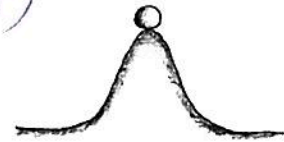


Name: \_\_\_\_\_

Science 7

Date: 1-11-19

Energy (NOTES)



I can calculate an objects mechanical energy.

**Do Now:** Calculate the potential energy of a rock with a mass of 55 kg while sitting on a cliff that is 27 m high while m high.

Formula:

$$PE = m \cdot g \cdot h$$

Substitution:

$$PE = 55 \text{ Kg} \cdot 9.8 \text{ m/s}^2 \cdot 27 \text{ m}$$

Final Answer with Units:

$$PE = 14,553.0 \text{ J}$$

Notes:

### Calculating Mechanical Energy

- You can find an objects mechanical energy by adding together the objects Kinetic and potential energy.
- Mechanical Energy = Potential Energy + Kinetic Energy

The diagram shows a ball's trajectory from a person's hands at point A to a basket at point B. The ball's energy values at each point are:

Point	PE (J)	KE (J)	ME (J)
A	12	10	22.0
B	20	2	22.0

**Calculate the Mechanical Energy**

Potential Energy Worksheet

1. Potential energy is defined as

The energy an object has because of its position. It's also internal stored energy due to chemical bonds.

2. The formula for potential energy is:

**Potential Energy (J) = Mass (kg) x Gravity (9.8 m/s<sup>2</sup>) x Height (m)**  
**PE = mgh**

3. The unit of measurement for potential energy is Joules.

Directions: Show all work

4. John has an object suspended in the air. It has a mass of 50 kilograms and is 50 meters above the ground. Calculate the objects potential energy.

PE = m · G · H  
PE 50 kg · 9.8 m/s<sup>2</sup> · 50 m  
PE 24,500.0 J PE = 24,500.0 J

5. Brian has an object suspended in the air. It has a mass of 100 kg and is 25 meters above the ground. What is the object's potential energy?

PE = m · G · H  
PE = 100 kg · 9.8 m/s<sup>2</sup> · 25 m  
PE = 24,500.0 J PE = 24,500.0