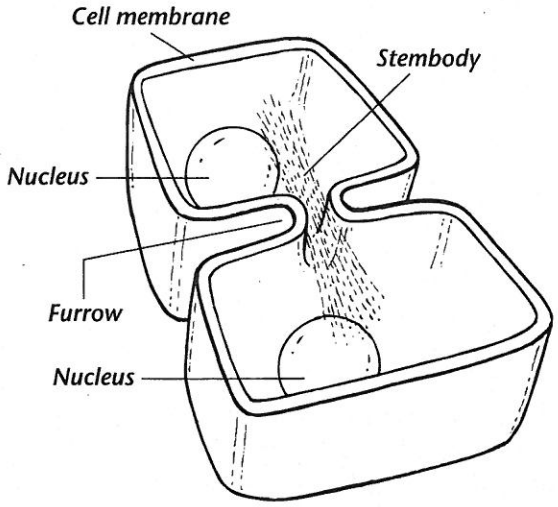
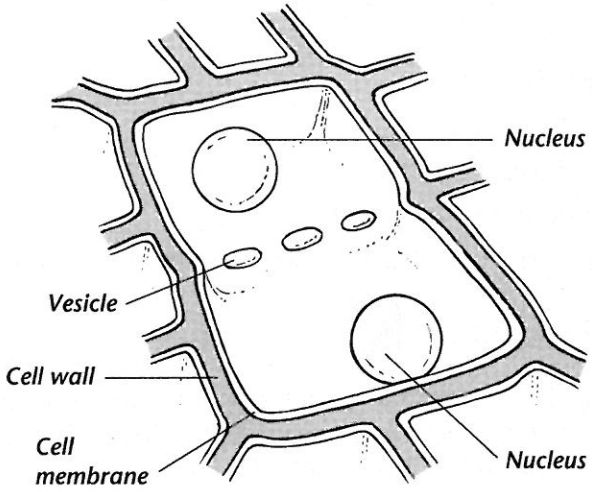
Name _____ Date _____ Class _____

Cytokinesis in Plant Cells and Animal Cells

Recall that all plant cells have a rigid cell wall. Because of this rigid cell wall, cytokinesis in plant cells is different from cytokinesis in animal cells. Study the figures below to see how cytokinesis differs in plant cells and animal cells.



Animal cell



Plant cell

In animal cells, as daughter cells pinch into two cells, there is a space between the cells called a furrow. As the furrow gets increasingly narrower, the spindle fibers are pressed into a tight bundle, called a stembody. The stembody eventually is cut in two as the new cell membranes fuse together.

In plant cells, pockets of cell-wall material, called vesicles, line up across the middle of the cell. The vesicles fuse together in two sheets to form new cell walls and cell membranes between the daughter cells.

Answer the following questions on a separate sheet of paper.

1. How does the furrow form in an animal cell? What is the furrow's role in cell division?
2. What causes the stembody to form in an animal cell? What happens to the stembody when the cell divides?
3. What are vesicles? Which parts of the plant cell do vesicles develop into?
4. If you observed a cell under a microscope during cytokinesis, how could you tell whether it was a plant cell or an animal cell?