate to the activity: Elementary (age 6–11), Middle School (age 12–14)

**NGSS**
All of the Science and Engineering Practices and the Crosscutting Concepts are listed on the chart below in their columns. On the activity sheet list ONLY those practices and concepts which the youth will actually experience in the activity. If only using science practices edit the text in the purple box to read “Science Practices.” If only using engineering practices edit the text in the purple box to read “Engineering Practices.” For help aligning your lesson use tools on the web site [http://www.nextgenscience.org/](http://www.nextgenscience.org/).

<table>
<thead>
<tr>
<th>Science and Engineering Practices</th>
<th>Disciplinary Core Ideas**</th>
<th>Crosscutting Concepts</th>
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</table>
| 1. Asking questions (for science) & Defining problems (for engineering) | **Example Only***:  
PS1: Matter and its interactions  
PS2: Motion and stability: Forces and interactions  
LS1: From molecules to organisms: Structures and processes | 1. Patterns  
2. Cause and effect: Mechanism and explanation  
3. Scale, proportion, and quantity  
4. Systems and system models  
5. Energy and matter: Flows, cycles, and conservation  
6. Structure and function  
7. Stability and change |
| 2. Developing and using models |  |  |
| 3. Planning and carrying out investigations |  |  |
| 4. Analyzing and interpreting data |  |  |
| 5. Using mathematics and computational thinking |  |  |
| 6. Constructing explanations (for science) and designing solutions (for engineering) |  |  |
| 7. Engaging in argument from evidence |  |  |

**To determine which Disciplinary Core Ideas the activity is aligned with go to this link:** [http://www.nap.edu/read/18290/chapter/11](http://www.nap.edu/read/18290/chapter/11).

**Objective**
In this activity, students will.....

**About the Scientist** (if appropriate)- provide interesting information about the type of scientist who would use the information in the lesson and/or these science and/or engineering practices in their everyday work

**The Science of __________________**
Provide useful and interesting information about the topic. Provide and define science vocabulary. Use italics for the key vocabulary words.
Safety Information – For any materials used in the activity that may be any kind of hazard list the material and direct activity users to download the applicable Materials Safety Data Sheet at this link http://www.msds.com/