

13.1 RNA

The Role of RNA

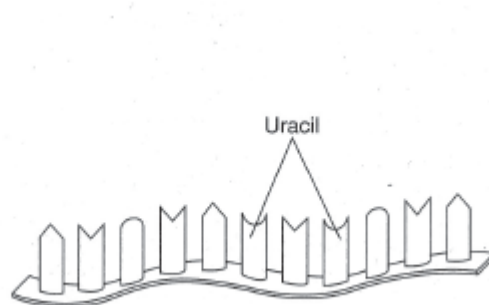
1. Complete the table to contrast the structures of DNA and RNA.

	Sugar	Number of Strands	Bases
DNA			
RNA			

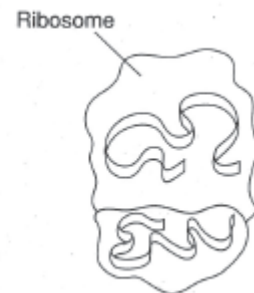
2. On the lines provided, identify each kind of RNA.



a. _____



b. _____



c. _____

3. **VISUAL ANALOGY** The master plan of a building shows how to build and place important parts of the building, such as walls, pipes, and electrical outlets. On the building site, workers use copies of the master plan called blueprints to show them what to do. The master plan is kept in the office. Explain how mRNA works like a blueprint in constructing proteins.



RNA Synthesis

For Questions 4–10, complete each statement by writing the correct word or words.

4. The process of using DNA to produce complementary RNA molecules is called _____.
5. The sequence of _____ in mRNA complements the sequence in the DNA template.
6. In eukaryotes, RNA is formed in the _____ and then travels to the _____.
7. The enzyme _____ binds to DNA during transcription.
8. RNA polymerase binds to regions of DNA called _____, which are “start” signals for transcription.
9. _____ are portions of RNA that are cut out and discarded.
10. _____ are spliced together to make the final mRNA.
11. **THINK VISUALLY** Sketch the sequence in which pre-mRNA is “edited” after it is made on the DNA template and before it is ready to function as mRNA in the cytoplasm. Show the original DNA, the pre-mRNA, and the final mRNA. Be sure to label exons and introns.



Apply the Big idea

12. Use the analogy of the master plan and blueprints used by builders to identify what represents messenger RNA, where the “ribosome” is, and who performs the same kind of job as transfer RNA.

Explain your reasoning.
