

DNA WebQuest  
(From GVL)

Go to: <http://learn.genetics.utah.edu/content/begin/tour/>

Click on “What is DNA?” at the top and go through the animation. Answer the questions.

- 1) What is DNA?
- 2) The complete set of instructions for making a human being is found where?
- 3) What do genes tell the cell to make?

Click on “What is a gene?” at the top and go through the animation. Answer the questions.

- 4) How many genes do humans have?
- 5) What is the function of the protein hemoglobin?
- 6) How is sickle-cell anemia caused?
- 7) What are some other proteins that genes code for?

Click on “What is a chromosome?” at the top and go through the animation. Answer the questions.

- 8) How long would the DNA in one human cell be?
- 9) How is DNA packaged to fit into the small space of a cell nucleus?
- 10) How many chromosomes are in a human cell?
- 11) Why are there “pairs” of chromosomes? Where do they come from?
- 12) Describe the sex chromosomes.

Click on “What is a protein?” at the top and go through the animation. Answer the questions.

- 13) What is the role of proteins in transmitting pain messages?
- 14) Describe structural proteins.
- 15) “There are proteins involved in the making of proteins.” Explain this sentence.

Click on “What is heredity?” at the top and go through the animation. Answer the questions.

- 16) Give an example of the environment acting on the expression of a genetic trait.
- 17) Where do we get our traits?
- 18) Explain how each child born to the same parents will have a different combination of chromosomes.

Click on “What is a trait?” at the top and go through the animation. Answer the questions.

- 19) What is a trait?
- 20) List the types of traits that exist.
- 21) Give an example of how an environmental factor can influence a trait.
- 22) Briefly explain how the Hitchhiker’s Thumb trait is determined using the following words: allele, dominant, recessive, homozygous, heterozygous.

Go to: [http://nobelprize.org/educational\\_games/medicine/dna\\_double\\_helix/](http://nobelprize.org/educational_games/medicine/dna_double_helix/)

Click on “Play DNA Game”; Click “next” and reading each page, continue to click next until you come to the game.; Click on organism #1 and match the base pairs as fast as you can! It is hard!

Click Next and then click on each organism until you identify the one that belongs to chromosome #1; continue playing the game with the other two chromosomes, filling in the chart below.

Chromosome #	How many chromosomes?	How many base pairs?	How many genes?	What is the organism?
1				
2				
3				