**Teacher Information**

<table>
<thead>
<tr>
<th>Name</th>
<th>Lisa McKinney</th>
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<tbody>
<tr>
<td>School</td>
<td>Metz Middle School</td>
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<tr>
<td>Grade Level and Content</td>
<td>7th grade Life Science &amp; 8th grade Physical Science</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:lmckinney@manassas.k12.va.us">lmckinney@manassas.k12.va.us</a></td>
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<tr>
<td>Companies Visited</td>
<td>Loudoun Water, REHAU</td>
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**Educational Transfer Plans**

<table>
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<tr>
<th>Observations</th>
<th>Classroom Connections</th>
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<tr>
<td>A graphic of overall daily water usage at Loudoun water. We discussed their plans to implement a</td>
<td>Students will be broken into five groups. Water usage data will be collected for 30 days</td>
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<td>new water meter reader system that will send data hourly from each residence instead of monthly.</td>
<td>in each of five different 2-hour spans. For example, one group will be given the 2-hour</td>
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<td>We also discussed how much less space needed to send that information versus the amount of data</td>
<td>span of 5-7 AM and the next group will be given the 2-hour span of 9-11, etc. After 30</td>
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<td>that is needed for graphics or video. Simple binary code.</td>
<td>days, each group will have enough data to calculate the mean, the standard deviation, z-</td>
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<td>scores for particular piece of data in the future, etc. Students will have access to</td>
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<td>graphing calculators and each group will need to report out verbally. Finally, each student</td>
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<td>will need to use each GROUPS mean score, to draw a curve on a graph to represent the</td>
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<td>nature water usage versus time over a 24-hour period. Individually, students will write a</td>
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<td>graph story. (LS.1, 6, 7 &amp; 8 and A.9, 10 &amp; 11)</td>
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<tr>
<td>We saw a model of a community well filtration system.</td>
<td>Students will be broken into five groups. The goal is to build a water filtration system</td>
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<td>to sell to individuals. The criteria will be to research, design, build, and market to</td>
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<td>sell this piece to the team teachers. Parameters will be set out such as that each</td>
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<td>person will only be allowed to spend $3 of their own money to purchase materials. (We have</td>
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<td>a small storehouse of recycled materials in our tech room.) Time limits for filtration,</td>
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<td>etc. will be established. They will give a sales pitch demonstration to team teachers.</td>
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<td>(LS.1, 6, 7 &amp; 8)</td>
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Liz from Loudoun Water talked to me about a project she had to do in college or high school concerning building bridges. Also, every person at Loudoun Water was concerned with redundancy. Back up pumps, generators, people, water supplies. They continued to ask “What if...”

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<th>Liz from Loudoun Water talked to me about a project she had to do in college or high school concerning building bridges. Also, every person at Loudoun Water was concerned with redundancy. Back up pumps, generators, people, water supplies. They continued to ask “What if...”</th>
<th>From an earlier project, in which students in groups of two, built cars using materials from children’s engineering. Criteria were set out. For example, it must roll at least ____ meters and support a 2-L of soda, etc. Using these cars students in 2 groups of 2, will build bridges to transport the soda bottles from one desk to another. Bridges are only allowed to be made of two materials and they must be pre-approved, not more than 1/4 the distance between desks, etc. Between the desks, which will be a specific span, is a gorge. Students must plan for the bridge to be hit by a plane. They must develop a “back up” plan to transport bottle from one side to the other. (Engineering)</th>
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<td>At REHAU, we were put through a sort of simulation in which German engineers had to work with an American Marketing team.</td>
<td>Student will be put into four groups. Each group will be commissioned with making a part of an overall design of a product (which I haven’t thought of yet, it should only have four integral parts.) Then, one person from each group will come together to make one product. Each team’s precision is critical to the overall performance of the product. It is a blown up jigsaw. The secondary group they are in must make the product work. (Engineering)</td>
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