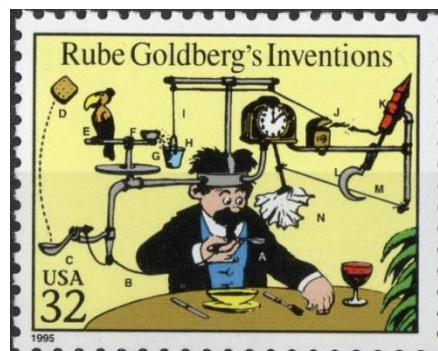


Anchoring phenomenon: Finding energy transformations in a Rube Goldberg machine



Phenomenon Video:

<https://www.youtube.com/watch?v=qybUFnY7Y8w>

POGIL[®] Activities that support the anchoring phenomenon:

PSActivity 10 – Energy of Movement: The Effect of Mass and Speed

Kinetic energy is the energy in moving objects and may change if an object's speed or mass changes.



PSActivity 11 – Potential Energy: Three Examples

Potential energy is explored using positional gravitational, magnetic and elastic examples



PSActivity 12 – When Potential Energy Is Transformed

The relationship between kinetic and potential energy is explored using marble collisions.

| POGIL® Activity | NGSS Performance Expectation | Learning Outcomes |
|----------------------------|--|--|
| PSActivity 10 | <p>MS-PS3-1 Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.</p> | <p>Energy of Motion: The Effect of Mass and Speed</p> <ol style="list-style-type: none"> 1. I can analyze and interpret data to determine how the amount of kinetic energy changes as the mass of an object increases, based on a data table or graph. 2. I can analyze and interpret data to determine how the amount of kinetic energy changes as the speed of an object increases, based on a data table or graph. |
| PSActivity 11 | <p>MS-PS3-2 Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.</p> | <p>Potential Energy: Three examples</p> <ol style="list-style-type: none"> 1. I can describe how three types of potential energy change in systems of objects. 2. I can create a model to illustrate how the potential energy of a system changes as the distances between interacting objects in the system change. |
| PSActivity 12 | <p>MS-PS3-5 Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.</p> | <p>When Potential Energy Is Transformed</p> <ol style="list-style-type: none"> 1. I can analyze a labeled energy diagram of a system and use the information to describe the changes in potential energy and kinetic energy for objects in the system. 2. I can construct a model that illustrates how the energy of objects in a system transforms between potential energy and kinetic energy. |