All projects should be standards-based and have a clear and narrow set of key standards as the foundation of the unit. It is often helpful to start with science or social studies standards and then pull in the appropriate ELA standards. Math may or may not be fully integrated into the unit, but an inquiry-based approach should be used for math instruction. Once you have identified your key standards, unpack those standards into smaller skill sets to develop kid-friendly learning targets that will drive the learning throughout the unit (refer to a sample project for examples of learning targets).

<table>
<thead>
<tr>
<th>Subject Area</th>
<th>Standards</th>
<th>Learning Targets</th>
</tr>
</thead>
</table>
| Science      | ● NGSS.2-PS1-1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.  
● NGSS.2-PS1-2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose. | ● I can describe different properties materials can have  
● I can design a plan to test different materials  
● I can implement my test and record the results  
● I can analyze the data from my test and make a conclusion |
| Social Studies |                                                                      |                                                                                 |
| ELA          | ● CCSS.ELA-LITERACY.W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). | ● I can record my observations during an experiment  
● I can use my observations to answer a question  
● I can write a paragraph describing my observations |
| Math         | ● CCSS.MATH.CONTENT.2.MD.D.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.  
● CCSS.MATH.CONTENT.2.MD.A.1 Take and record measurements using appropriate tools  
● CCSS.MATH.CONTENT.2.MD.C.7 Use analog clock to tell time  
● CCSS.MATH.CONTENT.2.OA.A.1 Add and subtract two digit numbers by decomposing them into parts | ● I can make a graph of my test results  
● I can find helpful information from my graph  
● I can compare my graph to other graphs  
● I can measure with standard and non-standard units  
● I can tell time  
● I can add and subtract two digit numbers |
Project Brainstorm

Now that you have identified your standards and learning targets, use this mind map to brainstorm some possible project ideas that are authentic, high interest, and allow for inquiry and deeper learning.

**Authentic Products**
How are the standards applied in the real world?

To determine what materials are best for a product (engineering)

**Community Connections**
What opportunities exist within the community to explore the standards?

Best materials for new playground equipment

**Interesting Questions**
What questions can drive deeper inquiry about the standards?

What types of materials would remain cool / durable for playgrounds?

**Student Interests**
What student interests connect to the standards?

Playgrounds

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**Project Scenario, Entry Event, & Products**

Generate an authentic project scenario that is high interest, allows for deep exploration, and development of the key knowledge and skills. To launch the project, think about how to engage student interest with an entry event. Rather than starting with a letter or document alone, consider an activity that promotes exploration and encourages inquiry and discourse. Products should allow students to demonstrate what they know and are able to do.

<table>
<thead>
<tr>
<th>Project Scenario</th>
<th>Students will plan and implement tests to determine what type of materials are best suited for playgrounds in order to keep the playground equipment cool and durable in different weather conditions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry Event Description</td>
<td>Take kids out to the playground and ask them to find all of the different types of materials used in playgrounds (bark, cement, metal, plastic). Ask them to make a list and think of the pros and cons of each type of material. Have someone from the city come in to talk about need to update the city’s playground (or record video to show students). Show pictures of playgrounds from around the city (old playgrounds that need updating).</td>
</tr>
</tbody>
</table>
| Student Products | Presentation / Performance: Presentation to city planners with a recommendation on the type of materials to use in playgrounds (group)  
Artifact(s): Journal with observations and notes about the city’s playgrounds; Graphs of experiment and survey results; Letter to the community comparing the types materials used in our playgrounds (mostly individual)  
Audience: Community / City Planners |