

Physics: Rube Goldberg Project

Grade Level: 12

Overview	The students will explore various physics principles while designing and building their own Rube Goldberg machine. They will also incorporate the use of Jing to display the machine and its components to their classmates.
Objective	The students will be able to create a Rube Goldberg machine which turns on a light switch with 100% accuracy given any common building materials (approved by the teacher). They will be able to use the Jing application to correctly identify principles incorporated at each step and to explain how each step works given a video of the process. Finally, they will be able to show this video presentation to the class.
Standards	IN P.1.9 Use the conservation of energy and conservation of momentum laws to predict, both conceptually and quantitatively, the results of the interactions between objects.
Materials	<p>The materials needed for this lesson are:</p> <ul style="list-style-type: none">• Pre-approved building materials• A light switch with attached light bulb• Video camera• Computer with Jing application• Projector for classroom display
Procedure	<ol style="list-style-type: none">1. Assign each student to groups of 3 or 4.2. Explain what a Rube Goldberg machine is and how many steps will be expected to complete the project.3. The students will build the machine and video capture the process in action.4. They will then use Jing to explain the steps, how the steps relate to a physics principle, and how the steps work together.5. The students will then present their project to the class.
Evaluation	The students will be graded on their ability to complete the project within the restraints with 100% accuracy. They will also be graded on their group participation as indicated by group member survey. Finally, they will be graded on the quality of their presentation.

