**GENETICS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

“Father of Genetics” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3 Principles of Heredity**:

**Nature vs. Nurture**

What is “nature” ?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is “nurture”?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name 3 diseases that are affected by nature AND nurture:

1)

2)

3)

How can nature vs. nurture be studied? \_\_\_\_\_\_\_\_\_\_\_

**Tall (T) or Short (t)**

**If “genotype” is Tt**

**“phenotype” is TALL**

**WHEN does segregation happen?**

**T**

**t**

1)

2)

3)

**IMPORTANT TERMS!!!**

|  |  |  |
| --- | --- | --- |
| **Term** | **Example** | **Definition** |
| Dominant | T |  |
| Recessive | t |  |
| Allele | T or t |  |
| Genotype | Tt, TT, tt |  |
| Phenotype | Tall |  |
| Homozygous | TT, tt |  |
| Heterozygous | Tt |  |

What is a TRAIT? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your traits are determined by your \_\_\_\_\_\_\_\_\_\_\_\_ which is a code for the production of \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Incomplete Dominance**

Heterozygote: \_\_\_\_\_\_\_\_\_\_\_

**Co-dominance**

Heterozygote: \_\_\_\_\_\_\_\_\_\_\_

**Mendelian**

Heterozygote: \_\_\_\_\_\_\_\_\_\_\_

**The SIX paths of inheritance:**

1. M\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (A, a)

2. C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (A, B)

3. I\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

D\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (A, A’)

4. M\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (IA, IB, i)

5. S\_\_\_\_\_ - L\_\_\_\_\_\_\_\_ (XA, Xa)

6. P\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (AaBbCc)

**Polygenic**

Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NO PUNNETT SQUARE!

Explain the graph:

**Sex-Linkage**

Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sex-linked is \_\_\_\_- linked!

Female heterozygote - \_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_ show trait more often

**Multiple Alleles**

Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **Blood Type (Phenotype)** | **Possible Genotypes** |
| Type A |  |
| Type B |  |
| Type AB |  |
| Type O |  |

Skin color

Number of individuals

Individuals