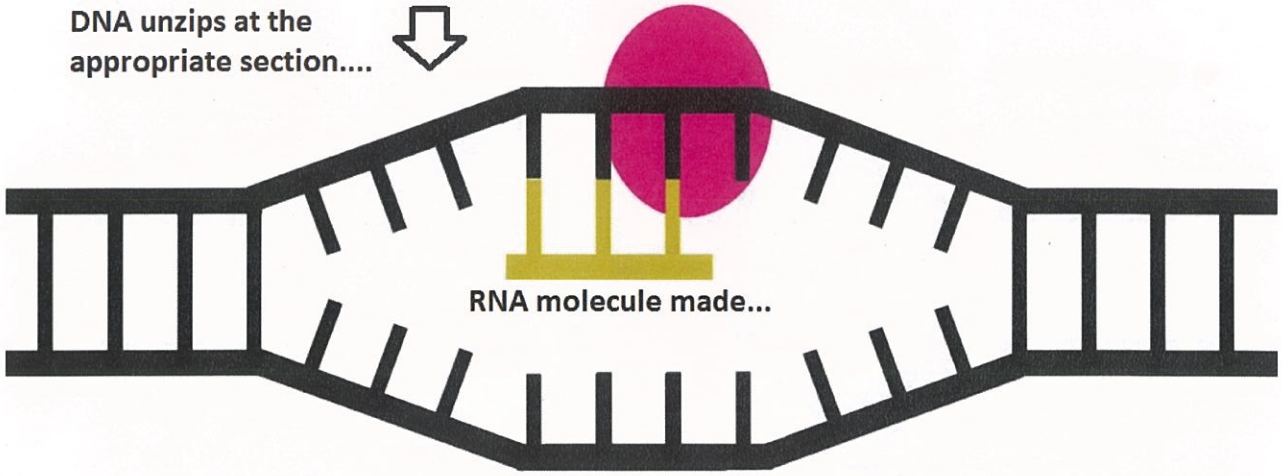
Genes are needed to make proteins....

Proteins are chemical substances that play a vital role in the functioning of the body. Enzymes, hormones and antibodies are all types of proteins. **To make proteins the body needs to reads the genetic code found on genes of the DNA**. This genetic code is like a recipe for making the correct proteins.

Proteins are made in the **cytoplasm of the cell by ribosomes**. You may recall that DNA is found in the nucleus and is too large to fit through the pores in the nuclear membrane. The cell makes **templates** of sections of the DNA needed to make proteins which is capable of leaving the nucleus and finding its way to the ribosome. This template is called **RNA (Ribonucleic acid)**.

To make RNA, a section of the DNA is unzipped and the RNA is made with bases that are complimentary to one side of the DNA stand (template strand) that was unzipped. This RNA molecule can then leave the nucleus and enter the cytoplasm where it will find a ribosome.

DNA → RNA → PROTEIN



DNA RNA Comparison

	DNA	RNA
Double/Single Stranded?	Double	Single
Bases Present (appropriate partners identified)	Thymine + Adenine Cytosine + Guanine	Uracil + Adenine Cytosine + Guanine
Type of Sugar on Backbone	Deoxyribose Sugar.	Ribose Sugar
Function	Cell Division. Protein Synthesis (Controlling cell functions)	Used for protein synthesis.
Location in the Cell	Nucleus.	Nucleus → Cytoplasm (at ribosome)