

# PBL Turning Points: Gr 5 What's the Matter?

## Storyboard

Indicate key turning points with each formative assessment for the unit. Align the student artifacts/formative assessments from each turning point with the end product. By doing this, the product authentically becomes part of the learning.

<p><b>Turning Point 1:</b></p> <ol style="list-style-type: none"> <li>1. Deliver storyline</li> <li>2. Develop Need to Know Questions</li> <li>3. <a href="#">Research Retro Games</a> (Wakelet)</li> <li>4. Matter: Particular substances/materials can serve particular functions (Games)</li> <li>5. Flip introductions to other classes</li> <li>6. Google Meet w/RCK to review CnC Router/ CnC Plasma Cutter and 3d Printers as well as associated materials.</li> </ol> <p><b>Formative Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Need to Know Question</li> <li>2. Curated research</li> </ol>	<p><b>Turning Point 2:</b></p> <p><b>Properties of Matter</b></p> <ol style="list-style-type: none"> <li>1. Revisit Need to Know Questions</li> <li>2. Science Investigations 2, 9 &amp; 10: Measurements of a variety of properties can be used to identify materials.</li> <li>3. Crosswalk to fabrication / Design Thinking:: Properties are the characteristics that enable us to differentiate one material from another. Brainstorm (Sketchnote potential designs) Retro games</li> <li>4. Critique/Feedback on student designs</li> </ol> <p><b>Formative Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Science investigation artifacts</li> <li>2. Crosswalk to handheld game fabrication revisions as necessary</li> <li>3. Questions for MHRH</li> </ol>	<p><b>Turning Point 3:</b></p> <p><b>Conservation of Matter</b></p> <ol style="list-style-type: none"> <li>1. Revisit Need to Know Questions</li> <li>2. Investigation 3: The total amount of matter is conserved when it changes form.</li> <li>3. Investigation 6: When two or more different substances are mixed, a new substance with different properties may be formed. No matter what reaction or change in properties occurs, the total weight of the substances does not change.</li> <li>4. Crosswalk to fabrication / Design Thinking: Matter can be transformed from one form to the other by changing the conditions of temperature and pressure. Brainstorm (Sketchnote revise potential designs) Retro games</li> <li>5. Google Meet with Mid-Hudson Regional Hospital (MHRH) to discuss best suited properties of matter.</li> </ol> <p><b>Formative Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Science Investigation artifacts</li> <li>2. Crosswalk to handheld game fabrication revisions as necessary</li> <li>3. Key findings from MHRH Google met</li> </ol>
<p><b>Turning Point 4:</b></p> <p><b>Particulate Nature of Matter</b></p> <ol style="list-style-type: none"> <li>1. Revisit Need to Know Questions</li> <li>2. Science Investigations 4, 5, &amp; 8: Matter of any type can be subdivided into particles that are too small to see, but even then, the matter still exists and can be detected by other means.</li> <li>3. Crosswalk to fabrication /Design Thinking: Particles of matter are arranged and move differently and can explain the behavior of matter. Brainstorm (Sketchnote revise potential designs) Retro games</li> <li>4. Critique / Feedback on student designs</li> </ol> <p><b>Formative Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Science Investigation artifacts</li> <li>2. Crosswalk to handheld game fabrication revisions as necessary</li> </ol>	<p><b>Turning Point 5:</b></p> <ol style="list-style-type: none"> <li>1. Google Meet with Mid-Hudson Regional Hospital (MHRH) to finalize understandings of user needs and wants.</li> <li>2. Makers Challenge Design Thinking: <ul style="list-style-type: none"> <li>• Develop empathy</li> <li>• Define problem</li> <li>• Ideate</li> <li>• Prototype</li> <li>• Test</li> </ul> </li> <li>2. Create a video of Makers Challenge fabrication and send it to RCK students for review, refinement and fabrication.</li> </ol> <p><b>Formative Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Makers Challenge / Design Thinking elements</li> <li>2. Fabrication and video</li> </ol>	<p><b>Turning Point 6:</b></p> <ol style="list-style-type: none"> <li>1. Visit RCK to test fabrications for stability and sustainability</li> <li>2. Celebrate success</li> <li>3. Presentation and donation to MHRH.</li> </ol> <p><b>Summative Assessment:</b></p> <ol style="list-style-type: none"> <li>1. Final Production</li> </ol>