

Life Science Test - Study Guide

What are the 5 characteristics of living things?

Organization (2) Reproduction, (3) Adjust to Surroundings (4) Growth & Development, (5) Energy, Water and Minerals

All living things are organized. What does this mean?

They are specially designed to perform different life functions.

All organisms have the ability to reproduce. What does this mean?

Organisms produce new organisms that are similar to them.

What happens if an organism does not get energy, water or minerals?

The organism dies.

What type of instrument would you need to see a cell on your body?

A microscope

Define "Cell"

The smallest unit of life. A cell contains all the materials necessary for life.

Define "Organism"

A living thing.

What is a multicellular organism?

An organism with more than one cell.

All living things begin as how many cells?

One cell

What type of instrument do you need to see a cell on your own body?

A microscope

What is DNA?

A very long list of instructions that gives each cell in your body its own shape and function.

A cell divides into two separate cells using a process called what?

Cell division

Explain how a cell divides into two separate cells.

- (1) Chromosomes line up in the center of the cell
- (2) Chromosomes split into two identical halves
- (3) Cell makes a fold down the middle
- (4) Cell splits into two identical halves

All living things are made of what?

Cells

Define each of the following terms...

Cell Wall: A tough structure outside the cell membrane that supports and protects the cell (animal cells do not have these)

Cell Membrane: Surrounds the cell and only allows certain materials to move into and out of the cell

Nucleus: Directs all the activities of the cell. It is like a manager of the cell

Vacuole: A temporary storage place for the cell (like a suitcase)

Vesicles: Transports protein packages created by the golgi bodies

Ribosomes: Helps to create protein

Golgi Bodies: Packages and moves proteins to the outside of the cell

Mitochondria: Releases energy for the cell

Lysosomes: Digests wastes and worn-out cell parts

Endoplasmic Reticulum: Moves material around the cell, like a system of conveyor belts

Cytoplasm: Gel-like material inside the cell membrane and outside the nucleus

Chloroplasts: Takes in sunlight, water and carbon dioxide and converts it to food

Prokaryote Cells: Cells that DO NOT have a nucleus

Eukaryote Cells: Cells that have a nucleus

Tissue: A group of like cells that group together to make an organ

Organ: A structure (such as a heart, kidney, etc.) that is made of tissues and performs some specific function in an organism

Organ System: Organs working together for a specific function

What are 3 ways that plant and animal cells are different?

(1) Plant cells have chloroplasts.

(2) Plant cells have a large central vacuole, while animal cells have smaller vacuoles.

(3) Plant cells have a cell wall.

Define "Heredity"

ANSWER: The passing of characteristics from one generation to the next.

What did Gregor Mendel show?

ANSWER: Patterns of heredity reflect the transmission of coded information from parents to offspring.

How many chromosomes do humans have?

ANSWER: 46

What is it called when an egg joins a sperm cell?

ANSWER: The process is called fertilization. The resulting cell is called a zygote.

Who was the Austrian monk to discover the rules of heredity while working with pea plants?

ANSWER: Gregor Mendel

What is a dominant trait?

ANSWER: A stronger trait that covers a weaker (recessive) trait.

What do you call an organism that possesses two dominant or two recessive genes for a single trait?

ANSWER: Purebred

What do you call an organism that possesses one dominant and one recessive gene for a single trait?

ANSWER: Hybrid

What do you call the diagram that assists you in predicting the traits of offspring?

ANSWER: Punnett Square

What are chromosomes made of?

ANSWER: DNA

What woman, along with Francis Crick, James Watson and Maurice Wilkins is credited with helping to discover the structure of DNA?

ANSWER: Rosalind Franklin

Define "DNA"

ANSWER: A very long list of instructions that give each cell in your body its own shape and function

Who is Rosalind Franklin and what did she do?

ANSWER: She produced the first usable X-ray pictures of DNA ever taken.

What is the human "genome"?

ANSWER: A complete set of instructions for making a person.

Is it possible right now to produce a photograph of someone by only viewing their DNA?

ANSWER: No

What are the two primary influences acting together throughout one's life?

ANSWER: Heredity and Environment

What are 3 environmental influences on one's life?

ANSWER: (Answers may vary) Food you eat, friends you hang out with, place you live, etc.

What is a species?

ANSWER: A group of organisms that resemble each other and are potentially able to breed with each other.

Traits that cause members of a given species to be different from each other are called what?

ANSWER: Individual Traits

Name 3 inherited traits and 3 non-inherited traits.

ANSWER: (Answers may vary) Inherited: widow's peak, eye color, hair color. Non-inherited: table manners, language, tattoo.

What is a symbiotic relationship?

Two species live together in a way that is usually beneficial to one, sometimes to both.

Give one example of a symbiotic relationship.

Bumblebee pollinating an aster as it gathers nectar

True or False? Although species can adapt to changes in their environment, adaptation usually takes a long time.

True

What does "extinct" mean?

A whole species dies out

What are the simplest behaviors organisms inherit?

Reflexes

Give 3 examples of sets of reflexes that organisms inherit.

1. Blink in bright light
2. Cough when inhale smoke
3. Snatch your hand away from hot water

Animals also inherit genes for behaviors more complex than reflexes. These behaviors are known as _____.

Instincts

What is one instinct that almost all animals inherit?

The instinct to stay alive.

To learn from experience, an organism must have a _____ to store information.

Memory

Who was the Russian scientist that conducted the famous experiment on conditioning?

Ivan Pavlov

What are habits?

Learned behaviors that are repeated so often they are performed without thinking.

Besides instincts and conditioning, another way animals learn is through _____.

Imitation