

# **TYPES OF ENERGY**

**Mechanical,  
Electromagnetic,  
Electrical,  
Chemical and Thermal**



# What is Mechanical Energy?

**Energy due to a object's motion (kinetic) or position (potential).**

**The bowling ball has mechanical energy.**

**When the ball strikes the pins, mechanical energy is transferred to the pins!**



# Examples of Mechanical Energy



# **What is Electromagnetic or “Radiant” Energy?**



**Light energy**

**Includes energy from  
gamma rays, xrays,  
ultraviolet rays, visible  
light, infrared rays,  
microwave and radio  
bands**

# **What is Electrical Energy?**

**Energy caused by  
the movement of  
electrons**

**Easily transported  
through power lines  
and converted into  
other forms of energy**



# What is Chemical Energy?



**Energy that is available for release from chemical reactions.**

**The chemical bonds in a matchstick store energy that is transformed into thermal energy when the match is struck.**

# Examples of Chemical Energy



# What is Thermal Energy?



EXCITED  
"HOT"  
ATOM

## Heat energy

**The heat energy of an object determines how active its atoms are.**



LAID BACK  
"COOL"  
ATOM

**A hot object is one whose atoms and molecules are excited and show rapid movement.**

**A cooler object's molecules and atoms will show less movement.**



# QUIZ TIME!

**What type of energy  
cooks food in a  
microwave oven?**

**ELECTROMAGNETIC  
ENERGY**



**What type of energy is  
the spinning plate inside  
of a microwave oven?**

**MECHANICAL ENERGY**



# QUIZ TIME!

**Electrical energy is transported to your house through power lines.**

**When you plug an electric fan to a power outlet, electrical energy is transformed into what type of energy?**

**MECHANICAL ENERGY**



# QUIZ TIME!

**What energy transformation occurs when an electric lamp is turned on?**



**ELECTRICAL ENERGY**



**ELECTROMAGNETIC ENERGY**

**What types of energy are shown below?**



**Mechanical and Thermal Energy  
(Don't forget friction)**

**What type of energy is shown below?**



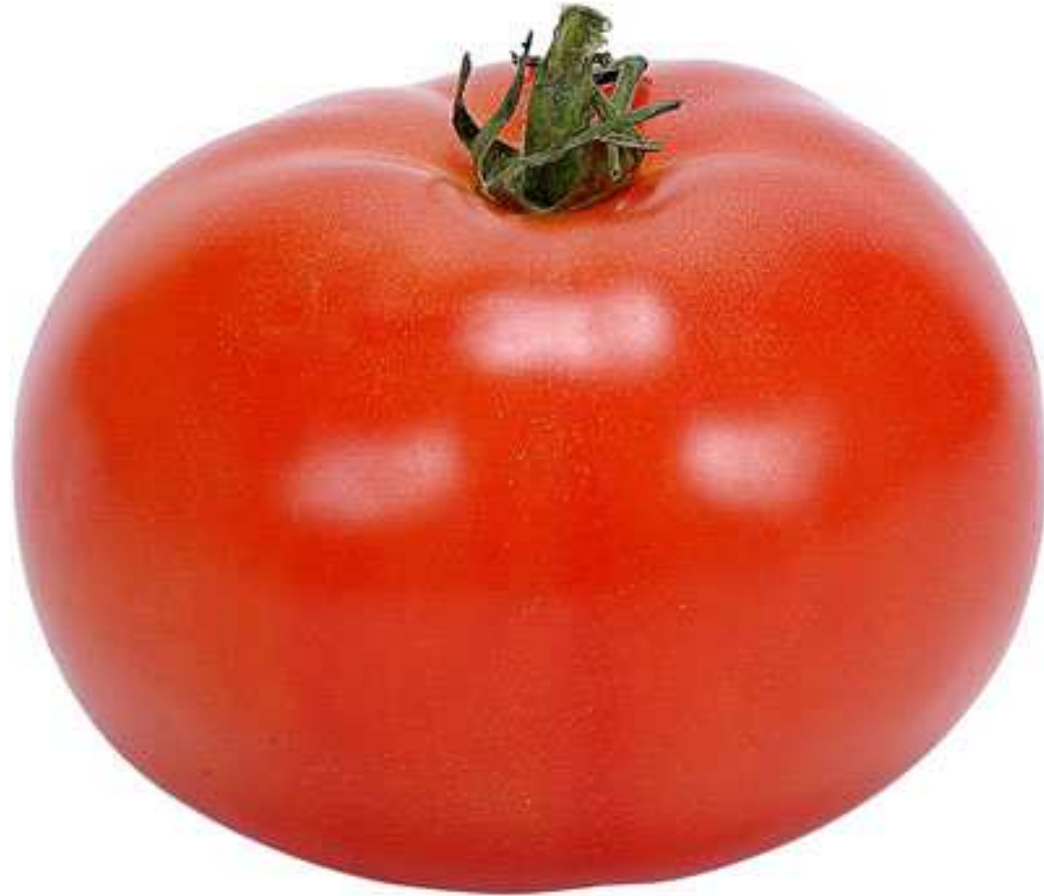
**Chemical Energy**

**What types of energy are shown below?**



**Electrical, Mechanical and  
Electromagnetic Energy**

**What type of energy is shown below?**



**Chemical Energy (yummy)**

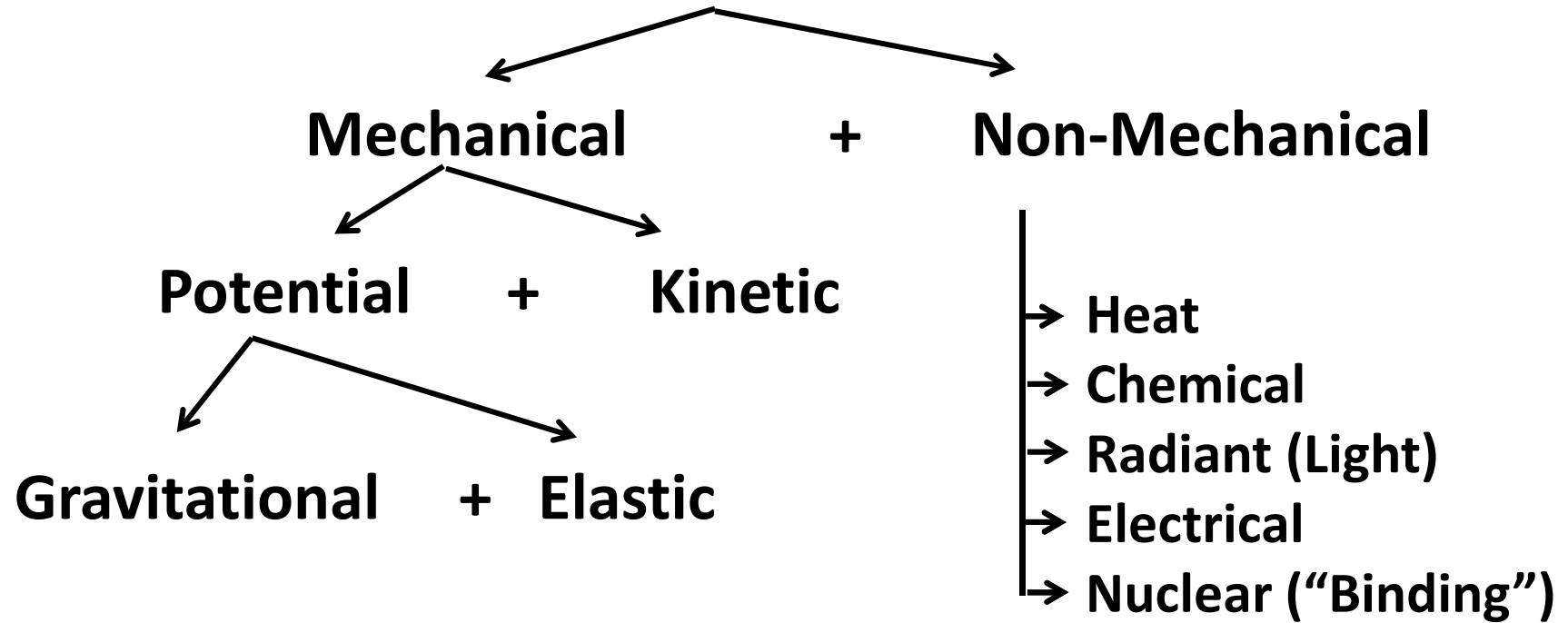
**What type of energy is shown below?**



**Thermal Energy**



# Energy



**ENERGY**

**is the ability to do**

**WORK**

# Conservation of ENERGY

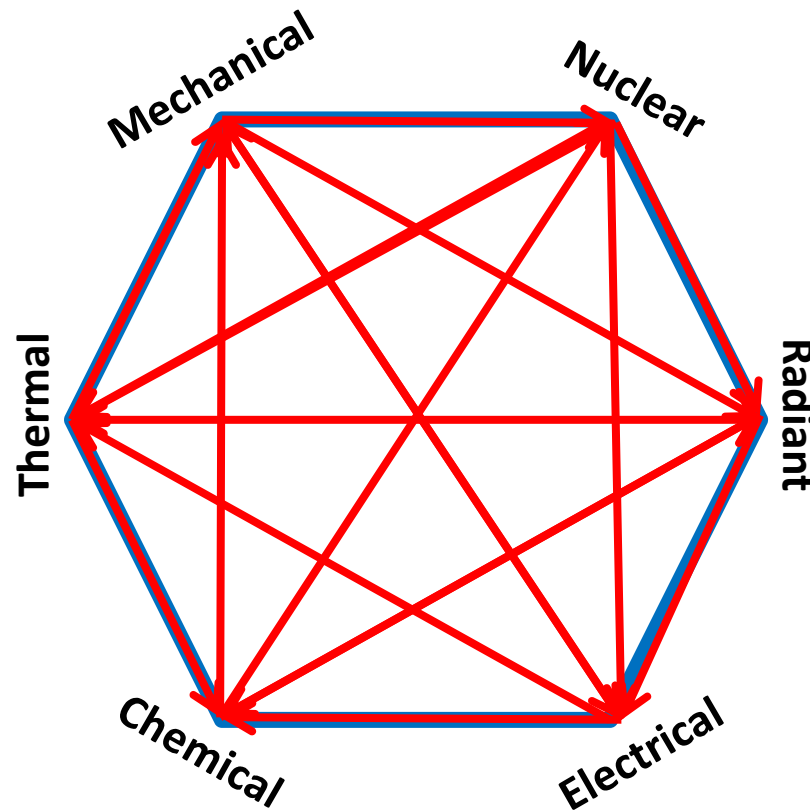
**ENERGY**

**cannot be**

**created or destroyed**

# ENERGY

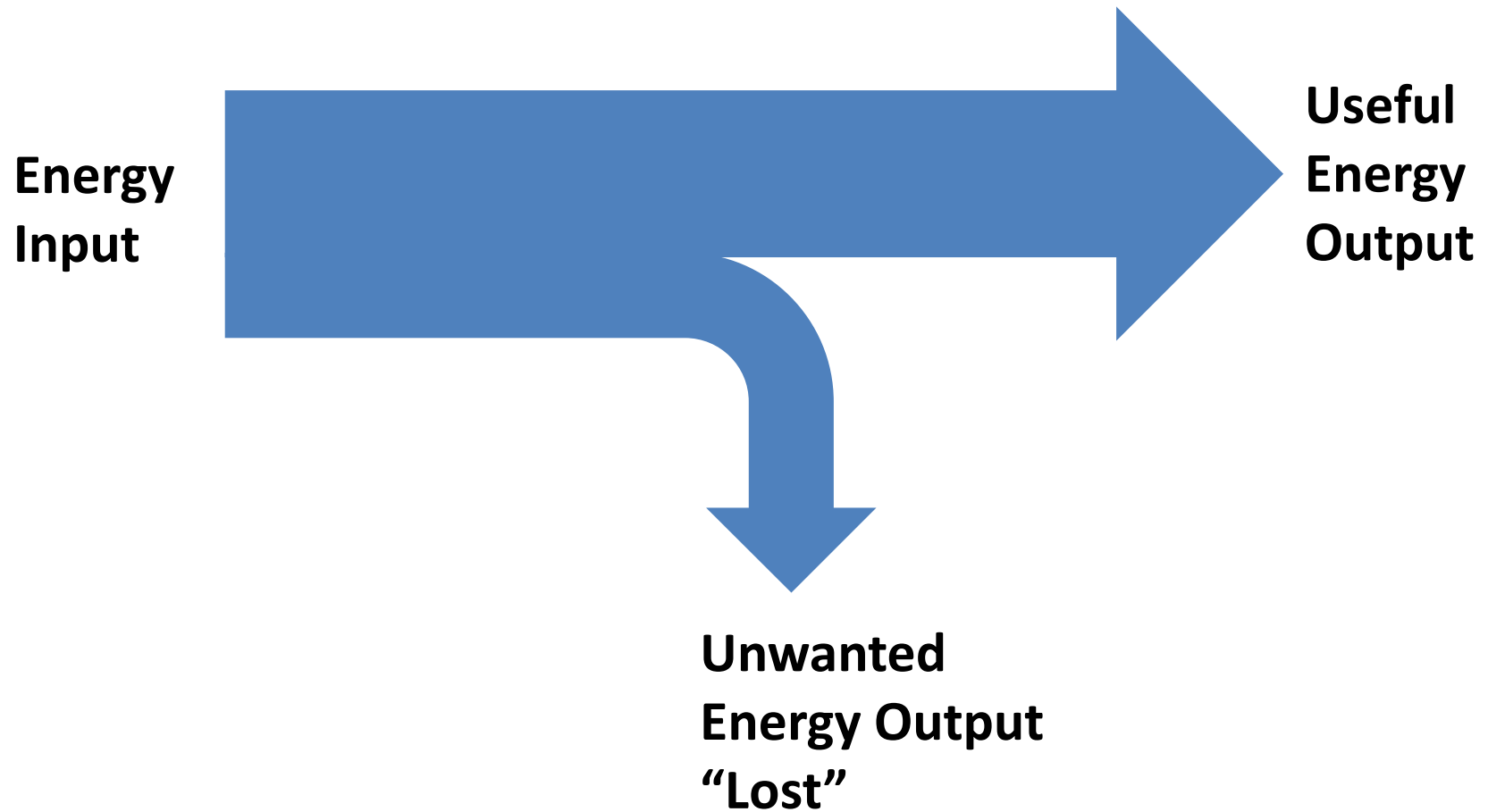
can be transformed



How many types of energy are involved to start the car and get it moving?



# Energy Transformations



# Energy Transformations

