**Mutation Video Worksheet**

**Video:** <https://www.youtube.com/watch?v=DlhpvcgK_28>

***Point Mutation Video***

1) Humans have over \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ genes.

2) All living things arose from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3) Point mutations affect\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ pair of nucleotides.

4) They often occur when the cell is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

5) Every child born has roughly \_\_\_\_\_\_\_\_\_\_\_ point mutations.

6) What usually takes care of negative mutations?

7) Can there be positive point mutations?

8) One mutation in bacteria replaced an A with a \_\_\_\_\_. These bacteria were able to reproduce \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than normal bacteria.

9) A mutation in salmonella caused them to be able to detect and eat the rare sugar \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

10) A mutation on the gene \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ produces a protein that gives dogs long fur. This mutation changed a \_\_\_ to a T.

11) Cane \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ produce a milky toxin that kills animals that try to eat it.

12) Some snakes and lizards have a point mutation that affects a \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_, making them resistant to toad toxins.

***Gene Duplication Video***

<https://www.youtube.com/watch?v=G4VINRUe_o4&t=367s>

1) A gene is a long stretch of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that codes for a protein.

2) Duplication events occur when a stretch of DNA is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3) Sometimes, entire \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ can be duplicated.

4) Further mutations can then occur in the new gene, giving rise to information that makes new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with new functions.

5) In dachhunds, a gene called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ was copied and inserted elsewhere in their DNA, giving them short legs.

6) A gene duplication in monkeys, led to a type that only eats \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. The mutation occurred in a gene that produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

7) A mutation in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gene resulted in the production of snake venom. This protein causes blood to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.