**My Grandmother’s Cookbook**

My great, great grandmother had a cookbook with the most amazing recipes in it. She handed it down to my great grandmother, who handed it to my grandmother, who handed it to my mom, who gave it to me!

This cookbook is so old and delicate, that I keep it in a very special cabinet. When I want to make some of her famous chocolate chip cookies, I go to the cabinet, copy down the recipe, close the book, and shut the cabinet door.

I take the copy with me to the counter. Once I read the recipe at the counter, I tell my children to go and fetch the specific ingredients necessary. Once all of the ingredients are mixed in the proper place and baked, our cookies are ready!

**Use these words below:** DNA, Translation, Amino Acids, Proteins, messenger RNA, Ribosome, transfer RNA, Transcription, Nucleus

**WHAT DO EACH OF THESE THINGS REPRESENT?**

1. **Cookbook**:
2. **Cabinet**:
3. **Copying Down the Recipe**:
4. **Me**:
5. **Countertop**:
6. **Reading the Recipe**:
7. **Children**:
8. **Ingredients**:
9. **Cookies**:

***Protein Synthesis***

*When a cell knows that it needs to make a protein, it sends a signal to the nucleus. There, the section of DNA (****gene****) necessary gets copied into a strand of messenger RNA. The* ***mRNA*** *leaves the nucleus and goes to sit on a ribosome. The* ***ribosome*** *will read three nucleotides (****codon****) at a time. Because it cannot leave the ribosome, it will send a* ***transfer RNA*** *with the complementary sequence of nucleotides (****anticodon****) to pick up the needed amino acid. When the amino acids are lined up correctly, a* ***peptide bond*** *will form between each of them.**When the ribosome reaches the* ***stop codon****, it will release the chain of amino acids (****protein****) and the mRNA will be destroyed.*

**Special Prescriptions**

When you are sick, you go to see the doctor in his office. He will check you for symptoms and write you the needed prescription. You cannot eat or take the prescription, so you must go to a pharmacist who can read the doctor’s handwriting and give you the necessary pills in a jar for you to use.

**WHAT DO EACH OF THESE THINGS REPRESENT?**

1. **Doctor**: DNA
2. **Doctor’s Office**: Nucleus
3. **Prescription**: mRNA
4. **Process of Writing the Prescription**: Transcription
5. **Pharmacy**: Ribosome
6. **Pharmacist Reading the Prescription**: Translation
7. **Pills**: Amino Acids
8. **Jar filled with Pills**: Protein

***Transcription and Translation***

*(Sum up the actual process of transcription and translation here.)*