Reproduction and Meiosis PowerPoint Notes

Asexual organisms reproduce differently than sexual organisms. As multicellular organisms develop, their cells differentiate.

There are thousands of different ____________ of organisms. Each species produces more of its own. A species of bacteria splits to make two ____________ bacteria. A palm tree produces more palm trees. Humans produce more humans. The formation of new organisms of the same species is called ____________.

There are two types of reproduction: ____________ and ____________.

Asexual reproduction
Asexual reproduction is reproduction that requires only ______ ________. Most _________ organisms, like bacteria and protozoans, reproduce this way. _________ is a type of asexual reproduction. Your _________ cells reproduce this way. In asexual reproduction, the ______ and _______ structures are copied. Then the parent cell ________, forming two cells that are exact copies of the ________.

Sexual reproduction
To understand sexual reproduction, you first need to know about human body cells. _________ cell in your body, except for sex cells, has _______ chromosomes. These chromosomes are called _______ chromosomes. Homologous chromosomes have pairs of ______________ information, are usually the _______ and ________, and have the same ________ of chromosomes as their _________ cells. Unlike body cells, human sex cells only have _______ chromosomes. In males, these sex cells are called _______; in females, they are called _________.

So how do these sex cells end up with only half the number of chromosomes?
Through ___________ ____________. This process is called ____________. Meiosis is the process of cell division in which _________ cells (eggs and sperm) are formed. Eggs and sperm are _________ that unite to produce a cell zygote that may develop into an embryo.

During meiosis, a cell undergoes _______ _______ to produce ______ sex cells, each with half the number of chromosomes of the parent cell. The chromosomes are _________ once and then the _________ divides twice. ________ daughter cells are created from each parent cell. Each sex cell has ______ the number of chromosomes found in the parent cell – one of the ______________ from each homologous ________.

Diploid and Haploid Chromosomes
A _________ set of chromosomes is called a _________ set. A ________ set of chromosomes is called a _________ set. Most _________ cells have a diploid set of chromosomes except in sex cells.

Fertilization
__________ is the union of _________ and _________ to form a new organism. When an egg is fertilized by a sperm, the _________ set of chromosomes from the _________ unites with the _________ set of chromosomes from the _________. Human sex chromosomes carry ____________ that determine whether the offspring is male or female. Females have _______ ___________ chromosomes. Males have _______ ________ chromosome and ________ ________ chromosome. During meiosis, ________ of each chromosome pair ends up in a sex cell. During human sexual reproduction egg and sperm combine to form either the XX or XY combination. ________ = female. ________ = male.
Will the offspring will be male or female?

Zygote
A fertilized egg, called a ____________, has a ____________ set of chromosomes. For each homologous pair, one chromosome comes from the ____________, and one from the _____________. After fertilization, the zygote rapidly divides by ____________ and becomes an _____________. An embryo is an organism in its ____________ stages of development.

Differentiation
In the developing embryo, cells begin to _____________. The final outcome is a multicellular organism with many different types of _____________. You have brain cells, stomach cells, skin cells, and muscle cells to name just a few. All of those cells can be traced back to the _____________. Cell differentiation is the term used to describe the process of cell _____________. For example, cells that eventually divide to become part of the stomach are different from those that will become part of the nervous system. As cells differentiate, they give rise to different _____________. These tissues eventually form the _____________. As the embryo continues to develop, some cells become even more _____________. For example, some cells in the retina of your eye become rod cells (for vision in dim light) and others become cone cells (for color vision). After differentiation is _____________, most cells lose the ability to become other types of cells.

Mnemonic Device: miTosis mainTains the chromosome number, while mEiosis rEduces the number.