Name _____ Class _____ Date _____

Quick Lab

DATASHEET FOR IN-TEXT LAB

Modeling Transcription

You can use paper and pens to model the process of transcription.

MATERIALS

- paper
- scissors
- pens or pencils (two colors)
- tape

Procedure

1.  Cut a sheet of paper into 36 squares, each about 2.5 × 2.5 cm (1 × 1 in.) in size.
2. To make one side of your DNA model, line up 12 squares in a column. Using one color, randomly label each square with one of the following letters: A, C, G, or T. Each square represents a DNA nucleotide. Use tape to keep the squares in a column.
3. To make the second side of your DNA model, line up 12 squares next to the first column. Use the same color you used in step 2 to label each square with the complementary DNA nucleotide. Tape the squares together in a column.
4. Separate the two columns. The remaining 12 squares represent RNA nucleotides. Use a different color to "transcribe" one of the DNA strands.

Analysis

1. **Propose** a reason for using different colors for the DNA and RNA "nucleotides."

_____

_____

_____

2. **Predict** how a change in the sequence of nucleotides in a DNA molecule would affect the mRNA transcribed from the DNA molecule.

_____

_____

_____

Name _____ Class _____ Date _____

Modeling Transcription *continued*

3. Critical Thinking

Applying Information Use your model to test your prediction. Describe your results.

_____

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Name _____ Class _____ Date _____

Quick Lab

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4. Separate the two columns. The remaining 12 squares represent RNA nucleotides. Use a different color to "transcribe" one of the DNA strands.

Analysis

1. **Propose** a reason for using different colors for the DNA and RNA "nucleotides."

   Two colors represent the two different molecules.

2. **Predict** how a change in the sequence of nucleotides in a DNA molecule would affect the mRNA transcribed from the DNA molecule.

   The mRNA sequence would not be the same as the one constructed in the activity.

Name _____ Class _____ Date _____

Modeling Transcription *continued*

3. Critical Thinking

Applying Information Use your model to test your prediction. Describe your results.

Their second mRNA is different from the first mRNA.