



**Who says all the fun has to happen at The Tech Interactive? This redesign of the classic “Red Light-Green Light” game is great for introducing or reinforcing energy concepts while getting your kids moving!**

## Introduction

This activity is a fun exploration of energy concepts for children 5 to 9, and can be used as their exercise/outside time for the day too!

## Location

“Energy field”: Any area large enough for a bit of movement (if you have a smaller space you can require smaller movements)

## Set up

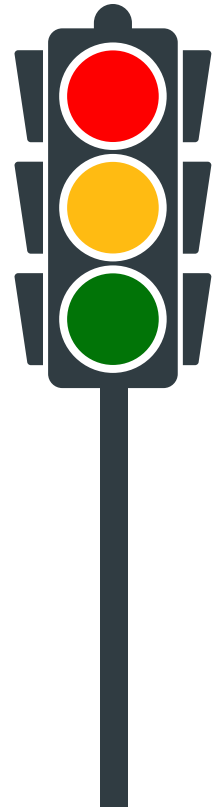
Designate one “energy keeper” and one or more participants (you can swap roles later).

In this game, kinetic energy is a “green light” and potential energy is a “red light.”

- **Kinetic energy** is motion energy. Think of some examples with your family, like a car moving down a ramp, a rubber band flying through the air, a falling object, or people running around.
- **Potential energy** is energy an object has even though it is not moving (it has the potential to do something). Think of some examples with your family, like a car at the top of a ramp, a stretched rubber band, an object held out in front of you, or your muscles at rest.
- **Note:** there are more kinds of potential energy — for instance, batteries have chemical potential energy that turns into flowing electrical energy when part of a circuit.

## Game instructions

1. Practice saying “kinetic energy” for moving, “potential energy” for stopping.
2. Line participants up on one side of the “energy field” facing the “Energy Keeper” on the opposite side (adult or another kid).
3. When the Energy Keeper yells “Kinetic Energy,” everyone else walks or runs as fast as they can towards them. Stored potential energy is being converted into moving kinetic energy.
4. When the Energy Keeper yells out “Potential Energy,” everyone must stop where they are and hold as still as possible. They are now storing potential energy.
5. The first scientist to reach the Energy Keeper gets to take over as Energy Keeper!



### Subject:

Physical Sciences

### Age:

5-9

### Time:

20 minutes

### Key concepts:

Energy: potential and kinetic



### Lab Connection:

[Physics of  
Roller Coasters](#)

## Get more energy!

Try this game with different movements. Combine them all into an obstacle course.



**Potential energy = plank position**



**Kinetic energy = do a push up**



**Potential energy = holding a ball  
(or ball on the ground)**



**Kinetic energy = throwing a ball  
(or kicking a ball)**



**Potential energy = crouching**



**Kinetic energy = jumping**



When you are stopped, (most) of your muscles are not contracting; instead, they are in a state where they have stored potential energy (from ATP — the fuel source for your cells). When you start moving, that potential energy is turned into kinetic energy by your muscles!



### Lab Connection

Visiting the Tech on a Field Trip? Sign up for one of our Science or Innovation Labs. This activity works well before or after our Physics of Roller Coasters Lab. Learn more at [thetech.org/sciencelabs](https://thetech.org/sciencelabs).

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