# Worksheet For Characteristics Of Living Things Questions and Answers PDF

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## Part 1: Building a Foundation

**Which of the following is considered the basic unit of life?**

*Hint: Think about the smallest living structure.*

- ◯ A) Atom
- ◯ B) Molecule
- ◯ **C) Cell ✓**
- ◯ D) Tissue

> The basic unit of life is the cell.

**Which of the following are characteristics of living things? (Select all that apply)**

*Hint: Consider the traits that define life.*

- ☐ **A) Metabolism ✓**
- ☐ B) Inability to adapt
- ☐ **C) Reproduction ✓**
- ☐ **D) Cellular organization ✓**

> Characteristics of living things include metabolism, reproduction, and cellular organization.

**Define homeostasis and provide an example of how it is maintained in the human body.**

*Hint: Think about balance in the body.*

**Homeostasis is the maintenance of a stable internal environment; an example is temperature regulation.**

**List the two main types of reproduction and provide a brief description of each.**

*Hint: Consider how organisms pass on their genes.*

1. What is sexual reproduction?

Involves two parents combining genetic material.

2. What is asexual reproduction?

Involves one parent producing identical offspring.

The two main types of reproduction are sexual and asexual; sexual involves two parents and genetic variation, while asexual involves one parent and identical offspring.

**Which process involves the conversion of energy from the environment into forms usable by an organism?**

*Hint: Think about how plants and animals obtain energy.*

- ◯ **A) Photosynthesis ✓**
- ◯ B) Respiration
- ◯ C) Metabolism
- ◯ D) Evolution

Photosynthesis is the process that converts energy from sunlight into chemical energy.

## Part 2: comprehension and Application

**How do living organisms respond to stimuli? (Select all that apply)**

*Hint: Consider the ways organisms react to their environment.*

- [ ] A) By ignoring the changes
- [ ] **B) Through reflex actions ✓**
- [ ] **C) By adjusting internal processes ✓**
- [ ] D) By evolving instantly

> Living organisms respond to stimuli through reflex actions and by adjusting internal processes.

**Explain the role of enzymes in metabolic processes and why they are crucial for life.**

*Hint: Think about how reactions are facilitated in the body.*

> **Enzymes speed up metabolic reactions and are crucial for sustaining life by facilitating necessary biochemical processes.**

**Which of the following best describes the concept of adaptation?**

*Hint: Consider how species change over time.*

- ◯ A) Immediate change in an organism's structure
- ◯ **B) Gradual genetic changes in a population over time ✓**
- ◯ C) Sudden mutation in an individual
- ◯ D) Reproduction of identical offspring

> Adaptation is best described as gradual genetic changes in a population over time.

**Which scenarios demonstrate homeostasis in action? (Select all that apply)**

*Hint: Think about how organisms maintain balance.*

- [x] **A) Sweating to cool down the body ✓**
- [x] **B) Shivering to generate heat ✓**
- [ ] C) Growing taller over time
- [x] **D) Developing a fever to fight infection ✓**

> Scenarios that demonstrate homeostasis include sweating to cool down and shivering to generate heat.

**Describe a real-world example of an organism adapting to its environment and explain the evolutionary significance.**

*Hint: Think about how species change over generations.*

> **An example is the pepper moth, which adapted to its environment during the Industrial Revolution; this illustrates natural selection.**

**If a plant bends towards a light source, which characteristic of living things is it demonstrating?**

*Hint: Consider how plants interact with their environment.*

- ○ A) Growth
- ○ **B) Response to stimuli ✓**
- ○ C) Reproduction
- ○ D) Metabolism

> The plant is demonstrating response to stimuli.

## Part 3: Analysis, Evaluation, and Creation

**Analyze the following scenarios and identify which involve metabolic processes. (Select all that apply)**

*Hint: Consider the processes that convert energy.*

- [x] **A) A lion digestively breaking down its prey ✓**

- [ ] **B) A tree absorbing sunlight ✓**
- [ ] C) A rock eroding over time
- [ ] **D) A human breathing ✓**

> Scenarios involving metabolic processes include a lion digestively breaking down its prey and a human breathing.

**Compare and contrast sexual and asexual reproduction in terms of genetic diversity and evolutionary advantages.**

*Hint: Think about how each method affects future generations.*

> **Sexual reproduction promotes genetic diversity, while asexual reproduction results in identical offspring; both have evolutionary advantages.**

**Which of the following best explains the relationship between heredity and evolution?**

*Hint: Consider how traits are passed down through generations.*

- ○ A) Hereditary prevents evolution
- ○ **B) Hereditary provides the genetic variation necessary for evolution ✓**
- ○ C) Evolution eliminates heredity
- ○ D) Hereditary and evolution are unrelated

> Heredity provides the genetic variation necessary for evolution.

**Evaluate the impact of environmental changes on the homeostasis of an organism and propose strategies that organisms might use to cope with these changes.**

*Hint: Think about how organisms adapt to their surroundings.*

**Environmental changes can disrupt homeostasis; organisms may adapt through behavioral changes or physiological adjustments.**

**Design an experiment to test the response of plants to different types of stimuli. Include the hypothesis, variables, and expected outcomes.**

*Hint: Consider how you would set up a scientific experiment.*

1. What is the hypothesis?

Plants will grow towards light.

2. What are the variables?

Light intensity, direction, and type of stimulus.

3. What are the expected outcomes?

Plants will bend towards the light source.

An experiment could involve exposing plants to light, gravity, and touch; the hypothesis might be that plants will grow towards light.

**Which of the following is the most effective strategy for an organism to survive in a rapidly changing environment?**

*Hint: Consider the adaptability of organisms.*

- ◯ A) Immediate physical transformation
- ◯ **B) Behavioral adaptation ✓**
- ◯ C) Genetic mutation
- ◯ D) Migration to a stable environment

> Behavioral adaptation is often the most effective strategy for survival in changing environments.