Genetics and Cells Activity Bag

Mitosis / Meiosis: Student Activity Guide

This activity is a couple of puzzles. One puzzle is about mitosis, the process of a cell dividing into two identical cells. The other is about meiosis, which is how living things create sex cells.

These directions will get you started. Your teacher will be in contact to guide you and provide information.

Materials from the bag

- 1 Mitosis / Meiosis color document

Part 1: Mitosis Puzzle

1. Get the Mitosis / Meiosis document and cut it in half to separate the two puzzles. Put the meiosis puzzle back in the bag for part 2.
2. Cut-out the individual mitosis puzzle pieces. You should have six pieces.
3. These pieces represent what happens when the cells in your body divide. This is called mitosis.
4. During mitosis, **one** cell divides into **two** identical cells so that each new cell has the exact same genetic information. This process has happened billions and billions of times in you since the moment you started off as one cell.
5. Arrange the puzzle pieces in any sequence that makes sense to you, going from start to finish. Ignore the numbers inside the pictures. No looking up information! Just give it a try. You don't need to get it "right" at this point. Just remember that your puzzle begins with one cell and ends with two identical cells. The things inside the cells are chromosomes, genetic information.
6. Once complete, take a picture to capture this attempt.
7. Now, do some research on mitosis and use this information to correct your puzzle if necessary.
8. Tape the pieces on a sheet of paper and write a description of what happens with each puzzle piece.
9. Your teacher will share the correct mitosis puzzle.

Part 2: Meiosis Puzzle

1. Get the meiosis puzzle from the bag.
2. Cut-out the individual meiosis puzzle pieces. You should have eight pieces.
3. These pieces represent stages in the process of your body making sex cells. The process is meiosis.
4. In meiosis, **one cell** divides into **four cells**. Each of these four cells has half the genetic information of the original cell. These new cells are sex cells, like eggs or sperm. When they come together, they supply the full amount of genes needed to form new offspring.
5. Arrange puzzle pieces in any sequence that makes sense to you, going from start to finish. Ignore the numbers inside the pictures. No looking up information! Just give it a try. Your puzzle begins with one cell and ends with four, each with half the genetic information found in the original cell. The things you see inside the cells are chromosomes, the genetic information for the next generation.
6. Once complete, take a picture to capture this attempt.
7. Now, do some research on meiosis and use this information to correct your puzzle if necessary.
8. Tape the pieces on a sheet of paper and write a description of what is happening with each puzzle piece.
9. Your teacher will share the correct meiosis puzzle.