

# The Skate Park Performance Task

## *Three Dimensional Learning: NGSS Alignment*

**MS-PS3-3. Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.**

### Science & Engineering Practices

#### Developing and Using Models

- ◆ Develop a model to describe unobservable mechanisms. (MS-PS3-2)

#### Constructing Explanations and Designing Solutions

- ◆ Apply scientific ideas or principles to design, construct, and test a design of an object, tool, process or system. (MS-PS3-3)

### Disciplinary Core Ideas

#### PS3.A: Definitions of Energy

- ◆ A system of objects may also contain stored (potential) energy, depending on their relative positions. (MS-PS3-2)

#### PS3.B: Conservation of Energy and Energy Transfer

- ◆ When the motion energy of an object changes, there is inevitably some other change in energy at the same time. (MS-PS3-5)

### Cross-Cutting Principles

#### Systems and System Models

- ◆ Models can be used to represent systems and their interactions – such as inputs, processes, and outputs – and energy and matter flows within systems. (MS-PS3-2)

#### Energy and Matter

- ◆ Energy may take different forms (e.g. energy in fields, thermal energy, energy of motion). (MS-PS3- 5)
- ◆ The transfer of energy can be tracked as energy flows through a designed or natural system. (MS- PS3-3)