Lesson 3 The Conservation of Energy

➢ **Look at the opposite picture , then put (√) or (X) :**

1. In the guitar , sound energy is converted into kinetic energy. (X)

2. The chemical energy stored in the body of the boy is a part of energy conversion when playing the guitar. (√)

➢ **Now** , lets study some examples of energy transformation :

Energy chain while riding a bike :

When you eat the chemical energy stored in the food provides your body with energy

⬇

When you ride your bike and push the pedals , this chemical energy is converted into kinetic energy (mechanical energy) , which causes the bike to move

⬇

Some of the kinetic energy , is converted into thermal energy due to the fire friction with the road

➢ **The following diagram shows the energy chain in the previous example :**

Chemical energy
In food

Converted into →

kinetic energy
In the bike

Converted into →

Thermal energy
Tire friction with road
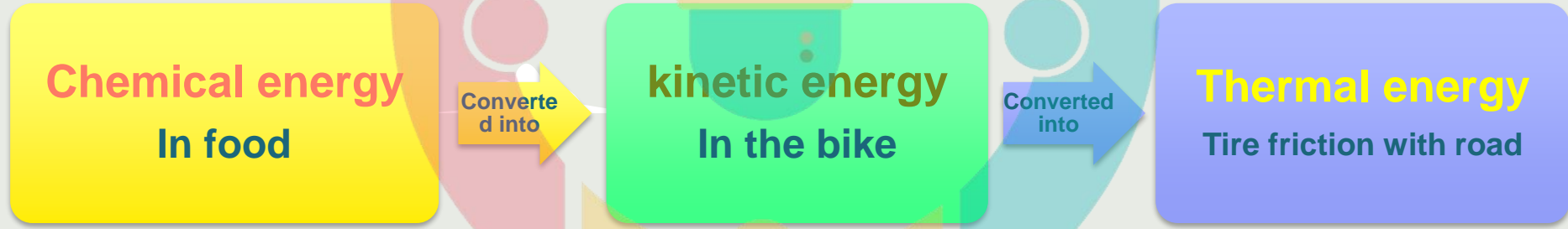
Energy chain when a light bulb is switched on :

When you turn on a light bulb , the electrical energy that goes through the electrical wires is converted into light energy when it reaches the bulb

If you put your hand near the light bulb , you can feel heat comes out of the bulb because some of the electrical energy is converted into thermal energy

➢ **The following diagram shows the energy chain in the previous example :**

Electrical energy
In electric wires

Converted into

Light energy and thermal energy
In the light bulb

➤ *From the previous example , we can conclude that :*

Energy can be changed from one form to another , where the new

energy cannot be created from nothing , and the old energy does not

disappear but it changes from one form into another , this is called

" the law of conservation of energy "

➤ **The law of conservation of energy :** energy can neither be created nor destroyed , but only converted from one form of energy into another.

➢ **put (√) or (X) :**

1. **When you ride your bike , some of the kinetic energy is converted into thermal energy due to the friction between tires and road.** (√)

2. **Electrical energy is converted into light energy and sound energy when a light bulb is switched on.** (X)