

Name: _____

Geee Genome Webquest

This website is designed to help you gain a better understanding of human genetics. You need to complete the series of activities outlined below and answer the questions listed.

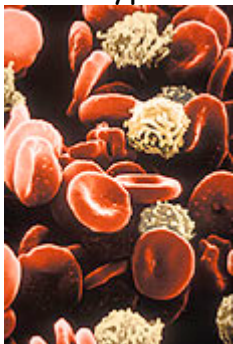
Type in the URL http://www.nature.ca/genome/03/c/03c_e.cfm If you have trouble loading this page go to www.ask.com and type in "geee genome". Select the first option from the list that is generated for you.



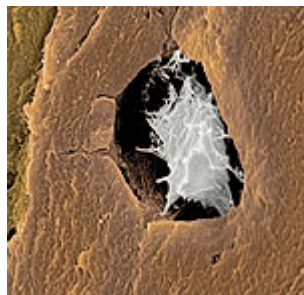
Click on "The Basics"

Complete the sentence: At a microscopic level, every living thing is made up of cells. A bacterium only has _____ cell, but you have about _____ _____.

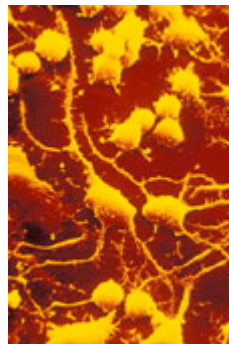
What type of cells are these?



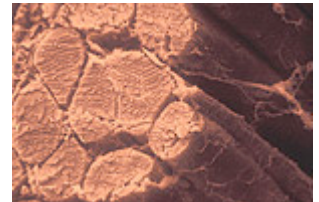
1. _____



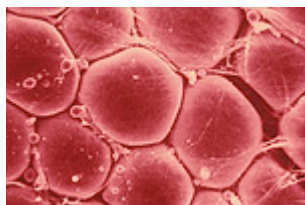
2. _____



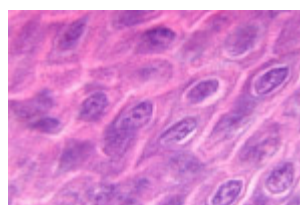
3. _____



4. _____



5. _____



6. _____

7. If you unrolled the DNA contained in only one of your cells, how long would it be? _____

Click on "inside the cell"

8. What are Eukaryotic cells? _____

9. What are Prokaryotic cells? _____

10. What are the five kingdoms that we can classify all living organisms within? _____

On the top right hand side of the screen there is a menu

Click on "from cell to gene"

11. Your genome is composed of how many chemical letters? _____

12. You have at least how many genes in your body? _____

13. What are traits? _____

Watch the video "**Exploring Our Molecular Selves**"



Complete the following:

14. In humans, a cell nucleus contains _____ pairs of chromosomes. For _____, 22 of these pairs are of matching chromosomes, and the _____ pair contains the different X and Y, or sex chromosomes. Females have _____ X chromosomes in their _____ pair.

On the top right hand side of the screen there is a menu

Click on "Proteins"

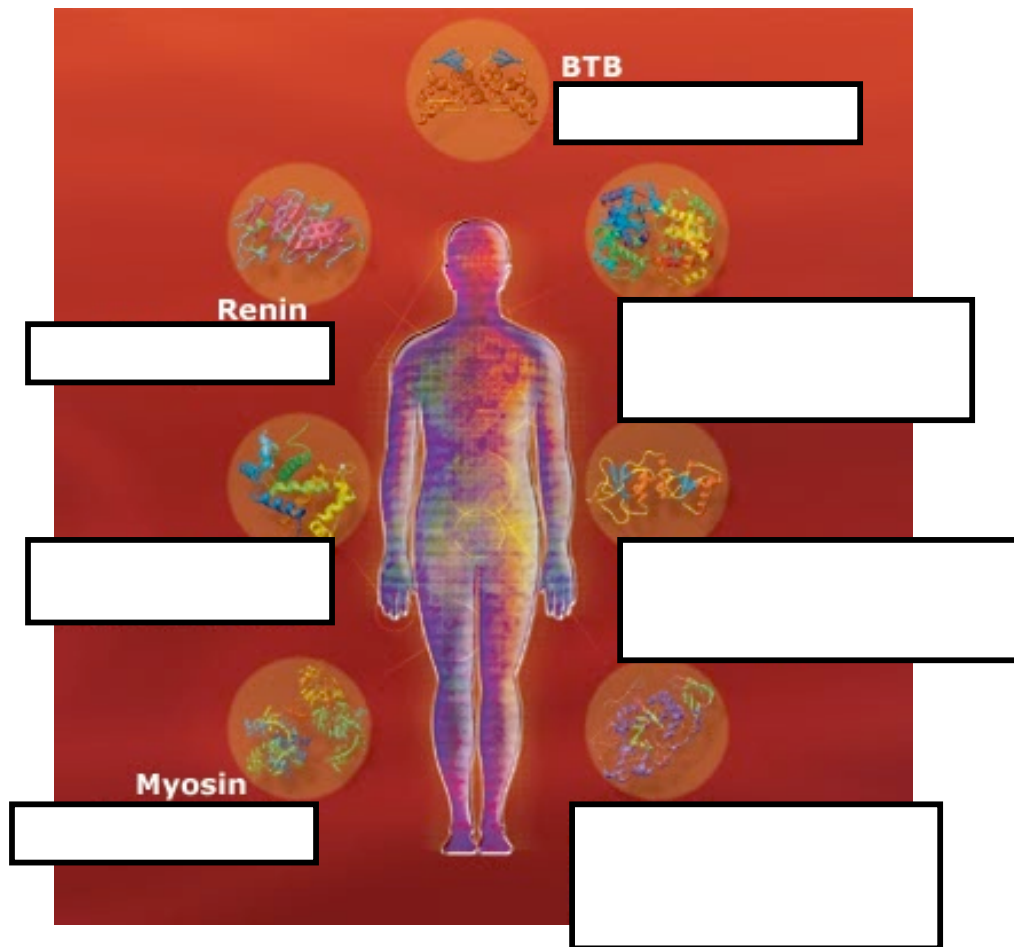
15. What are proteins? _____

16. How many amino acids does the human body needs to be able to make (or synthesize) its thousands of proteins? _____

17. Where do we get the other 8 amino acids form that we can't make ourselves? _____

18. What three place can proteins also be found? _____

On the top right hand side of the screen there is a menu
Click on "proteins"
Complete the following chart



On the top right hand side of the screen there is a menu
Click on "we are all mutants"

19. Why are we all considered to be 'mutants' _____

20. Mutations are usually due to what? _____

21. What is cancer? _____

22. What are the names of the two gene mutations that are related to an inherited risk of breast cancer and ovarian cancer? _____

On the top right hand side of the screen there is a menu
Click on "hereditary and reproduction"

23. What is genetics? _____

24. What does the word 'hereditary' mean? _____

25. What is genetic variation? _____

On the top right hand side of the screen there is a menu
Click on "Commonality with other organisms"

Complete the following table

| Animal | Number of genes | % in common with humans |
|-------------|-----------------|-------------------------|
| Chimpanzee | | |
| Mouse | | |
| Zebra fish | | |
| Fruit fly | | |
| Thale cress | | |
| Yeast | | |
| Roundworm | | |
| bacterium | | |

On the top right hand side of the screen there is a menu
Click on "hereditary"

Complete the following: While humans are _____ per cent genetically similar, we are even more like members of _____.

Play the "pass the genes game"

On the top right hand side of the screen there is a menu
Click on "sex and reproduction"

26. Sexual reproduction involves the merging of what? _____

27. How many chromosomes does each reproductive cell have? _____

Additional notes: _____

END OF WEBQUEST