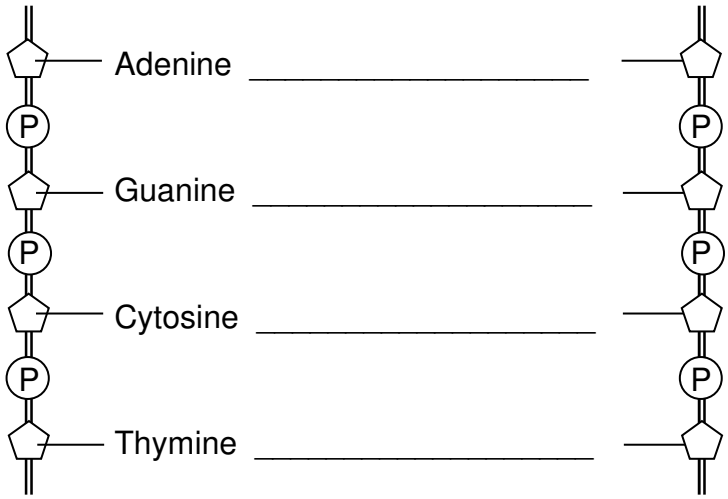
Enrichment 1: **Lesson 22**

DNA: Blueprint for Life

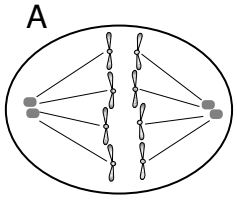
1. What does DNA do?
2. What does a strand of DNA look like?
3. Where can DNA be found in a cell?
4. What are the three parts that make up DNA?

5. Here is one side of a strand of DNA. Fill in the bases on the other side. Remember to match each base with its correct partner.

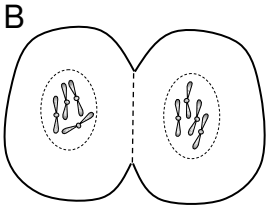


6. These cells are dividing, but they got all mixed up and are in the wrong order. Can you tell what is going on in each cell? Write a short description under each cell to explain what is happening.

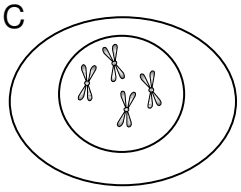
A



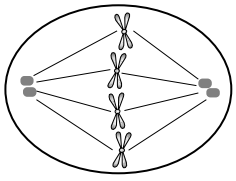
B



C



D



7. Using the letters by each picture above, arrange the steps in order from first to last.

Copying DNA is a complicated process, but it's fun to watch. There's a good animation of a strand being copied on You Tube at https://www.youtube.com/watch?v=5VefaI0LrgE

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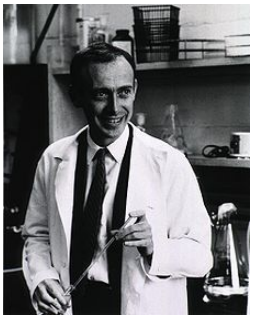
Enrichment 2:

The Chemistry of DNA



James Watson

DNA is a *huge* molecule! It is made up of patterns of repeating parts. The pattern creates a code for making more molecules. Molecular biologists have learned how to read this code and treat or prevent some diseases carried in the code. To find out more about this amazing molecule, read the online article from The Rainbow and answer these questions.

1. What is biochemistry?

2. What do nucleic acids do?

3. What kind of organisms have DNA?

4. What is the chemical formula for a phosphate group?

5. DNA is one type of nucleic acid. What is the other type?

6. What is RNA used for?

7. The diagram on page 107 of the reading shows a small piece of a DNA strand. The O stands for an oxygen molecule, the H is hydrogen, the C is carbon, and the N is nitrogen. The lines between the letters represent the bonds between the atoms. A single line is a single bond and a double line is a double bond. Draw the picture of each base.

Adenine	Guanine
Thymine	Cytosine

Bonus: Look at the long chain on the left side of the DNA diagram. Find the symbols for PO_4. They look like a +. You can see they repeat along the chain. Do you know what the symbols in between the "plusses" represent?

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