Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hr: \_\_\_\_\_

# Greatest Discoveries with Bill Nye: Genetics

**#1- Laws of Inheritance**

1. Mendel noticed that when he crossed a round pea and a wrinkled one, the offspring were \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Mendel’s factors are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**#2- Genes are Located on Chromosomes**

1. *Dropsphila melanogaster* is known as the common \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Human females have 2 \_\_\_\_\_ chromosomes, while human males have 1 \_\_\_\_\_ and 1 \_\_\_\_\_ chromosome.
3. Morgan was awarded the Nobel Prize for Medicine in the year \_\_\_\_\_\_\_\_\_.

**#3- Genes Control Biochemical Events**

1. Mold is easy to grow and has simple nutritional need: \_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, & \_\_\_\_\_\_\_\_\_\_\_\_.
2. Beadle and Tatum’s breakthrough is known as: “The One \_\_\_\_\_\_\_\_\_\_\_\_\_, One \_\_\_\_\_\_\_\_\_\_\_\_ Hypothesis”.

**#4- Transpososns**

1. Which woman became one of the most distinguished scientists of the 20th century?
2. A break in the chromosome occurred when a \_\_\_\_\_\_\_ randomly \_\_\_\_\_\_\_\_\_\_\_\_ from one chromosome to another.
3. Which basketball hero has a transposon named for him?
4. When did Barbara McClintock finally win a Nobel Prize for Medicine?

**#5- DNA Carries Genetic Material**

1. Bacteriophage consists of a protein shell and \_\_\_\_\_\_\_\_\_\_.
2. Hershey was awarded the Nobel Prize in \_\_\_\_\_\_\_\_\_\_.

**#6- The Double Helix**

1. DNA was composed of 4 bases represented by the letters: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, & \_\_\_\_\_
2. Watson & Crick used the X-Ray of a DNA molecule taken by \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_.
3. What did Rosalyn Franklin die of?

**#7- Messenger RNA**

1. Scientists found that cells with lots of protein production contained lots of \_\_\_\_\_\_\_\_\_.

**#8- The Genetic Code**

1. How many amino acids are involved in the production of proteins?
2. Every living thing has the same \_\_\_\_\_\_\_\_\_\_\_\_.

**#9- Restriction Enzymes**

1. The breakthroughs that led to these greatest discoveries would not have happened if not for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. With restriction enzymes, scientists had a pair of molecular \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_ DNA molecules.

**#10- RNA Alternative Splicing**

1. Some genes are able to code for more that 1 \_\_\_\_\_\_\_\_\_\_.

**#11- Minisatellite DNA**

23. Alec Jeffries called these repeated sequences \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DNA.

**#12- RNA Interference**

24. In 1997, Fire and Mellow were injecting RNA into the cells of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**#13- 25,000 Genes**

25. The human DNA genome is made up of \_\_\_\_\_\_\_\_\_\_\_\_\_ genes.