

LEGO Protein Synthesis

Purpose:

To understand that different cells build different proteins because they use *different genes* of the *same DNA* molecule.

Pre-lab Questions:

Use your notes to answer the following questions:

1. If you were looking for DNA in a eukaryotic cell, where would you go to find it?
2. What is transcription and where does it occur?
3. What are the DNA-RNA base-pairing rules?
4. What is the name of the 3 nucleotide segments of mRNA?
5. Which organelle is responsible for making proteins?
6. What is translation and where does it occur?
7. During translation, what pairs up with the mRNA codons?
8. What do tRNAs carry to the ribosome, and what do they form as they link up to form a chain?

Stamp of
Approval

Materials:

At each Lab Station:

- Lego "protein" recipe
- Lego genetic code

At a shared location:

- Black Lego blocks
- Blue Lego blocks
- Green Lego blocks
- Red Lego blocks
- White Lego blocks
- Yellow Lego blocks

Posted at the front of the classroom:

- Lego DNA

Procedure:

1. Write your cell type on your data sheet.
2. Copy your "recipe" onto your data sheet.
3. Copy the genes you will use onto your data sheet in groups of three.
4. Transcribe the DNA nucleotides into RNA nucleotides on your data sheet.
5. Decode the RNA codons into the correct Lego blocks.
6. Build your Lego polypeptide chain.
7. Draw and color your Lego polypeptide chain.
8. Answer the questions.