# Necessary Life Functions

## Maintain boundaries

## Movement

### Locomotion

### Movement of substances

## Responsiveness

### Ability to sense changes and react

## Digestion

### Break-down and absorption of nutrients

## Metabolism—chemical reactions within the body

### Produces energy

### Makes body structures

## Excretion

### Eliminates waste from metabolic reactions

## Reproduction

### Produces future generation

## Growth

### Increases cell size and number of cells

# Survival Needs

## Nutrients

### Chemicals for energy and cell building

### Includes carbohydrates, proteins, lipids, vitamins, and minerals

## Oxygen

### Required for chemical reactions

## Water

### 60–80% of body weight

### Provides for metabolic reaction

## Stable body temperature

## Atmospheric pressure

# Homeostasis

## Homeostasis—maintenance of a stable internal environment

### A dynamic state of equilibrium

## Homeostasis is necessary for normal body functioning and to sustain life

## Homeostatic imbalance

### A disturbance in homeostasis resulting in disease

# Maintaining Homeostasis

## The body communicates through neural and hormonal control systems

### Receptor

#### Responds to changes in the environment (stimuli)

#### Sends information to control center

# Maintaining Homeostasis

### Control center

#### Determines set point

#### Analyzes information

#### Determines appropriate response

### Effector

#### Provides a means for response to the stimulus

# Feedback Mechanisms

## Negative feedback

### Includes most homeostatic control mechanisms

### Shuts off the original stimulus, or reduces its intensity

### Works like a household thermostat

# Feedback Mechanisms

## Positive feedback

### Increases the original stimulus to push the variable farther

### In the body this only occurs in blood clotting and during the birth of a baby