

Name _____

Transcription Activity – DNA to RNA

Materials

- 1 sheet of five different colors of construction paper
- Pair of scissors
- Black magic marker
- Scotch tape

Directions: Follow the steps

1. Copy the parts for the four different DNA nucleotides onto your construction paper, making sure that each different nucleotide is on a different color paper. Make ten copies of each nucleotide.
2. Using scissors, carefully cut out the shapes of each nucleotide.
3. Using any order of nucleotides that you wish, construct a double-stranded DNA molecule. If you need more nucleotides, copy them as in step 1.
4. Fasten your molecule together using clear tape. Do not tape across base pairs.
5. As in step 1, copy the parts for A, G, and C RNA nucleotides. Use the same colors of construction paper as in step 1. Use the fifth color of construction paper to make copies of uracil nucleotides.
6. With scissors, carefully cut out the RNA nucleotide shapes.
7. With your DNA molecule in front of you demonstrate the process of transcription by first pulling the DNA molecule apart between the base pairs.
8. Using only one of the strands of DNA, begin matching complementary RNA nucleotides with the exposed bases on the DNA model to make mRNA.
9. When you are finished, tape your new mRNA molecule together.

Wrap-up Questions

1. Explain the role of messenger RNA in transcription.
2. Explain the differences between RNA and DNA.
3. Justify why DNA does not leave the nucleus of the cell.
4. How often does transcription take place within a cell?
5. Compare replication to transcription.