Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_\_

Using pages 151-153 in your books answer the following questions.

1. What is DNA?

DNA is a long, thin molecule that stores genetic information.

How long is DNA?

DNA is about three billion nucleotides long.

1. Define Chromosome

Chromosomes are rod shaped structures made of DNA and proteins.

1. What are histones and what do they maintain?

Histones are proteins that DNA tightly wraps around.

1. What is a chromatid?

A chromatid is a half of a chromosome.

1. Draw figure 8-2 and label
2. What is the centromere?

A centromere is a point that attaches two chromatids in a chromosome.

1. What is chromatin?

A chromatin is a less tightly coiled DNA-protein complex.

1. Describe the DNA in a prokaryote cell.

The DNA in most prokaryotic cells consists of only one chromosome, which is attached to the inside of the cell membrane.

1. Describe how the number of chromosomes differs between species.

Some species of organisms have the same number of chromosomes while others have very different numbers.

1. How many chromosomes does a garden pea have? Dog?

A garden pea has 20 chromosomes. A dog has 78 chromosomes.

1. What are sex chromosomes?

Sex chromosomes are chromosomes that determine the sex of an organism, and they may also carry genes for other characteristics.

1. What are the sex chromosomes in humans?

Sex chromosomes in humans are XX for females and XY for males.

1. What are autosomes?

All chromosomes other than the sex chromosomes are autosomes.

1. How many autosomes are in humans?

There are 44 chromosomes in a human that are autosomes.

1. What are homologous chromosomes?

Homologous chromosomes are the two copies of each autosome.

1. How does each organism get homologous chromosomes?

The organism receives one copy of each autosome for each parent.

1. How are homologous chromosomes similar?

Homologous chromosomes are the same size and shape and carry genes for the same traits.

1. What is a karyotype?

A karyotype is a photomicrograph (a kind of picture) of chromosomes in a normal dividing cell.

1. What are diploid cells?

Diploid cells are cells that have two sets of chromosomes.

1. What types of cells are diploid?

All human cells, except reproductive cells, are normally diploid cells.

1. What is haploid?

Haploid cells have half the number of chromosomes that are present in diploid cells.

1. What types of cells are haploid?

Haploid cells are reproductive cells (sperm and egg cells).

1. What happens when an egg and sperm combine?

When reproductive cells (sperm and egg cells) combine they fuse together and form a diploid cell called a zygote.