

Cross-Curricular Discussion: Q

Directions: The following list of discussion questions is provided to help you take notes, brainstorm ideas and test your thinking in order to be more actively engaged in class discussions related to this article. All questions in this section are related to topics covered in "[An open book](#)."

BIOLOGICAL AND CHEMICAL SCIENCES**Discussion questions:**

1. What is DNA?

2. What is RNA?

3. What do genes produce, and how is gene activity controlled?

Extension prompts:

4. What types of gene mutations make a normal cell become a cancer cell?

5. Use the National Center for Biotechnology Information website: <https://www.ncbi.nlm.nih.gov> or other resources to look up some of the genes that are noted on the human chromosomes in the "The list" diagram in "[An open book](#)." What roles do those genes or their products normally perform, and what diseases might result if the genes are mutated?

6. How can gene therapy be used to change DNA in a cell? What are some of the current limitations of gene therapy?

ENGINEERING AND EXPERIMENTAL DESIGN

Discussion question:

1. Describe a method for sequencing DNA. Are there multiple methods for sequencing DNA?

Extension prompt:

2. List some ways that DNA sequencing is currently used.