

Name: _____

Spin-A-Ma-Jig (Teacher Version)

Precise Positions

Movement is simply the act of changing your position. Before we explore types of movement, let's practice some positioning skills!



Fill in the blank with appropriate words to describe the objects' positions!



The boat is going _____
the bridge.



The dog is in the _____
seat of the car.



The river is in _____
of the trees.



The sun is _____
the mountains.



The bird is on the _____
side of the nest.



The car is on the _____
side of the house.



The turtle is climbing _____
the log.



The city is _____
the plane.

Button Spinner

Materials:

- 1m piece of string
- Large button with two holes



Instructions:

1. Lace the string through both holes in the button by going in one hole and out the other.

2. Tie the ends of the string to make large loops, and move the button to the center of the string.

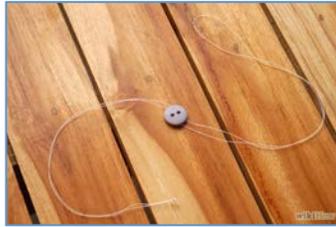
3. Hold one loop and twist the button until the string is twisted tight. Pull your hands apart and straighten the string.

4. Relax the string, and then continue to tighten and relax.

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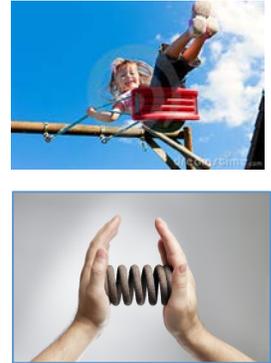
Talk About It!

1. Describe the motion of the button when you tighten the string. *The button winds up so that the string is quite tight.*
2. Describe the motion of the button when you relax the string. *The string unwinds, sending the button spinning as well until it coils back up in the opposite direction.*



Energy!

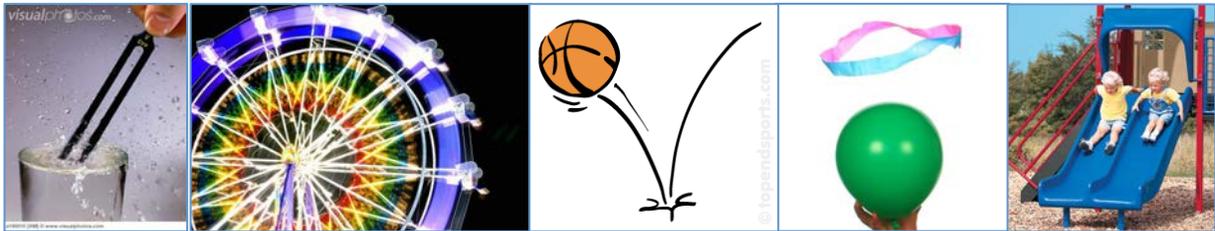
In this widget, we see two types of energy: **Potential Energy** (when the string is twisted and ready to spin) and **Kinetic Energy** (when the button is spinning around).



What types of energy do you think are shown above?

Many Movements!

Can you name the different types of movement being shown in these pictures?
Vibration, rotation, bouncing, levitating, sliding



Can you match these movements up with the forces that caused them?

Gravity pulling downward along a curve.

Children on Slide

Motor spinning to turn the wheel.

Ferris Wheel

Static Electricity levitating a light object.

Balloon & Bag

Gravity making an object bounce.

Basketball

Striking an object so it vibrates.

Tuning fork



Wind Up Clocks

Wind up clocks use kinetic and potential energy, very similar to our button! When you wind a clock, you store the energy. The clock then runs until all this energy is used up and has to be wound up again.

Name:

Image Sources:

Precise Positions:

1. Successful Workplace: <http://www.successfulworkplace.org/2014/01/05/big-data-marketing-uplift-modeling/>

Button Spinner:

1. Second Law Media: <http://www.secondlawmedia.com/how-much-time-does-it-take-to-manage-a-ppc-campaign/>
2. M & J Trimming: <http://www.mjtrim.com/pearlized-round-fashion-button-2-holes.html>
3. Sleeping Forest Studios: <http://sleepingforeststudios.com/portfolio/old-fashioned-button-spinner/>

Talk About It:

1. Wikihow: <http://www.wikihow.com/Make-a-Dancing-Button>

Energy!

1. Shutterstock: <http://www.shutterstock.com/s/playground/search.html>
2. Serif: <http://www.serif.com/blog/3-things-to-do-before-printing-your-photos-at-home/>

Many Movements:

1. Visual Photos: http://www.visualphotos.com/image/1x6037450/tuning_fork_vibrations_displacing_water
2. Inhabitat: <http://inhabitat.com/santa-monicas-ledsolar-powered-ferris-wheel/>
3. Chaaad: <http://chaaad.wordpress.com/2011/11/>
4. Steve Spangler Science: <http://www.stevespanglerscience.com/lab/experiments/static-flyer-flying-bag>
5. Landscape Structures: <http://www.playlsi.com/Explore-Products/Product-Lines/Outdoor-Playsystems/PlayShaper/PS-Playground-Slides/PS-Double-Poly-Playground-Slide/Pages/PS-Double-Poly-Playground-Slide.aspx>

Wind Up Clocks:

1. SideTrips: <http://bonkersycarax.blogspot.ca/2010/12/grandfathers-clock.html>