Life Science Unit

Mitosis Modeling Activity

Work cooperatively within your group for this short activity. Each person should have rotating tasks such as gathering materials, completing things stated in the directions, modeling each step multiple times, and reading through the directions.

Materials:

OAA Booklet page 279

Set of 4 Mitosis Diagrams

4 index cards labeled “Step 1”, “Step 2”, “Step 3”, and “Step 4”

2 pieces of pipe cleaner from 4 separate colors (example: 2 blue, 2 red, 2 green, 2 yellow)

Directions:

1. Gather all required materials and bring them to your table.
2. Open the OAA Booklet to page 279 and refer to the diagram at the top of the page, called Figure 15-3. Read out loud to the group the caption written below diagram 15-3.
3. Take the set of 4 Mitosis Diagrams and lay them down on your table in order. Use page 279 as your guide and check to see that you have the order correct.
4. Use the index cards to label each diagram by setting them above each diagram. (Picture 1 corresponds with Step 1, etc.)
5. Pick up one piece from each of the 4 different colors of pipe cleaner.
6. Set them on top of the chromosomes in Step 1. Let everyone in the group see the four colors as they represent the 4 chromosomes on the paper.
7. Remove the pipe cleaner pieces from Step 1. Now make duplicated chromosomes to prepare for Step 2. This means twisting two pieces of the same color together. Do this for all 4 colors.
8. Set the duplicated chromosomes on top of the chromosomes in Step 2. Let everyone in the group see the four sets of duplicated chromosomes lined up down the middle of the nucleus.
9. Prepare for Step 3 by separating the duplicated chromosomes and creating a “V”-shape out of each. (By separating the duplicated chromosomes, I mean you have to take them back apart.) Get everyone to help.
10. Set the eight “V”-shaped single chromosomes in their appropriate spots on Step 3. You should have this step checked for correctness. You cannot simply place them randomly. Can you see them going to opposite sides now?
11. Return each pipe cleaner to a straight position and place all eight of them in their appropriate spots in Step 4. Check for correctness. For example, it would be incorrect to have two of the same color within the same nucleus!
12. Organize, gather, and return the materials.
13. Get ready to discuss the activity by sitting in your seat and waiting quietly.