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Name _____ Class _____ Date _____

Quick Lab

DATASHEET FOR IN-TEXT LAB

Modeling Chromosomal Mutations

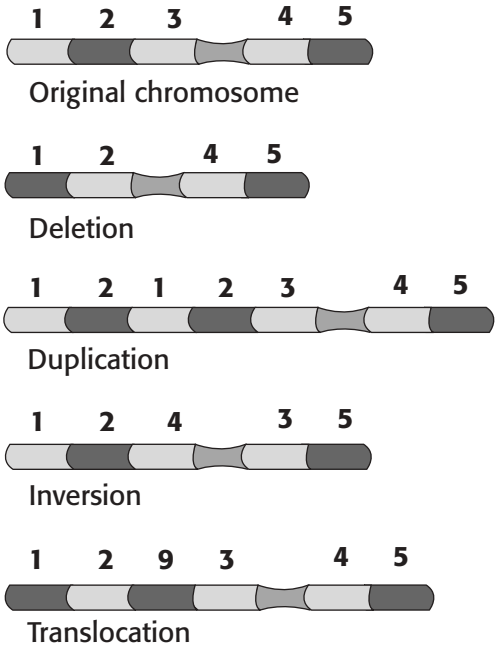
You can use paper and a pencil to model the ways in which chromosome structure can change.

MATERIALS

- 14 note-card pieces
- pencils
- tape

Procedure

1. Write the numbers 1–8 on note-card pieces (one number per piece). Tape the pieces together in numerical order to model a chromosome with eight genes.
2. Use the "chromosome" you made to model the four alterations in chromosome structure illustrated below. For example, remove the number 3 and reconnect the remaining chromosome pieces to represent a deletion.
3. Reconstruct the original chromosome before modeling a duplication, an inversion, and a translocation. Use the extra note-card pieces to make the additional numbers you need.



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Analysis

Describe how a cell might be affected by each mutation if the cell were to receive a chromosome with that mutation.

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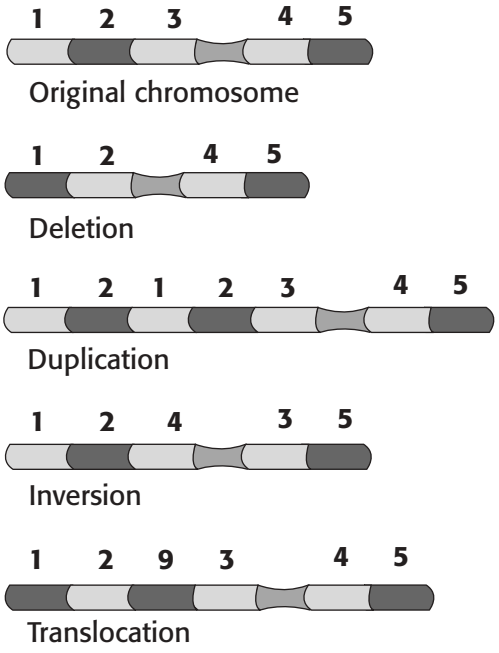

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Modeling Chromosomal Mutations *continued*

Analysis

Describe how a cell might be affected by each mutation if the cell were to receive a chromosome with that mutation.

Answers will vary based on the type of mutation: deletion: cell would be missing a gene, which could prove fatal; duplication: cell would have an extra gene, which could prove fatal or result in malfunctioning of the cell; inversion: cell may not be able to use the gene because it is located in a different area on the chromosome, which could prove fatal; translocation: cell may not be able to use the gene because it is located on a different chromosome, which could prove fatal.