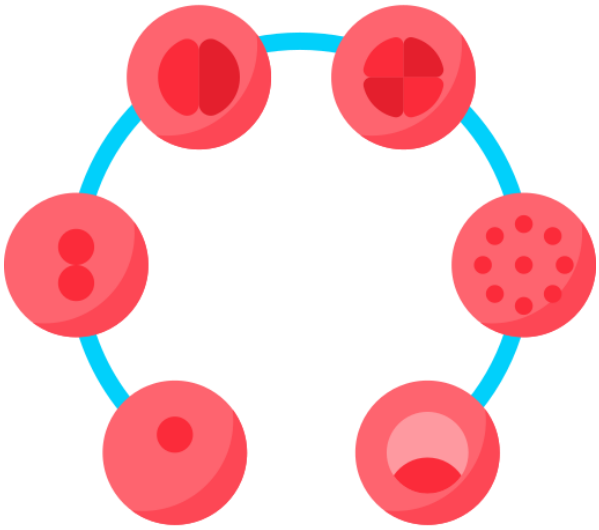
Biology Bricks Activity

The Cell Cycle



To find out how a cell reproduces, and creates new cells, you can do this simple experiment based on the cell cycle.

The idea is to look at how chromosomes interact during the cell cycle.

You will need:

- *Paper plate*
- *Ball of red modelling clay*
- *Ball of blue modelling clay*
- *Two thumbtacks*

Instructions

1. Use the red clay to make two rod-shaped chromosomes about the size of your little finger. Make two more from the blue clay.
2. Beginning with interphase, start by placing a red chromosome and a blue chromosome on the plate. This represents the genetic material before cytokinesis.
3. When it's almost time for a cell to divide, it makes a copy of chromosomes. To show this, place the second red rod next to the one on the plate. They are both now known as sister chromatids.
4. Connect these two sisters with a thumbtack to represent the centromere. This is the place where the chromatids come in contact.
5. Do the same process with the blue rods.

Questions to Ask

How many chromosomes were present during interphase?

What happened to them?

Biology Bricks

GCSE Science in small, understandable steps

Part Two

It does not finish there. As well as interphase, this activity will look at the different phases: prophase, metaphase, anaphase, telophase and cytokinesis.

You will need:

- *All materials from the first part of the experiment*
- *Two paper plates*
- *Scissors*

Instructions

1. During *prophase*, the chromosomes are ready for cell division.
2. Move the red and blue chromosomes to the centre of the plate to simulate *metaphase*.
3. Remove the *centromere* holding the two red sister chromatids together and separate them slightly. Do the same for the blue chromatids. This is what happens in *anaphase*. Each chromatid is now a chromosome.
4. Chromosomes reach the opposite end of the cell during *telophase*, and the cell begins to divide. Manually separate the chromosomes. Use scissors to partially cut the top and bottom sections of the plate.
5. Continue to drag the chromosomes off the old plate. Place each on a daughter cell plate to simulate *cytokinesis*.