

Name: \_\_\_\_\_ Per: \_\_\_\_\_

## Macromolecules WebQuest

**Prior Knowledge:** Before beginning the lesson, use the Learning Scale below to rate your knowledge. Place a check in the before box. You will re-rate yourself after the lesson.

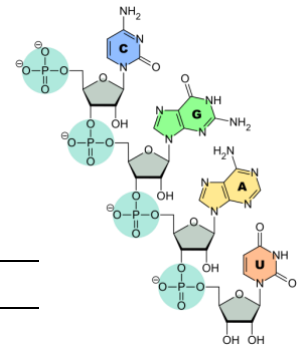
Rating Before	Learning Scale	Rating After
	<b>4</b> I can teach others about the structure, function, and examples of macromolecules. I can teach about monomers and polymers.	
	<b>3</b> I can classify macromolecule according to their structure and function. I can give examples of each type of macromolecule. I can describe the difference between monomers and polymers.	
	<b>2</b> I can describe macromolecule and their structure and function. I can give one example of each type of macromolecule. I can define monomers and polymers.	
	<b>1</b> With help, I can describe macromolecule and their structure and function. I can give an example of each type of macromolecule.	
	<b>0</b> I do not understand macromolecule or their structure and function. I cannot give an example of each type of macromolecule.	

### TASK ONE - INTRO TO BIOMOLECULES AKA MACROMOLECULES

Use the link to watch the "Biomolecules" video from the Amoeba Sisters. As you watch, answer the following questions.

Full URL: <https://www.youtube.com/watch?v=YO244P1e9QM> Tiny URL: <http://tinyurl.com/jjf644z>

1. What is your favorite food? \_\_\_\_\_
2. What is food a source of? \_\_\_\_\_
3. What is a monomer? \_\_\_\_\_
4. What are biomolecules: \_\_\_\_\_
5. Carbohydrates are a very important source of \_\_\_\_\_
6. The monomers of carbohydrates are called \_\_\_\_\_
7. Lipids are also known as \_\_\_\_\_
8. What are the two building blocks of lipids? \_\_\_\_\_
9. What are three functions of lipids? \_\_\_\_\_
10. After you run out of carbohydrate energy, where does your body get more energy? \_\_\_\_\_
11. What are the monomers of proteins? \_\_\_\_\_
12. What are three functions of proteins? \_\_\_\_\_
13. What are enzymes made of? \_\_\_\_\_
14. What do genes code for \_\_\_\_\_
15. What are two examples of nucleic acids? \_\_\_\_\_
16. What do DNA and RNA code for? \_\_\_\_\_
17. What is the monomer of nucleic acids? \_\_\_\_\_
18. Write out the Elements Found in the Following Macromolecules:
  - a) Carbohydrates (CHO) \_\_\_\_\_
  - b) Lipids (CHO) \_\_\_\_\_
  - c) Protein (CHON) \_\_\_\_\_
  - d) Nucleic Acids (CHONP) \_\_\_\_\_



**TASK TWO – MACROMOLECULES**

Use the link to complete the “Molecules of Life” Tutorial. As you move through the tutorial, answer the following questions.

Full URL: <http://www.cpalms.org/Public/PreviewResourceStudentTutorial/Preview/111955>

Tiny URL: <http://tinyurl.com/zvla6qb>

Opening Slide Tab

19. What are the four predominant elements in biology? \_\_\_\_\_

Molecules Tab

20. A train is comparable to a \_\_\_\_\_ A train car is comparable to a \_\_\_\_\_

21. What are the building blocks of macromolecules? \_\_\_\_\_

22. When monomers are linked together, the resulting molecule is called a \_\_\_\_\_

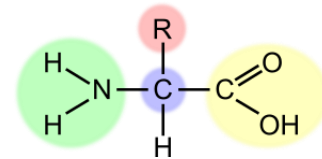
23. “Mono” means \_\_\_\_\_ “Poly” means \_\_\_\_\_ A monomer is a single \_\_\_\_\_

A polymer is a link of \_\_\_\_\_ In biological systems a polymer is called a \_\_\_\_\_

24. A train car is to a train, as a \_\_\_\_\_ is to a polymer an a molecule is to a \_\_\_\_\_

25. What are the four main classes of macromolecules?

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_



Carbohydrates Tab

26. What are two important functions of carbohydrates? \_\_\_\_\_

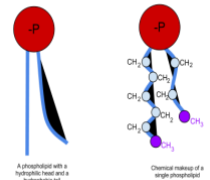
27. What type of complex carbohydrate is cellulose and what is its role in plant cells? \_\_\_\_\_

28. What is another name for a complex carbohydrate? \_\_\_\_\_

29. Where do we get all of our simple and complex carbohydrates from? \_\_\_\_\_

30. Copy the answers to the practice questions within the activity below:

- a) Carbohydrate: \_\_\_\_\_
- b) Monosaccharide: \_\_\_\_\_
- c) Polysaccharide: \_\_\_\_\_



Lipids Tab

31. What are three functions of lipids: \_\_\_\_\_

32. Lipids are oily. Do they mix with water? \_\_\_\_\_

Proteins Tab

33. What are proteins made from? \_\_\_\_\_ What cell organelle makes proteins? \_\_\_\_\_

34. Complete the following protein table.

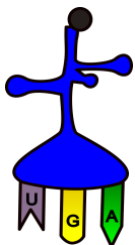
Protein Types	Function

Nucleic Acids Tab

35. What are the main functions of nucleic acids? \_\_\_\_\_

36. How many strands make up RNA? \_\_\_\_\_ How many strands make up DNA? \_\_\_\_\_

37. List the three types of RNA and the structural shape of the RNA in the table below.



Type of RNA	Shape

38. During the Nucleic Acid Practice, Write the statement that refer to nucleic acids in the space below.

- a) \_\_\_\_\_
- b) \_\_\_\_\_
- c) \_\_\_\_\_
- d) \_\_\_\_\_



Final Review Tab

39. Copy the main functions of each macromolecule in the table below.

Macromolecule	Function

**TASK THREE - DEHYDRATION SYNTHESIS & HYDROLYSIS**

Use the link to watch the “Hydrolysis and Dehydration Synthesis” video from Ricochet Science. As you watch, answer the following questions. Full URL: <https://www.youtube.com/watch?v=ZMTeqZLXBS0> Tiny URL: <http://tinyurl.com/jlzozrc>

40. Explain the process of dehydration synthesis. Use the terms monomer, polymer, and water in your response. \_\_\_\_\_

41. Explain the process of hydrolysis. Use the terms monomer, polymer, and water in your response. \_\_\_\_\_

Use the link to complete the Dehydration Synthesis and Dehydration Animation. Read the top of the screen and press the dehydration synthesis and hydrolysis tab to watch the animation and answer the questions below.

(Works best with Firefox Browser) Tiny URL: <http://tinyurl.com/gqnzpfw>

Full URL: [http://resource.rockyview.ab.ca/t4t/bio20/mm/m7/hydrolysis/Bio20\\_Hydrolysis\\_Final.swf](http://resource.rockyview.ab.ca/t4t/bio20/mm/m7/hydrolysis/Bio20_Hydrolysis_Final.swf)

42. Fill in the blanks: A \_\_\_\_\_ joins together \_\_\_\_\_ of organic compounds by a chemical \_\_\_\_\_ to make \_\_\_\_\_. The \_\_\_\_\_ reaction of \_\_\_\_\_ up \_\_\_\_\_ is accomplished by chemical reaction known as \_\_\_\_\_

43. Click on dehydration synthesis. (HINT a “dimer” is another term for 2 monomers bonded together). Describe what occurred in your own words. \_\_\_\_\_

44. Click on hydrolysis. Describe what occurred in your own words. \_\_\_\_\_

**TASK FOUR - MACROMOLECULES GAME REVIEW**

45. Use the link to play the Soccer Macromolecules Review Game – Play until you win before you re-rate yourself on the Learning Scale on Page 1 of this Handout. Tiny URL: <http://tinyurl.com/zi2dzul>

Full URL: [https://reviewgamezone.com/games4/free-kick.php?test\\_id=675&title=MACROMOLECULES](https://reviewgamezone.com/games4/free-kick.php?test_id=675&title=MACROMOLECULES)