Candy Chromosomes Kit

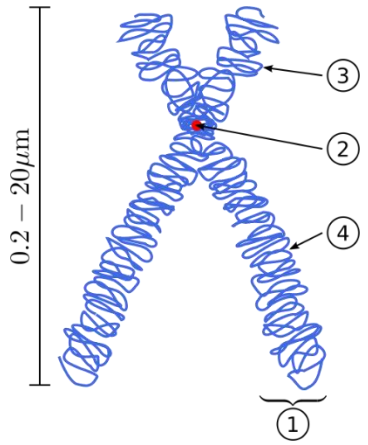
Objective: Understand the structure and composition of chromosomes. Students will work with gummy worms as model chromosomes and investigate how they are organized, and move through the process of Mitosis.

Meets TN State Standards:
7.LS3.1 Hypothesize that the impact of structural changes to genes (i.e., mutations) located on chromosomes may result in harmful, beneficial, or neutral effects to the structure and function of the organism.
7.LS3.2 Distinguish between mitosis and meiosis and compare the resulting daughter cells
7.LS1.8 Construct an explanation demonstrating that the function of mitosis for multicellular organisms is for growth and repair through the production of genetically identical daughter cells.

Introduction:
Discuss/Review the following (write underlined vocabulary words on the board):

- DNA is organized and packed into chromosomes for storage
- A complete set of human DNA is composed of 23 chromosomes
- One chromosome contains two identical chromatids
- Chromatids are linked by a centromere
- Individual chromatids separate during cell division.

Draw & label the following diagram of a chromosome on the board:

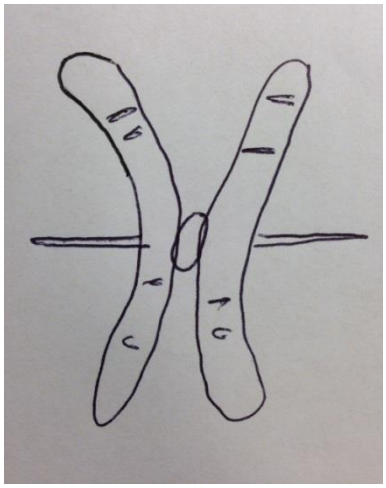


(1) Chromatid, (2) Centromere, (3) Short arm, (4) Long arm

Materials:

-Gummy worms
-Toothpicks
-Lab sheet
-Marshmallows
-Mitosis place mat
-Colored pencils

Procedure:



1. Pass out lab sheets. Students should build their own chromosome models but work in pairs to model the phases of mitosis.

2. Distribute materials:
   - -Pass out 1 laminated Mitosis place mat per student pair
   - -Pass out 4 gummy worms to each student
   - -Pass out two toothpicks per student
   - -Pass out two marshmallows per student

3. Students use their materials to assemble their chromosomes into pairs.

4. Students sketch and color their 2 chromosome pairs on lab sheets. Students label centromeres.

5. Students use the table "Mitosis" place mat to move their chromosomes through the phases of mitosis.

6. Students illustrate the 4 phases of mitosis on lab sheet.

7. Students write two reflection statements on lab sheet.

8. Collect materials, disinfect/wipe down mats if needed.

Name:_____ Date:_____

1. Draw and color your and your partner's chromosome pairs. Label the centromeres.

2. Working with your partner, use your candy chromosomes to walk through the phases of mitosis. Illustrate the 4 phases of mitosis below.

Reflections: Write two things you learned by doing this hands-on activity.

1._____
_____
_____
_____

2._____
_____
_____
_____