

## Words and Charts

**NOTE:** Each Difficulty Level of this Concept Builder consists of a Matching Pair activities. Students are presented with four motion descriptions and four energy bar charts. They must match the verbal description to the corresponding bar chart. The verbal description and the bar chart shows up on a 3x3 grid with one grid being reserved for instructions and feedback. If a student mis-matches a pair, then the student must start over. The grid is redrawn and the same four descriptions and bar charts re-appear in a different location on the grid.

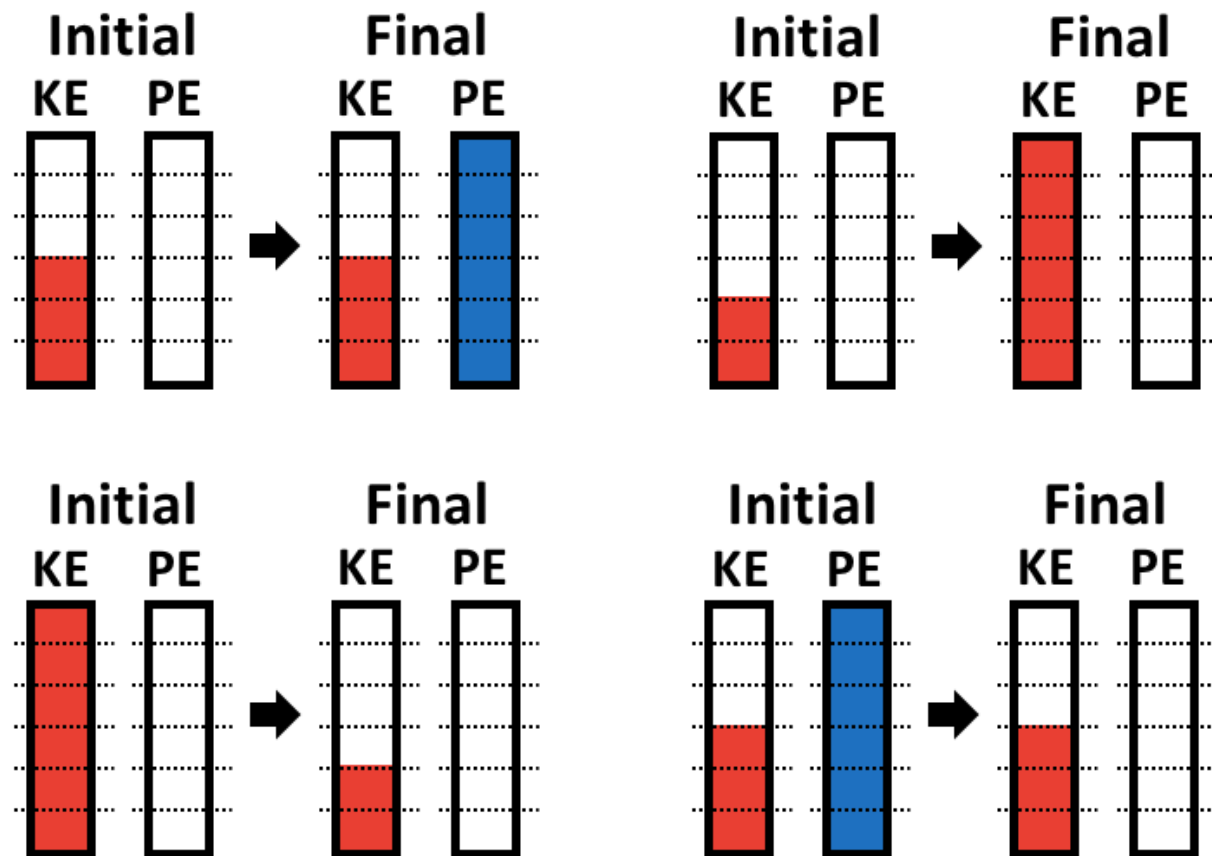
### Novice Difficulty Level

An object moves uphill at a constant speed.

An object moves downhill with a constant speed.

An object moves horizontally while speeding up.

An object moves horizontally while slowing down.



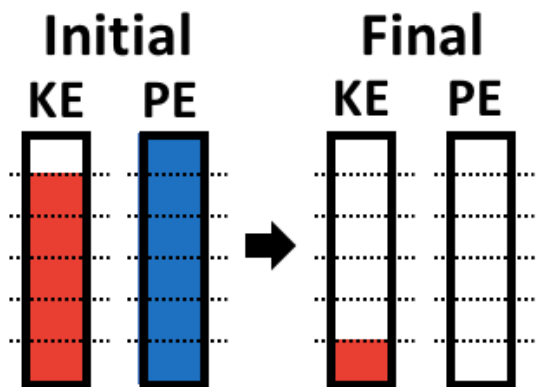
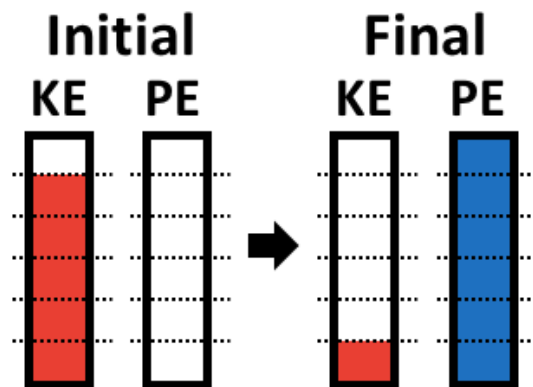
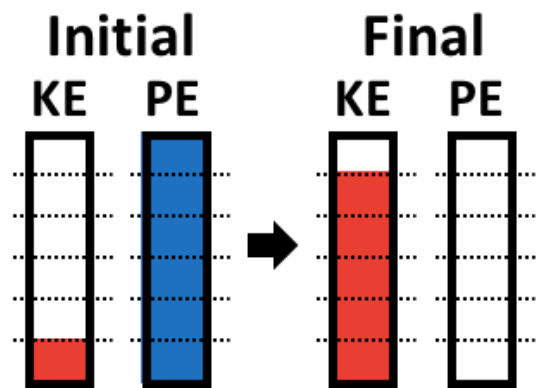
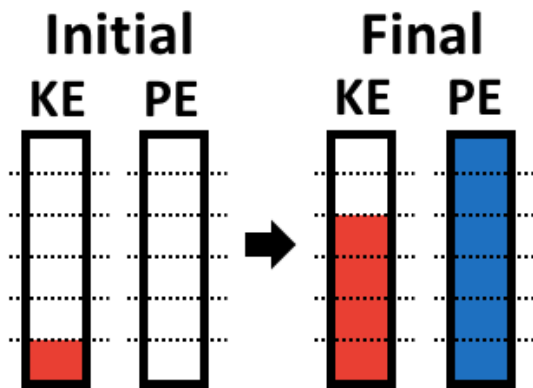
### Apprentice Difficulty Level

An object moves uphill and speeds up.

An object moves uphill and slows down.

An object moves downhill and slows down.

An object moves downhill and speeds up.



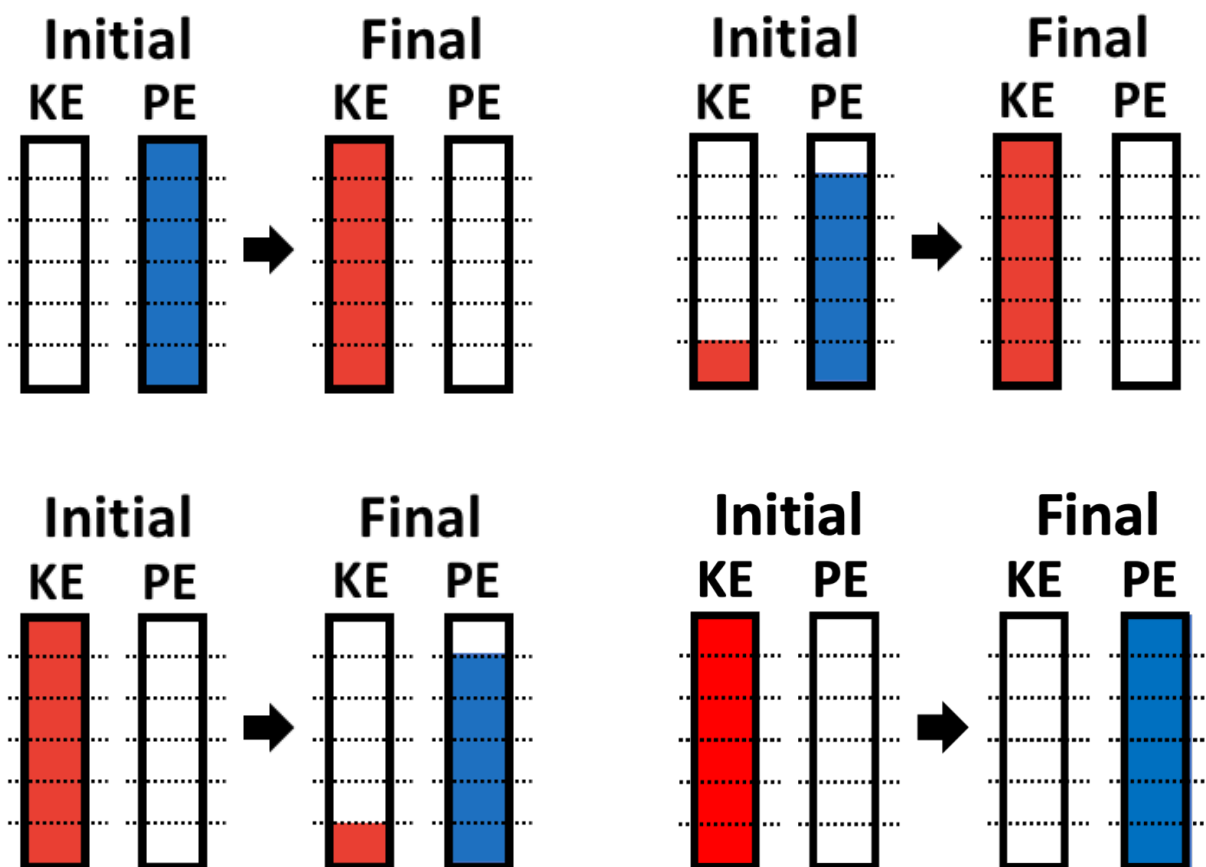
### Master Difficulty Level

An object is released from rest from a cliff and free falls to the ground.

A projectile is launched horizontally from a cliff and free falls to the ground.

A projectile is launched from the ground at an angle and travels to its peak.

A projectile is launched vertically from the ground and travels to its peak.



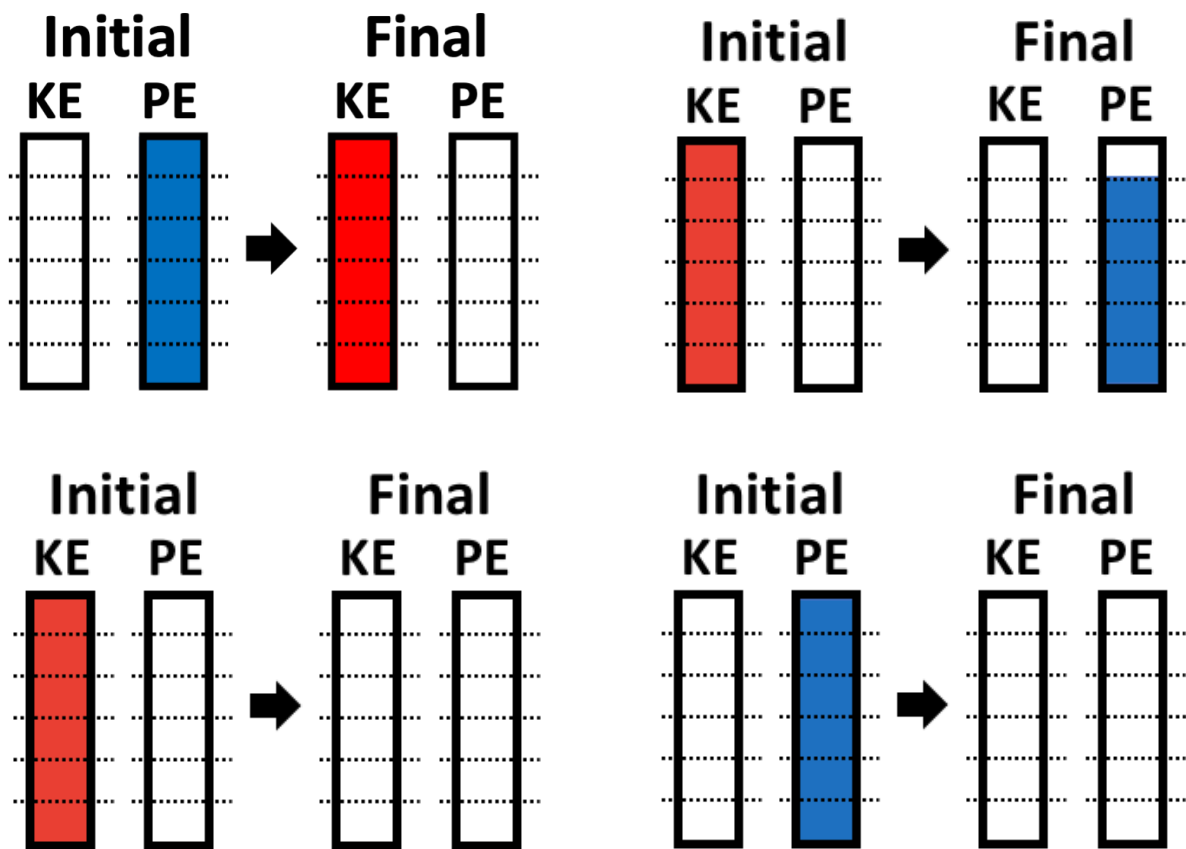
### Wizard Difficulty Level

A ball starts from rest and rolls down a hill to the bottom.

A ball rolls from the bottom of the hill to a stopping position near the top of the hill.

A ball rolls across level ground to a stop.

A ball starts from rest and rolls down a hill and eventually stops along the ground.



### Immortal Sage Difficulty Level

Skydiver falls at a constant speed.

A moving car accelerates across level ground.

Starting from rest, a car accelerates up a hill.

A hot air balloon rises upward at constant speed.

