

# CHAPTER 2: SCIENCE, MATTER, ENERGY, AND SYSTEMS

## 2-1 What Do Scientists Do?

- Science Is a Search for Order in Nature

- Scientists Use Observations, Experiments, and Models to...

- Scientists Are Curious and Skeptical, and Demand Lots of Evidence

- Critical Thinking and Creativity Are Important in Science

- Scientific Theories and Laws Are the Most Important and...

- Results of Science Can Be Tentative, Reliable, or Unreliable

- Science Has Some Limitations

## 2-2 What is Matter?

- Matter Consists of Elements and Compounds

- Atoms, Molecules, and Ions Are the Building Blocks of Matter


- Organic Compounds Are the Chemicals of Life

- Matter Comes to Life Through Genes, Chromosomes, and Cells

- Some Forms of Matter Are More Useful Than Others

## 2-3 What Happens When Matter Undergoes Change?

- Matter Undergoes Physical, Chemical, and Nuclear Changes

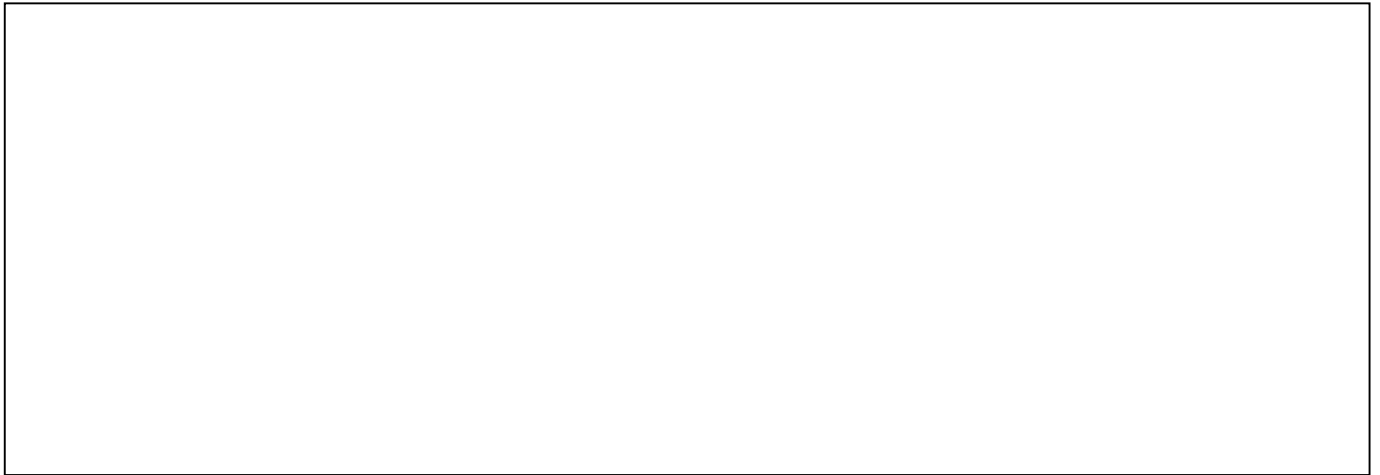


- We Cannot Create or Destroy Atoms: The Law of Conservation...



## 2-4 What Is Energy and What Happens When It Undergoes Change?

- Energy Comes in Many Forms



- Some Types of Energy Are More Useful Than Others



- Energy Changes Are Governed by Two Scientific Laws



## 2-5 What Are Systems and How Do They Respond to Change?

- Systems Have Inputs, Flows, and Outputs

- Systems Respond to Change Through Feedback Loops

- It Can Take a Long Time for a System to Respond to Feedback

- System Effects Can Be Amplified Through Synergy