In your textbook, read about what DNA is and the replication of DNA.

Label the diagram. Use these choices: nucleotide, deoxyribose, phosphate group, nitrogenous base, hydrogen bonds, base pair.

Complete each statement.

7. ________________ , guanine (G), cytosine (C), and thymine (T) are the four ________________ in DNA.

8. In DNA, ________________ always forms hydrogen bonds with guanine (G).

9. The sequence of ________________ carries the genetic information of an organism.

10. The process of ________________ produces a new copy of an organism’s genetic information, which is passed on to a new cell.

11. The double-coiled shape of DNA is called a ________________.
In your textbook, read about genes and proteins and RNA.

Complete the chart on the three chemical differences between DNA and RNA.

<table>
<thead>
<tr>
<th>Structure</th>
<th>DNA</th>
<th>RNA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. strand of nucleotides</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>2. sugar</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>3. nitrogenous base</td>
<td>a.</td>
<td>b.</td>
</tr>
</tbody>
</table>

In your textbook, read about the genetic code.

Complete each statement.

4. Proteins are made up of __________________________.

5. There are twenty different types of __________________________.

6. The message of the DNA code is information for building __________________________.

7. Each set of three nitrogenous bases that codes for an amino acid is known as a __________________________.

8. The amino acid __________________________ is represented by the mRNA codon ACA.

9. __________________________ and __________________________ are mRNA codons for phenylalanine.

10. There can be more than one __________________________ for the same amino acid.

11. For any one codon, there can be only one __________________________.

12. The genetic code is said to be universal because a codon represents the same __________________________ in almost all organisms.

13. __________________________, __________________________, and __________________________ are stop codons.

14. __________________________ and __________________________ are amino acids that are each represented by only one codon.
In your textbook, read about transcription from DNA to mRNA.

Complete each statement.

15. Proteins are made in the cytoplasm of a cell, whereas DNA is found only in the __________________________.

16. The process of making RNA from DNA is called __________________________。

17. The process of transcription is similar to the process of DNA __________________________.

18. __________________________ carries information from the DNA in the nucleus out into the cytoplasm of the cell.

19. mRNA carries the information for making proteins to the __________________________.

In your textbook, read about translation from mRNA to protein.

Label the diagram. Use these choices: transfer RNA (tRNA), amino acid, amino acid chain, codon, anticodon, messenger RNA (mRNA), ribosome.

20. ________________

21. ________________

22. ________________

23. ________________

24. ________________

25. ________________

26. ________________