***6.1-6.5 Review***

1. Fill out the following chart on the 5 main types of energy

|  |  |  |
| --- | --- | --- |
| **Form of Energy** | **What is it?** | **Examples** |
| Nuclear |  |  |
|  | The majority comes in the form of light and heat; created from fusion of hydrogen  |  |
|  |  | Baking a cake; powering cars |
|  | Sum of Kinetic + Potential Energy |  |
|  |  | Digesting food; photosynthesis |

1. Using the diagram below, state the different energy transformations that you think would occur:



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Write a sentence to summarize energy transformations using the following words: **Energy, change, created, destroyed**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Complete the following energy bar graphs for the skateboarder.



1. What energy transformations are taking place in the following scenarios?
	1. A rabbit eats some lettuce that is growing in the ground
	2. A battery operated flashlight gets turned on
	3. A student rides their bicycle along a flat path to school
	4. A soccer player kicks a soccer ball
2. Answer the following kinetic and potential energy questions. Be sure to include your formula and units in your final answer for full marks!
	1. The largest land predator is the male polar bear, which has a mass of around 500.00 kg. If the top speed of a male polar bear is 11.0 m/s, how much KE does it have?
	2. An object has a kinetic energy of 25 J and a mass of 34 kg, how fast is the object moving?
	3. What is the mass of a baseball that has a kinetic energy of 105 J and is traveling at 10 m/s?
	4. What is the velocity of a roller coaster if it has 1,200,000J of energy and a mass 1200kg?
	5. A 120kg bicycle is at the top of a 12m hill. What is the bicycle's potential energy?
	6. A box has a mass of 5.8kg. The box is lifted from the garage floor and placed on a shelf. If the box gains 145J of Potential Energy (Ep), how high is the shelf?
	7. A man climbs on to a wall that is 3.6m high and gains 2268J of potential energy. What is the mass of the man?
	8. A 800g ball is pulled up a slope as shown in the diagram. Calculate the potential energy it gains.



1. What happens to the particles of an object when it rubs against another surface?
2. The **faster/slower** something is moving, the **more/less** friction it creates.
3. When discussing friction, \_\_\_\_\_\_\_\_\_\_\_\_\_ energy gets transformed into \_\_\_\_\_\_\_\_\_\_\_\_\_ energy.
4. When would you want a high coefficient of friction?
5. When would you want a low coefficient of friction?
6. Define “total energy” of a system.
7. Use the following picture to answer the questions



**D**

**C**

**A**

**B**

* 1. At which point is PE the highest? Explain why.
	2. At which point has the most energy been converted to thermal? Explain.
	3. Describe which types of energy are present at point B.
	4. Discuss the total energy between points A and C. Explain what types are present at each.