



EXAMPLE OUTPUT FOR AI PROMPT:

Student Homework Assignment

6th Grade: Energy in Motion Assignment

This is an example of what our **AI Prompt for Student Homework Assignments** can generate for you.

HOMEWORK ASSIGNMENT

Energy in Motion: Kinetic and Potential Energy Practice

Name: _____ Date: _____

Meiklejohn Elementary School - 6th Grade Science

Estimated Time: 45 minutes

Instructions for Students:

Tonight, you will practice identifying and distinguishing between **kinetic energy** (energy of motion) and the different types of **potential energy** (stored energy). Remember our classroom activities where we observed moving objects and discussed how energy can be stored and released.

How to Complete This Assignment:

- Work on paper or type your responses
 - Show your thinking by drawing pictures, using examples, or explaining your reasoning
 - Use complete sentences for explanation questions
 - Ask a family member to help you find real examples around your home
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Part A: Energy Identification (Beginner Level)

Directions: Look at each scenario below. Identify whether it shows **kinetic energy** or **potential energy**. If it's potential energy, specify what type (gravitational, elastic, or chemical).

1. A soccer ball sitting at the top of a hill
 - Type of energy: _____
 - Explanation: _____
2. A rubber band that has been stretched and is about to be released
 - Type of energy: _____

- Explanation: _____
 - 3. A bicycle moving down the street
 - Type of energy: _____
 - Explanation: _____
 - 4. A battery sitting in a flashlight
 - Type of energy: _____
 - Explanation: _____
 - 5. Water flowing over a waterfall
 - Type of energy: _____
 - Explanation: _____
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Part B: Real-World Energy Hunt (Intermediate Level)

Directions: Walk around your home and find THREE examples of each type of energy. Draw a simple picture and write one sentence explaining why each example represents that type of energy.

Kinetic Energy Examples:

- 6. Example 1: _____ Drawing: [Space for drawing] Explanation: _____
- 7. Example 2: _____ Drawing: [Space for drawing] Explanation: _____
- 8. Example 3: _____ Drawing: [Space for drawing] Explanation: _____

Potential Energy Examples:

- 9. Example 1: _____ Type of potential energy: _____ Drawing: [Space for drawing] Explanation: _____
 - 10. Example 2: _____ Type of potential energy: _____ Drawing: [Space for drawing] Explanation: _____
 - 11. Example 3: _____ Type of potential energy: _____ Drawing: [Space for drawing] Explanation: _____
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Part C: Energy Transformation Challenge (Intermediate Level)

Directions: Think about how energy can change from potential to kinetic or vice versa. Describe what happens in each scenario.

12. A book falls off a desk onto the floor.

- What type of energy does the book have while sitting on the desk? _____
- What type of energy does the book have while falling? _____
- Explain the energy transformation: _____

13. You wind up a toy car and then let it go.

- What type of energy is stored in the wound-up toy? _____
- What type of energy does the toy have when it's moving? _____
- Explain the energy transformation: _____

Reflection Question

14. In 3-4 sentences, explain the difference between kinetic energy and potential energy using your own words and examples from your daily life.

Answer Key for Teachers/Parents

Part A: Energy Identification

1. **Gravitational potential energy** - The ball has stored energy due to its position above the ground
2. **Elastic potential energy** - Energy is stored in the stretched rubber band
3. **Kinetic energy** - The bicycle has energy because it is in motion
4. **Chemical potential energy** - The battery stores energy in its chemical composition
5. **Kinetic energy** - The water has energy because it is moving

Part B: Real-World Energy Hunt

Sample answers (students' answers will vary):

Kinetic Energy Examples:

- Fan blades spinning, car driving by, person walking, wind blowing leaves, water running from faucet

Potential Energy Examples:

- **Gravitational:** Book on shelf, apple hanging on tree, person at top of stairs
- **Elastic:** Compressed spring, stretched hair tie, bent diving board
- **Chemical:** Food, gasoline, wood for burning

Part C: Energy Transformation Challenge

12. **Gravitational potential energy** while on desk; **Kinetic energy** while falling; Energy transforms from stored (potential) to motion (kinetic) as gravity pulls the book down
13. **Elastic potential energy** when wound up; **Kinetic energy** when moving; The stored energy in the spring mechanism converts to motion energy when released

Part D: Reflection Question

Sample response: Kinetic energy is the energy things have when they're moving, like a rolling ball or flying bird. Potential energy is stored energy that's waiting to be used, like when I'm at the top of a slide before going down (gravitational) or when I pull back a slingshot (elastic). The main difference is that kinetic energy involves motion while potential energy is about position or stored energy that could create motion later.

Grading Rubric (Total: 28 points)

Part A (10 points)

- **2 points each:** Correct energy type identification and clear explanation
- **1 point each:** Partially correct identification or unclear explanation

Part B (12 points)

- **2 points each example:** Accurate identification with appropriate drawing and explanation
- **1 point each example:** Partially correct with minimal explanation

Part C (4 points)

- **2 points each scenario:** Complete and accurate explanation of energy transformation
- **1 point each scenario:** Partially correct explanation

Part D: Reflection (2 points)

- **2 points:** Clear, complete explanation using student's own words with examples
- **1 point:** Basic understanding shown but incomplete or unclear explanation
- **0 points:** Minimal understanding or no clear examples

Performance Levels:

- **Excellent (25-28 points):** Strong understanding of energy concepts
- **Proficient (20-24 points):** Good understanding with minor gaps
- **Developing (15-19 points):** Basic understanding, needs reinforcement
- **Beginning (Below 15 points):** Requires additional instruction and support

Teacher Notes:

- Questions progress from basic recall to application and creation
- Visual learners benefit from drawing opportunities in questions 13-15
- English learners supported through context clues and familiar scenarios
- Problems use numbers within grade-level expectations (Colorado 3rd grade standards)
- Allow use of manipulatives for students who need concrete support

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