

# Worksheet on Cell Division

Name \_\_\_\_\_

<b>PART I: CELL CYCLE AND MITOSIS</b>
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Define and describe the difference between a germ cell and a somatic cell.  
Make at least 4 comments in each column.

Germ:	Somatic

Draw the Cell Cycle:

- Identify phases, subphases & what cell activities characterize each.
- Label 3 gap phases;
- Define apoptosis:

Do all cells have a cell cycle that is equal in duration?

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## **Mitosis: How a somatic cell divides.**

Why is it important to create new cells? List 3 reasons why mitosis is important.

a) \_\_\_\_\_

b) \_\_\_\_\_

c) \_\_\_\_\_

Complete the chart by noting what occurs in each phase of the cell cycle.

Interphase	Gap 0 (G0)	
	Gap 1 (G1):	
	S Phase:	
	Gap 2 (G2):	
Mitosis or M Phase	Prophase:	
	Metaphase:	
	Anaphase:	
	Telophase:	
Cytokinesis	C	

What is the final product of Mitosis?

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Define:

a) Haploid:

b) Diploid:

c) sister chromatids:

d) homologous pairs:

.

e) crossing over

f) Independent Assortment

How is cancer a disease of the cell cycle?

What is the difference between asexual and sexual reproduction? What are the benefits of each?

What is the difference between the centriole and the centromere?

At what phase is the DNA most difficult to see under a microscope? Explain.

What phase involves the separation of sister chromatids towards opposite poles of the cell?

Are the newly formed daughter cells equal and identical in all ways? Same size?

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## **PART II MEIOSIS**

MEIOSIS: combining genetic material through fertilization  
What is the purpose of meiosis?

Use words or pictures to identify the events at each stage below.

Interphase:

Prophase I

Metaphase I

Anaphase I

Telophase I

Prophase II

Metaphase II

Anaphase II

Telophase II

Interphase

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What is the final product of Meiosis?

Use the table below to differentiate between Meiosis and Mitosis

Mitosis	Meiosis