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**Protein Synthesis Simulation**

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1. Start at the "nucleus". Pick up a DNA strand and write the number *of* the

DNA strand on your paper and copy the DNA strand on your paper.

2. Staying in the "nucleus", transcribe the DNA into mRNA. Write the mRNA

Sequence on your paper. Divide into groups of three to represent codons

3. Go to one *of* the "ribosomes" (your desk) and write the tRNA sequence that

corresponds to your mRNA here:

4. Split the tRNA sequence into anti-codons (groups *of* 3 letters)

5. Look around the room for the tRNA cards that match your anti-codons.

Write down the words in order.

*If you* complete this correctly, you should have a sentence. *I f* it does not make

sense, you have made a mistake and need to go back and start over. You should do two sentences.

Check your answer with the teacher when you are done and then answer these questions on the

back *of* your sheet.

**Questions:**

1. Why did you have to stay in the "nucleus" to write down the mRNA?

2. Where does transcription take place?

3 What does transcription produce?

3. Which part of this activity represents translation?

5. What does the final sentence represent in terms of protein synthesis?

6. What does each word represent in terms of protein synthesis?

7. All DNA sequences started with ATG and ended with TAG? Why?

**Protein Synthesis with Words**

**Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour\_\_\_\_\_\_\_\_\_**

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| **Number** | **DNA strand** |
|  | **mRNA (make codons)** |
|  | **tRNA (make anti-codons)** |
|  | **Sentence** |

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| --- | --- |
| **Number** | **DNA strand** |
|  | **mRNA (make codons)** |
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|  | **Sentence** |