

Name: _____
Mr. Willis
Biology: _____
Date: _____

Unit VI
Biology – Mitosis and Meiosis
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VI

Exploring Mitosis

Use the micro-slide-viewer to observe the slides of various aspects of Mitosis. Follow the directions in the Card File that comes with the viewer. Be sure to read the entire card in order to find the answers to the following questions.

ANIMAL MITOSIS – Set 53

1. The pictures in this slide set are eggs from an ascaris. What is an ascaris?
2. Why are we using the ascaris worm to show mitosis?
3. In what direction, is the equatorial plate running in these slides?
4. Where are the poles located on these slides?

Slide 1 – The Zygote

5. What is a zygote?
6. What are the 2 dark masses in the middle of the zygote?
7. Why is it difficult to keep all of the chromatin in focus?

Slide 2 – Pro-metaphase

8. How many chromosomes did each parent contribute to this cell?
9. Which chromosomes did the sperm supply to the cell?

Slide 3&4 – Metaphase/Metaphase-Polar View

10. Where are the chromosomes located in the cell?
11. What are the structures labeled P?
12. Draw a picture of metaphase in the space below. Label the chromosomes, centrioles, aster, and spindles

Slide 5 – Early Anaphase

13. How many chromosomes are present in the ascaris cell during anaphase?
14. How many chromosomes were originally present in the ascaris zygote?
15. Why are there two distinct groups of chromosomes at this stage?

Slide 6 – Anaphase

16. Where are the two new groups of chromosomes moving?
17. Why do the chromosomes look beaded?
18. Draw a picture of anaphase in the space below. Label the chromosomes, centrioles, aster, and spindles.

Slide 7 – Telophase

19. Draw a picture of telophase in the space below. Label the chromosomes, centrioles, spindles, cytoplasm, and pinch.

Slide 8 – Late Telophase

20. The ascaris zygote has now become two cells. What happens from here?
21. How many chromosomes are in a human cell?

PLANT MITOSIS – Set 55

22. Why can you grow new plants by cutting pieces off of an old plant?

Slide 1 – Early Prophase

23. What is interphase?

24. How does cell B differ from cell A?

25. When does mitosis begin?

Slide 2 – Prophase

26. What is happening to the shape of the nucleus during this stage of mitosis?

Slide 3 – Metaphase

27. Cell C is now in metaphase. What is missing from this plant cell that we saw during the same stage in animal cells?

Slide 4 – Early Anaphase

28. What structures can be seen that were not obvious during metaphase?

Slide 5 – Anaphase

29. Cell E is in anaphase. In what stage are the cells labeled B?

Slide 6 – Late Anaphase

30. What will happen when the two new sets of chromosomes reach the poles of the cell?

31. What is the difference between each new set of chromosomes?

Slide 7 – Telophase

32. There are two dark masses in the cell. What will each mass become?

33. What will the faint line between the two dark masses eventually become?

34. What do we call the two new cells that form from the older cell?

Slide 8 – Late Telophase

35. Immediately after the cell wall completes the cell division, what will each new cell do?

PUTTING IT ALL TOGETHER

36. Select either the plant or animal cell. In the space below, draw out all of the stages of mitosis from interphase to telophase. Label each stage.