**Activity 46: The Central Dogma and Protein Synthesis**

***Learning Objectives***

*Distinguish the locations and functions of transcription and translation*

*Use the genetic code to predict an amino acid sequence*

*Write an mRNA complementary sequence for a given genetic DNA sequence*

**Estimated Completion Time** 60 Minutes

**Instructor Information**

Practice on predicting protein sequence using the genetic code. Directionality of the nucleic acid sequences is important.

**ANSWERS TO QUESTIONS**

1. Three

2. Alanine

3. a. Isoleucine b. Histidine c. Glycine

4. Leucine-valine-cysteine

5. Answers will vary. A nucleic acid code (or language) is being “translated” into an amino acid code (language).

6. Nucleus

7. Ribosome

8. mRNA

9. 3'UGCAUCAGUGCA5'

10. Cys-Ile-Ser-Ala

**Activity 46: Skill Development**

1. a. Lys-Gly-Lys b. Phe-Leu-Phe-Leu c. Tyr-Ile-Arg-Cys

2. Start-Tyr-Gly-Gly-Phe-Leu-Stop

3. a. 3'CTGAATCCG5' b. 3'ACGTTTGATCGA5' c. 3' TAGCTAGCTAGC5'

4. a. 5'ACACCCCAAUAA3' b. Thr-Pro-Gln-Stop