

**➤ Main Ideas, Key Points, Questions:**

*After watching the video segment, write down key points, main ideas, and big questions.*

**➤ Objective(s):**

- *Understand how conservation of energy is applied to physical situations, both qualitatively and quantitatively.*
- *Recognize situations in which energy is either conserved or not conserved.*

**➤ Notes:**

*During the video segment, use words, phrases, or drawings to take notes.*

**➤ Summary:**

*After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"*

**Answer the following.**

1. Define the law of conservation of energy in your own words.

*The law of conservation of energy states that energy can neither be created nor destroyed but can be converted from one form to another.*

2. What form of energy does an object possess based on its height relative to a reference point?

*When an object has height relative to a reference point, it possesses gravitational potential energy.*

3. What form of energy does an object possess due to its movement?

*An object in motion possesses kinetic energy.*

4. Provide examples of non-conservative forces.

*Friction and air resistance are non-conservative forces.*

5. When non-conservative forces are present, does all of the energy in a system remain in a usable form? Explain.

*Non-conservative forces such as friction cause energy to be converted to non-usable forms that cannot be regained or reused.*

6. What type of force are the force of gravity and the force exerted by a spring? How does this type of force influence the energy in a system?

*The force of gravity and the spring force are both conservative forces, which allow the energy in a system to remain in a usable form.*

7. As an object falls to the ground, what happens to its energy? Ignore air resistance in this scenario.

*As an object falls to the ground, its energy is converted from gravitational potential energy to kinetic energy.*

8. If air resistance acts on a falling object, will all of its potential energy be converted into kinetic energy?

*No. If air resistance acts on a falling object, some of its energy will be transformed into unusable energy such as heat.*