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CHAPTERS 4–6

Mix and Mingle Party

Activity 5

Goal • Use these mix and mingle cards to tell what you already know about the topics you will study in Unit 2.

What to Do

1. Work with a partner. Imagine you are meeting each other at a party and take turns telling your partner the information on your card. When you have both shared, move on to another partner and share your information with that person.

2. Continue until your teacher gives the signal, or until you have heard and read most of the cards.

3. Your teacher might leave your card with you. As you begin work on the unit, share your information to answer your teacher's questions.

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Activity 5 continued

A trait is a particular feature that can vary in size or form from one individual to another within a species. Chapter 4	The nucleus is responsible for heredity and for controlling the functions of a cell. Chapter 4
Heredity is the process through which patterns of traits are passed from an individual to its offspring. Chapter 4	Genetic instructions are carried on a molecule called DNA. Chapter 4
DNA stands for deoxyribonucleic acid (dee-ox-ee-ri-bo-new-clay-ic). Chapter 4	Chromosomes are made up of genes and genes are made up of DNA. Chapter 4
Every organism has a characteristic number of chromosomes. For example, humans have 46 chromosomes while cows have 60. Chapter 4	Some mutations are helpful to an organism, some are harmful, while others have no effect at all. Chapter 4
When the environment changes, a mutation that was once neutral may become harmful or helpful, depending on what the change was. Chapter 4	A mutagen is a substance that can cause mutations in DNA. Chapter 4

The cell cycle has 3 stages: interphase, mitosis, and cytokinesis. Chapter 5	Interphase is the longest stage of the cell cycle and is the time in which a cell carries out its various functions in an organism. Chapter 5
Before a cell divides, it must make a copy of its genetic material. The copying of DNA is called replication. Chapter 5	The DNA molecule consists of two strands which look like a ladder which is twisted. Chapter 5
Mitosis is the shortest stage of the cell cycle. There are four main phases to mitosis. Chapter 5	In prophase, the chromosomes form x-shaped structures and become attached to strands of protein. Chapter 5
In metaphase, the x-shaped chromosomes line up at the middle (or equator) of the cell. Chapter 5	During anaphase, the protein fibres contract and shorten. This pulls the x-shaped chromosomes apart. Chapter 5
Binary fission is a form of asexual reproduction that occurs in some single-celled organisms. It produces two identical offspring. Chapter 5	Fragmentation is a type of reproduction in which a piece of the parent organism breaks off and then develops into an identical copy of the parent. Chapter 5

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Sexual reproduction produces offspring that are genetically different from each other. Chapter 6	The variation or inherited genetic differences between members of a species is called genetic diversity. Chapter 6
When an egg and sperm combine, the act is called fertilization. Chapter 6	Eggs and sperm are haploid (have half the amount of genetic materials as members of their species). When they join, they form a zygote which is diploid (has the normal amount of genetic material). Chapter 6
A zygote is formed by the union of a sperm and an egg. The zygote divides by mitosis and forms an embryo. Chapter 6	External fertilization occurs when the egg and sperm combine outside the organism's body. External fertilization often occurs in organisms, such as fish, that live in water. Chapter 6
With internal fertilization the egg and sperm combine inside the female's body. Birds, mammals, and reptiles reproduce by internal fertilization. Chapter 6	In flowering plants, the male gamete is called pollen. The transfer of pollen to the female part of a plant is called pollination. Chapter 6
There are three main stages in incomplete metamorphosis: egg, nymph, adult. Chapter 6	In complete metamorphosis there are four stages: egg, larva, pupa, adult. Chapter 6