



# Energy in Motion

Energy helps us do things. It gives us light. It warms our bodies and homes. It bakes cakes and keeps milk cold. It runs our TVs and our cars. It makes us grow, move, and think.

Energy is the power to change things. It is the ability to do work.

All forms of energy fall under two categories—potential or kinetic energy.

## Potential Energy

It is stored energy or the energy of place or position.



Stored Mechanical



Nuclear



Chemical



Gravitational

## Kinetic Energy

It is the energy of motion. It is the motion of waves, electrons, atoms,



Motion



Heat (Thermal)



Sound



Light (Radiant)



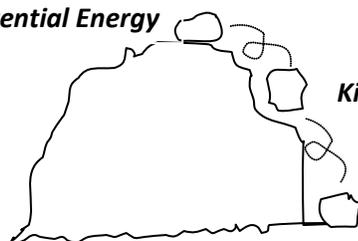
Electrical



## ENERGY CAN BE CHANGED FROM ONE FORM TO ANOTHER

When energy is used, it's changed from one form to another. Let's look at an example of how energy changes.

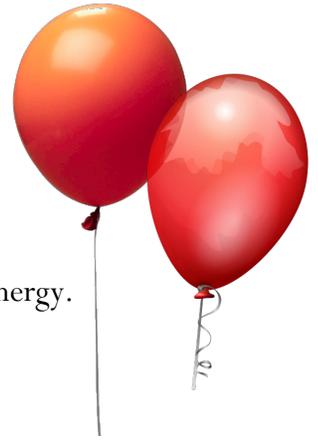
**Potential Energy**



**Kinetic Energy**

A rock on the top of a hill has energy. It is not moving—it has no kinetic energy. But it has energy because of its position on the hill. It has potential energy. If the rock begins to roll down the hill, its energy changes. The potential energy changes into kinetic energy as it rolls. When the rock stops

# Launch the Balloon



Purposes: To explore how potential energy is converted to kinetic energy.  
To explore how kinetic energy is converted into other forms of energy.

Procedure:

1. Blow up the balloon to a diameter of about 10 cm and hold the end closed with your fingers.
2. Hold the balloon away from your face and let go of the end. Observe what happens.
3. Blow up the balloon to a diameter of about 15 cm, let it go, and observe.
4. Blow up the balloon to a diameter of about 20 cm, let it go, and observe.



Diameter of Balloon	Observation
Balloon – 10 cm diameter	
Balloon – 15 cm diameter	
Balloon – 20 cm diameter	

1. What form of energy was in the blown up balloon?

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2. What happened to the air in the balloon when you let it go?

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3. What happened to the balloon when you let it go?

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4. How did the amount of air you put in the balloon affect its behavior when you let it go?

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5. Into what other forms of energy was the balloon's energy converted when you let it go?

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6. How could you use the energy in a balloon to do work?

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