1-3 C2 Meiosis

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Name: _____ Topic 1.3 Concept 2 Date: _____

Science 9 [redacted] Cell Division: Meiosis

Types of Cells in Mammals

1. Somatic Cells
   - Most of the cells that make up the human body
   - Mitosis – 23 pairs of chromosomes = 46 chromosomes (Human)

Example cells: Internal organ, skin, muscle

2. Stem Cells
   - Divide to give rise to specialized cells
   - Mitosis

Example cells: Bone marrow

3. Germ Cells
   - Cells that give rise to gametes
   - Meiosis – half of the parent's chromosomes

Example cells: Eggs (in ovaries), sperm (in testes)

Meiosis

The process that produces gametes which have half of chromosomes as the parent.

Comparison of mitosis and meiosis

Table 1 A comparison of mitosis and meiosis

	Parent cell (chromosome number)	Sister chromatids …	Number of daughter cells	Number of chromosomes in daughter cells
mitosis	2n ex, 46	separate during anaphase	2	2n ex, 46
meiosis	2n ex, 46	stay together in meiosis I but separate in meiosis II	4	n ex, 23

Haploid vs. Diploid

Egg / Sperm
Haploid (n) – Cells with half the chromosomes than the parent

Diploid (2n) – Cells with a complete set of chromosomes.

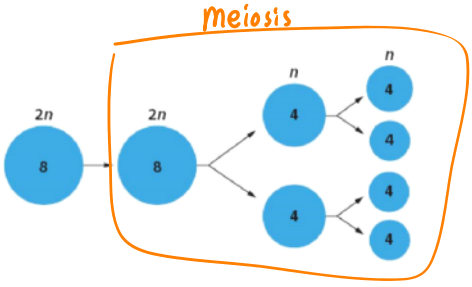

Figure 2 Fruit fly somatic cells have eight chromosomes (diploid or 2n) and are produced by mitosis. Fruit fly gametes have four chromosomes (haploid or n) and are produced by meiosis.

Stages of Meiosis

Label the stages of meiosis I and meiosis II and briefly explain what is happening at each stage.