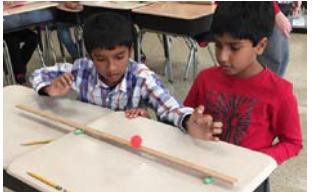
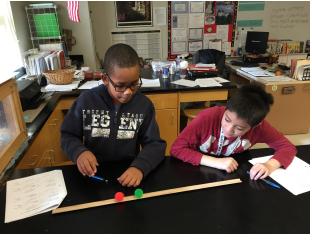


# Motion Energy Unit – Sequence of Activities

## 1. What can motion tell us about energy?

Activity	Learning Targets Introduced	Representations	Image of Activity
Rolling ball	<ul style="list-style-type: none"> <li>Energy cannot be directly seen or measured.</li> <li>All moving objects have motion energy.</li> <li>Speed is the indicator of how much motion energy an object has. If an object's speed increases or decreases, its motion energy has increased or decreased.</li> </ul>	Cards with symbols (no motion, some motion, lots of motion)	

## 2. Can a ball cause another ball to move AND not lose any of its own energy?

Colliding balls	<ul style="list-style-type: none"> <li>Energy can move from one object to another object; this is called energy transfer.</li> <li>Motion energy can be transferred between objects through pushes, pulls, hits, or collisions. Stronger interactions (e.g., bigger hits) transfer more motion energy.</li> <li>Energy changes take place in multiples; whenever there is a loss of energy somewhere, there must be a gain in energy somewhere else (and vice versa).</li> <li>A drawing or representation (such as energy bars) can show changes in the amount of energy an object has.</li> </ul>	Energy bars	
Quick Check			

## 3a. Can a paint paddle gain and lose energy?

Paint paddle pom-pom launcher	<ul style="list-style-type: none"> <li>An elastic object is any object that returns to its original shape after being deformed (bent, twisted, stretched, squeezed, etc.)</li> <li>Deformation of an elastic object is the indicator of the object's elastic energy. If an elastic object's deformation increases or decreases, its elastic energy has increased or decreased.</li> <li>When energy changes from one form to another, this is called energy transformation.</li> <li>Motion energy can be transformed into elastic energy (and vice versa).</li> </ul>	Energy bars	
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## 3b. What's the energy story of the paint paddle and pompom?

Paint paddle pom-pom launcher	<ul style="list-style-type: none"> <li>Energy cubes can be used to reason about energy flows and forms.</li> </ul>	Sketches, Energy cubes	
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## 4. What's the energy story of the propeller?

Rubber band and propeller	<ul style="list-style-type: none"> <li>The Energy Tracking Lens questions, "Where does the energy come from?" and, "Where does the energy go?" provide a useful way of thinking about energy flow in any scenario.</li> <li>Drawings and representations help reason about energy flow and transformation in a scenario.</li> </ul>	Student sketches, Energy cubes	
Wrap Up Probe			