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| **YEAR 8** | **Forms of Energy** |

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| **Learning Intentions** | **Success Criteria** |
| Understand that energy appears in different forms. | * Recognising that kinetic energy is the energy possessed by moving bodies * Recognising that potential energy is stored energy, such as gravitational, chemical and elastic energy * Investigating different forms of energy in terms of the effects they cause, such as gravitational potential causing objects to fall and heat energy transferred between materials that have a different temperature |



**Image:** [**https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcT1s8C4VmWkFuzS-deLduRcIlOR4LryR11awjEOIeLFmuDbsZH9&usqp=CAU**](https://encrypted-tbn0.gstatic.com/images?q=tbn%3AANd9GcT1s8C4VmWkFuzS-deLduRcIlOR4LryR11awjEOIeLFmuDbsZH9&usqp=CAU)

**READ:** *What is Work?*

**Work** is the name given when energy is used. Whenever an object is shifted or forced to change shape, then work has been done.  
**READ:** *What is Energy?*

**Energy** is the ability to do work. It is needed to make a change happen. It cannot be seen but you can observe changes as a result of energy acting.Energy is needed to move or heat something, to make noise or to change an objects shape.

Most energy on the Earth originates from the **Sun**. The unit used to measure energy is the **joule (J). Energy can exist in many different forms.**

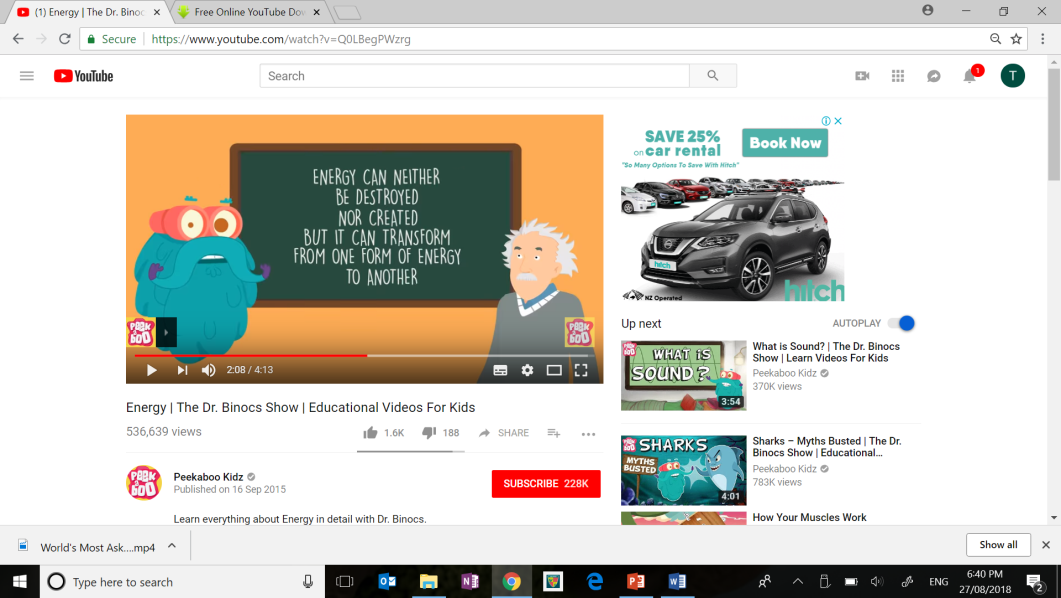
Some of the different **forms of energy** include:

* Heat energy
* Light energy
* Sound energy
* Chemical energy

**WATCH:** *What is Energy?*

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| File:Logo of YouTube (2015-2017).svg - Wikipedia | Watch this YouTube video:  <https://www.youtube.com/watch?v=CW0_S5YpYVo> |

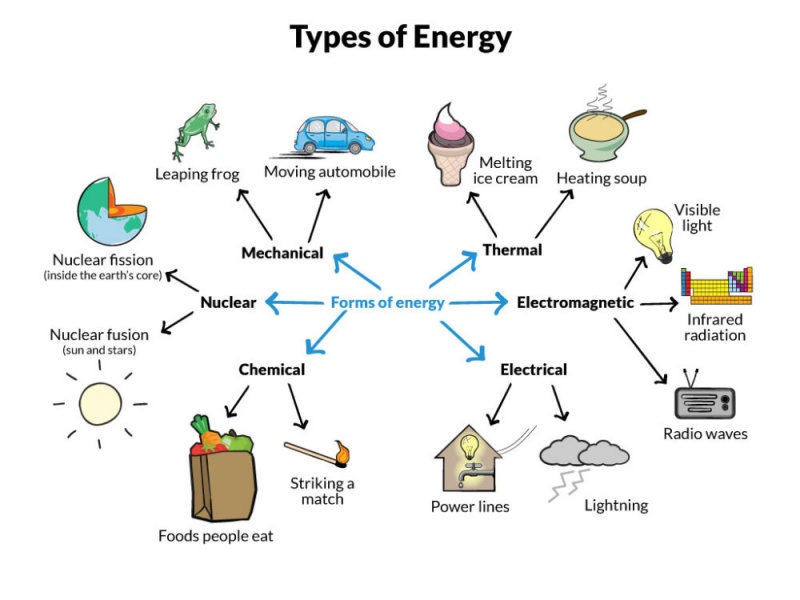
**ACTIVITY 1:** *Types of Energy*

**YOUR TASK:** Learn everything you need to know about energy in detail with Dr. Binocs. As you watch the video about energy, create a list of different types of energy. Once you have your list, draw pictures to help you remember the different forms of energy.

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| File:Logo of YouTube (2015-2017).svg - Wikipedia | Watch this YouTube video:  <https://www.youtube.com/watch?v=CW0_S5YpYVo> |

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| Types of Energy   * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | Pictures |

**READ:** *Types of Energy*

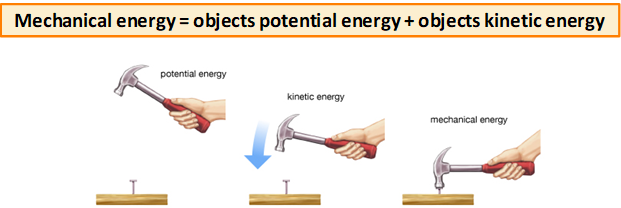
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**SOURCE:** <https://www.solarschools.net/knowledge-bank/energy/types>

All types of energy can be categorized into two groups: ***potential & kinetic.***

**Mechanical energy** is a mix of kinetic (energy in motion) and potential energy (energy that is stored).

The sum of an object’s kinetic and potential energy equals the object’s total mechanical energy.

 **SOURCE:** Encyclopedia Britannica

**ACTIVITY 2:** *Investigating Forms of Energy*

**PART 1:** Complete the research table about the different forms of energy.   
  
**PART 2:** Use your research to create an information document describing each form of energy.

Choose to create one of the following options:

* Poster (digital or paper) – *space provided in this workbook*
* Booklet
* PowerPoint
* Website

**PART 1: Research**

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| **Forms of energy** | **Definition** | **Is it stored energy?** (Potential Energy) | **Examples** |
| **Gravitational** |  |  |  |
| **Chemical** |  |  |  |
| **Elastic** |  |  |  |
| **Nuclear** |  |  |  |
| **Thermal** |  |  |  |
| **Light** |  |  |  |
| **Sound** |  |  |  |
| **Electrical** |  |  |  |

**PART 2: Presenting your research**

**YOU TASK:** Use the space below if you would like to present your research as a poster.

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| Forms of Energy |

**END OF WEEK TEST:** *Forms of Energy*  
 **Question 1**Compare the terms *energy* and *work*.

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| Energy is |
| Work is |

**Question 2**Match the energy type to its examples.

|  |  |  |
| --- | --- | --- |
| **Energy Type** |  | **Examples** |
| Nuclear |  | *Light bulb, fire, sun* |
| Electrical |  | *Anything that uses electricity* |
| Gravitational |  | *Bungee rope, sling shot, stretched rubber band* |
| Sound |  | *Hot water, radiator, stove* |
| Elastic |  | *Atomic/nuclear bombs, nuclear power stations,*  *the sun and stars* |
| Light |  | *Food, fuel, batteries, burning things* |
| Thermal (Heat) |  | *An object at height (i.e. a book on a bookshelf)* |
| Chemical |  | *Music, radio, TV, talking* |

**Question 3**

Identify the energy type(s) in each of the following…

***HINT:*** *There may be more than one.*

|  |  |  |
| --- | --- | --- |
| **(a)** | Food |  |
| **(b)** | Fire |  |
| **(c)** | TV |  |
| **(d)** | Sun |  |
| **(e)** | Car |  |
| **(f)** | Wind-up toy |  |

**Question 4**Draw a diagram that describe the relationship between potential, mechanical and kinetic energy. Include labels and descriptions with your diagram.

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Rate your understanding of forms of energy:  
 

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