Name _____ Date _____ Period ____ Score _____

Your World
Cracking the Code of Life

More than Genes

1. What is the genome sometimes called?_____
2. The scientist thought they would find _____ genes because _____ _____, but they only found about _____ genes.
3. Proteins combine like _____ to make _____ that interact with others.
4. What does 98% of our DNA made up of? _____ What do they call this DNA? _____
5. How many genes does a roundworm have? _____

Three Books in One

1. What do As and Ts show up as on karyotypes? _____ Cs and Gs? _____
2. Chromosome 19 is called the _____. Why _____
3. The gene that causes Tay-Sachs is like a _____ and the gene the causes and allergic reaction is more like a _____.
4. What can influence you? _____ But who is ultimately in control? _____
5. Why was the mutation that causes sickle cell anemia "written" in to some people genome? _____
6. Why is important they we have knowledge about flies and mice? _____ _____
7. What do we use bacterial genes for? _____
8. What is one theory for the purpose of DNA parasites? _____ _____

Why Tay-Sachs Disease?

1. List four symptoms of Tay-Sachs Disease _____
2. Is Tay-Sachs a dominate or recessive disease? _____
3. What chance does each of the children have of inheriting Tay-Sachs? _____
4. What does the Tay-Sachs gene do in a normal person? _____, what does it do? _____
5. What can't the mutated gene do? _____ _____
6. Who does a genetic diease start with? _____
7. What is the founders effect? _____

8. In what group os Tay-Sachs very common? _____
   Why? _____
9. How did tuberculosis affect Tay-Sachs within the population? _____
   _____
10. What have Orthodox Jew's done to help prevent passing on of Tay-Sachs? _____
    _____

The Breast Cancer Gene: Fate or Risk?

1. Does most breast cancer run in families? _____
2. What two mutant genes cause most cases of breast cancer? _____
3. Does having one of the mutant genes guarantee getting breast cancer_____
4. What do these genes do normally? _____
5. Cells are supposed to makes _____ _____ of the DNA when they divide. But sometimes there are _____. It may _____ an A for a G, or delete a _____. The odds of that happening when a single cell divides is _____.
6. Cells come with a _____ that repairs DNA. Cancer cells _____ much more rapidly than normal cells and become a _____.

Of Mice and Memory

1. What did the researchers call their smart mice? _____
2. Synapse: _____
3. Receptor: _____
4. When do NMDA receptors stay open longer? _____
5. What did the researchers do to make smarter adults? _____
6. What did the results of their test confirm? _____
7. Why is important to do "mental pushups? _____
   _____
8. What is a "knockout mouse"? _____
9. When the "knockout mouse" didn't do well in testing, Joe Tsien gave them _____ and _____ them in their skills. Upon re-testing, they scored _____ _____ as the _____ mice.
10. If you genetic inheritance isn't ivy-league, _____ and _____ give rewards.
11. When does a lot of the connection that turn learning into memory happen? _____ _____. So students should _____.
12. What kills cells with NMDA receptors? _____ This can kill _____% of a teen's brainpower.
13. How you _____ affects how _____ you are.

Iceland; 1,110 + Years of Genetic Solitude

1. What disease is five times more common here than anywhere in the world? _____
2. Starting during WWI, the government began _____.
3. During WWII, the government added _____.
4. What percentage of Icelander's have a complete health and genetic record? _____
5. What two genetic diseases where first identified here? _____
6. At birth and throughout an Icelanders life medical records are _____.
7. What problems have they had with the Icelandic Genetics law? _____
   _____
   _____
8. Read "Endangered Health insurance?" and answer the questions in essay form. _____
   _____
   _____
   _____
   _____

Something You Can Try

Read page 15, decode the 5 different DNA sequences. Write the decoded sentences below.

_____

Mutation 1: _____

Mutation 2: _____

Mutation 3: _____

Mutation 4: _____

Expand Your Knowledge

Recreate the chromosome trading card is the space provided.