

Year 10 - Science

**HOMEWORK**

**BOOK**

Your Name:

**Worksheet 1: *Motion Word Search***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| F | I | Y | X | G | M | O | P | P | O | S | I | T | E | Q | K | U | Z | Y | N |
| K | T | T | F | Z | X | N | F | R | E | K | L | V | Z | X | P | V | N | M | N |
| F | P | I | K | T | G | G | R | V | W | A | O | F | Q | T | Z | V | M | T | Q |
| S | F | C | X | O | E | S | C | R | H | Z | P | N | N | C | O | J | N | C | N |
| I | R | O | Z | S | S | R | Q | Q | X | S | A | A | O | R | B | E | H | I | Z |
| W | E | L | S | M | H | U | M | R | B | C | T | J | F | T | M | G | F | N | Y |
| G | E | E | J | Q | F | A | O | I | C | S | M | D | Y | E | W | W | R | E | N |
| M | F | V | Y | C | Z | F | H | E | N | K | Z | D | C | T | Y | E | G | R | L |
| J | A | G | Q | V | O | M | L | O | N | A | H | A | F | U | I | W | N | T | H |
| E | L | J | W | R | O | E | C | S | A | A | L | U | T | I | V | V | R | I | J |
| V | L | G | C | S | R | Z | C | C | L | P | T | V | O | F | A | P | A | A | R |
| N | M | E | J | A | S | T | M | N | S | U | Y | N | E | J | R | M | C | R | I |
| R | O | U | T | M | J | N | V | I | A | M | U | D | A | L | A | J | U | P | G |
| O | W | I | Z | S | Q | A | D | G | W | T | U | T | A | T | O | S | Y | R | Q |
| Y | O | A | M | P | A | I | R | S | E | X | S | T | Q | Y | S | C | S | R | V |
| N | P | R | C | Y | A | Z | K | F | M | D | M | I | N | N | H | N | I | A | U |
| P | B | U | N | B | A | L | A | N | C | E | D | X | D | E | Q | S | I | T | M |
| K | Q | R | E | B | Y | T | I | M | E | E | G | Q | D | J | M | X | P | X | Y |
| V | A | T | H | G | I | E | W | Q | B | P | V | N | F | C | M | O | W | Q | H |
| O | K | N | B | C | T | S | S | J | Q | S | F | S | D | B | E | G | M | D | C |
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| --- | --- | --- |
| ACCELERATION | INERTIA | SPEED |
| CONSTANT | INSTANTANEOUS | TERMINAL VELOCITY |
| DISPLACEMENT | MASS | TIME |
| DISTANCE | MOMENTUM | UNBALANCED |
| FORCE | NEWTON | VELOCITY |
| FREE FALL | OPPOSITE | WEIGHT |
| GRAVITY | PAIRS |  |

**Worksheet 2: *Distance-time graphs***

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**Worksheet 3: *The history of forces***

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**Worksheet 4: *Energy***

**Part 1. The two basic types of energy**

Directions: Determine the best match between basic types of energy and the description provided. Put the correct letter in the blank.

\_\_\_\_\_\_1. A skier at the top of the mountain (a) Kinetic Energy

\_\_\_\_\_\_2. Gasoline in a storage tank (b) Potential Energy

\_\_\_\_\_\_3. A race-care traveling at its maximum speed (c) Both forms of Energy

\_\_\_\_\_\_4. Water flowing from a waterfall before it hits the pond below

\_\_\_\_\_\_5. A spring in a pinball machine before it is released

\_\_\_\_\_\_6. Burning a match

\_\_\_\_\_\_7. A running refrigerator motor

**Part 2. Definitions of Energy.**

Directions: Write down the definition for each of the following terms after reading the article.

ENERGY:

KINETIC ENERGY:

POTENTIAL ENERGY:

**Part 3. Forms of Energy.**

Directions: Determine the type of energy for each form (Kinetic, Potential, or Both) and give an example.

|  |  |  |  |
| --- | --- | --- | --- |
| **Form** | **Definition** | **Type (KE, PE, or Both)** | **Example (for each type if both)** |
| Mechanical (motion) energy | An object’s movement creates energy |  |  |
| Thermal (heat) energy | The vibration and movement of molecules |  |  |
| Radiant energy | Electromagnetic waves |  |  |
| Electrical energy | Movement of electrons  |  |  |
| Chemical energy |  Stored in bonds of atoms and molecules |  |  |
| Nuclear energy | Stored in the nucleus of an atom; released when nucleus splits or combines |  |  |
| Sound energy | Vibration of waves through material |  |  |
| Gravitational energy | Energy of position or height |  |  |

**Part 4. Forms of Energy Continued**

Directions: Match the energy form(s) to the description provided. A few questions may have more than one answer.

\_\_\_\_\_\_\_\_\_\_\_\_\_1. Falling rocks from the top of a mountain (a) Mechanical

\_\_\_\_\_\_\_\_\_\_\_\_\_2. Release of energy from the Sun (b) Electrical

\_\_\_\_\_\_\_\_\_\_\_\_\_3. Energy released from food after it is eaten (c) Heat

\_\_\_\_\_\_\_\_\_\_\_\_\_4. Batteries (d) Radiant

\_\_\_\_\_\_\_\_\_\_\_\_\_5. The energy that runs a refrigerator (e) Chemical

\_\_\_\_\_\_\_\_\_\_\_\_\_6. Nuclear fission reactors (f) Nuclear

\_\_\_\_\_\_\_\_\_\_\_\_\_7. The rumble of thunder from a storm (g) Sound

\_\_\_\_\_\_\_\_\_\_\_\_\_8. Rubbing your hands together

­\_\_\_\_\_\_\_\_\_\_\_\_\_9. Gasoline

\_\_\_\_\_\_\_\_\_\_\_\_\_10. Food before it is eaten

\_\_\_\_\_\_\_\_\_\_\_\_\_11. Lightening

**Part 5. Transformation of Energy**

Directions: Use the following forms of energy to fill in the table below: **mechanical, electrical, heat, radiant, chemical, nuclear, and sound**. The first one has been done for you.

|  |  |  |
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|  | **ORIGINAL ENERGY FORM** | **FINAL ENERGY FORM** |
| 1. Electric motor | electrical | mechanical |
| 2. A battery that runs a moving toy |  |  |
| 3. A solar panel on the roof of a house |  |  |
| 4. A person lifting a chair |  |  |
| 5. A nuclear power plant |  |  |
| 6. A toaster |  |  |
| 7. A church bell |  |  |
| 8. Gasoline powering a car |  |  |
| 9. A light bulb |  |  |
| 10. Photosynthesis  |  |  |