



Mitosis and Meiosis

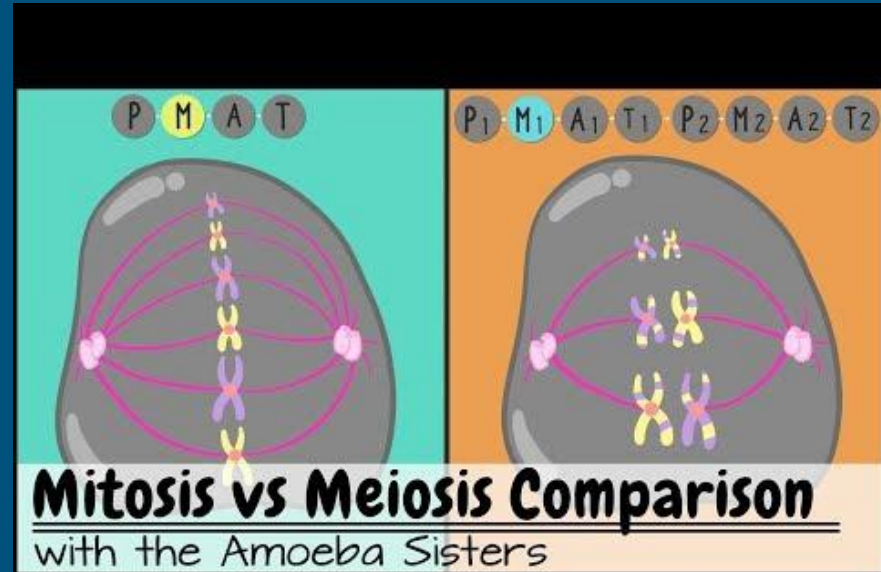
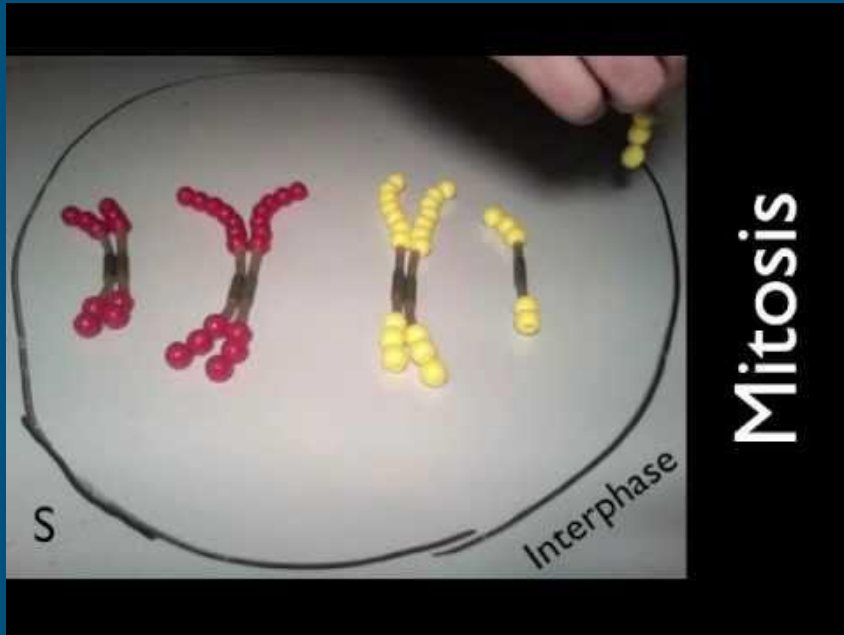
(say what?)



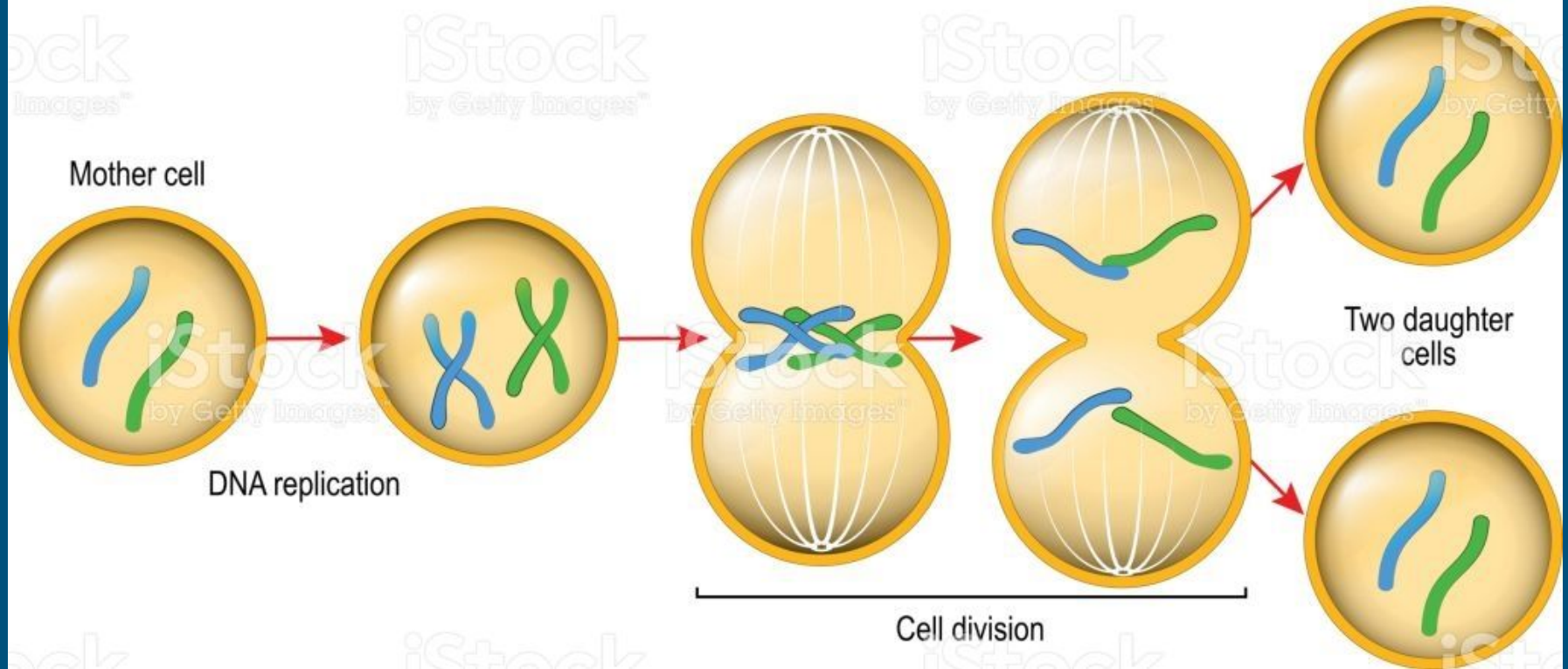
Mitosis vs Meiosis

(I hope you know what this is... if not... better figure it out! Quick, use your phone appropriately)

Still don't remember- here a choice of videos to watch



Mitosis Review



MEIOSIS REVIEW

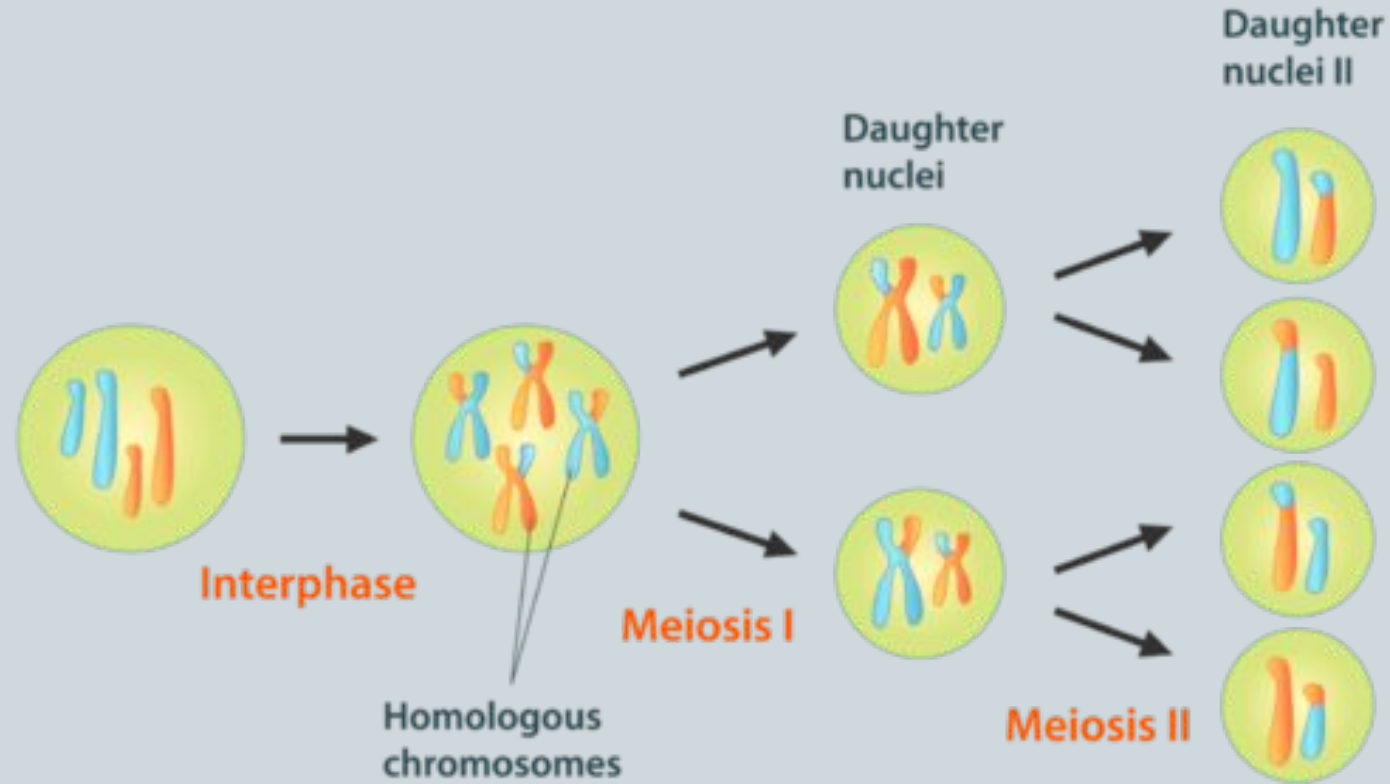
- basis for sexual reproduction which requires two parents
- ensures variation within a species
- produces gametes (sperm and egg cells) which contain half the number of chromosomes found in a body cell
- gametes carry genetic info from one generation to the next
- gametes are haploid (one set of chromosomes- 23 in total)

Meiosis

Meiosis I -
homologous
pairs separate

Meiosis II- sister
chromatids
separate

-outcome is 4
haploid cells





EVOLUTION & GENETICS

HEREDITY

Complete the following table:

Organism	Number of chromosomes in parent cell	Diploid number	Haploid number	Number of homologous pairs of chromosomes	Number of chromosomes in the following stages
					Meiosis I/Meiosis II
Chimpanzee	48	48			/
Fruit fly		8			/
Black bear					/ 38
Peanut			10		/

Homologous Chromosomes

-in a body cell there is a diploid number of chromosomes (46); 23 chromosomes from each parent

-22 pairs are matching - they code for the same things- the pairs are called homologous chromosomes

-two chromosomes that make up the 23rd pair are the sex chromosomes

-in human females the 23rd pair is homologous (Typically XX)

-in human males the 23rd pair is not homologous (Typically XY)

Sex Chromosomes

Sex Chromosomes determine the genetic sex of an individual.

In a sexual species there are many variations in sex chromosomes

Species	Females	Males
insects	XX	X
reptiles	Warm developmental environment	Cooler developmental environmental
Some flatworms	Lost penis became a female	
Parrotfish/clownfish	Can change sex based on the needs of the population	

- Slime molds, some mushrooms- have hundreds of sexes.

Sex chromosomes continued

In humans:

Female Genotype: XX, XXX, XO

Male Genotypes: XY, XXY

BUT-

Could be born female and grow a penis at age 12 due to 5-alpha reductase deficiency.

Could be female with an XY genotype, but have an insensitivity to androgens, so have a female body

Could be female with X and Y chromosomes, but Y chromosome is missing the SRY gene, so have a female body

Could be male with XX genotype, but one X has the SRY gene and so have a male body

And your genetics and body may match, but your heart and brain do not.