

Table of Contents

| <u>Date</u> | <u>Assignment</u> | <u>Pg #</u> |
|-------------|--|-------------|
| 12/16/16 | Cell Exam Corrections <i>Genetics</i> | 27R |
| 1/4/17 | DNA Extraction Lab | 28R |
| 1/6/17 | Discovering DNA | 29R |
| 1/10/17 | DNA Notes | 30R |
| 1/12/17 | Trait Inventory | 31R |



WHAT ARE YOUR TRAITS?

Trait Inventory Log



Catalyst: Look closely at the picture, list the characteristics you observe about Louis, Crista and Cynthia.

Trait Inventory

1/12/17

31L

31R

Trait Inventory

1/12/17

Catalyst: Look closely at the picture, list the characteristics you observe about Louis, Crista and Cynthia.



Traits

- Some are inherited
 - Similar to those that your parents have
 - Hair color
 - Eye color
 - # of legs
 - # arms
- Some are aquired
 - You develop them over your lifetime
 - Language
 - Reading & writing
 - Riding a bike

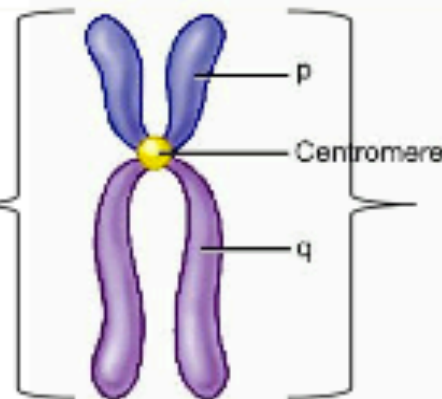


Traits are controlled by genes

- Genes are located on your chromosomes
- Individuals inherit genes from their parents.
- Your cells contain 23 chromosome pairs (called homologs) –



You received half of each homolog from your mother



You received half of each homolog from your father

- You are literally half your mother and half your father!

Alleles interact to produce traits

- **Phenotype** describes the physical characteristic that is displayed by your genes; observable (eye color, hair color)



- **Genotype** describes the actual genes that you have on your DNA; not always obvious



Two forms of every gene

- Mendel found that we have two copies of each allele (one from mom, one from dad)
- Alleles can be



Dominant

- Physically expressed regardless of what other allele it is paired with
- Always expressed as a capital letter (T)
- Ex: tallness is the dominant trait for pea plant height

OR

Recessive

- Physically expressed only when paired with another recessive allele
- Always expressed as a lower-case letter (t)
- Ex: dwarfism is the recessive trait for pea plant height

Catalyst: Look closely at the picture, list the characteristics you observe about Louis, Crista and Cynthia.

Reflection:

Reflection:

Trait Inventory

1/12/17

| Class Traits | | | | | | | |
|--------------|------|-------|------|----|------|---|---|
| Tongue | Ear | thumb | Wido | ws | peak | | |
| rol | No | Fr | atta | b | stra | y | n |
| l | roll | ee | che | e | ight | e | o |
| | | | d | nt | | s | |
| # | | | | | | | |
| 9 | | | | | | | |

Class Traits

| | Tongue | | Ear | | thumb | | Widows peak | |
|---|--------|---------|------|----------|-------|----------|-------------|----|
| | roll | No roll | Free | attached | bent | straight | yes | no |
| # | | | | | | | | |
| % | | | | | | | | |

DOMINANT VS RECESSIVE

Gene: A section of DNA that codes for a trait

Dominant:

Recessive:



HAND CLASPING

| Trait | Strength |
|--------------------|-----------|
| Right Thumb on top | Recessive |
| Left Thumb on top | Dominant |



Left Thumb

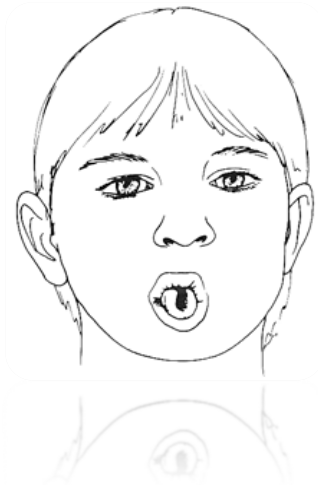


Right Thumb



TONGUE ROLLING

| Trait | Strength |
|--------------------|-----------|
| Cannot roll tongue | Recessive |
| Can roll tongue | Dominant |



EARLOBES

| Trait | Strength |
|----------------------|-----------|
| Attached earlobe | Recessive |
| Hanging free earlobe | Dominant |



Attached earlobe

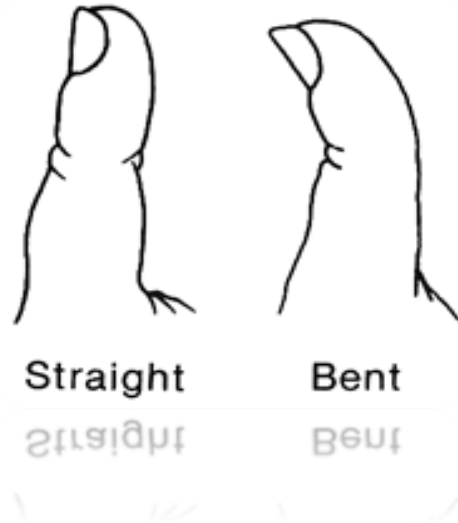


Unattached earlobe



HITCH-HIKERS THUMB

| Trait | Strength |
|----------------|-----------|
| Bent Thumb | Recessive |
| Straight Thumb | Dominant |



WIDOW'S PEAK

| Trait | Strength |
|--------------------|-----------|
| Straight hair line | Recessive |
| Point in hair line | Dominant |



Catalyst: Look closely at the picture, list the characteristics you observe about Louis, Crista and Cynthia.

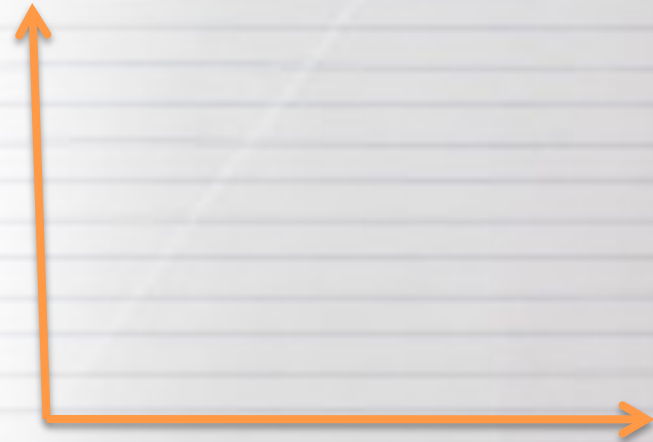
Reflection:

Reflection:

31L

Trait Inventory

1/12/17



| Class Traits | | | | | | | |
|--------------|------------|----------|--------------|----------|--------------|-----------------|----|
| Tongue | | Ear | | thumb | | Widow s peak | |
| roll | No roll | Fr ee | attac hed | be nt | strai ght | ye s | no |
| # | | | | | | | |
| % | | | | | | | |

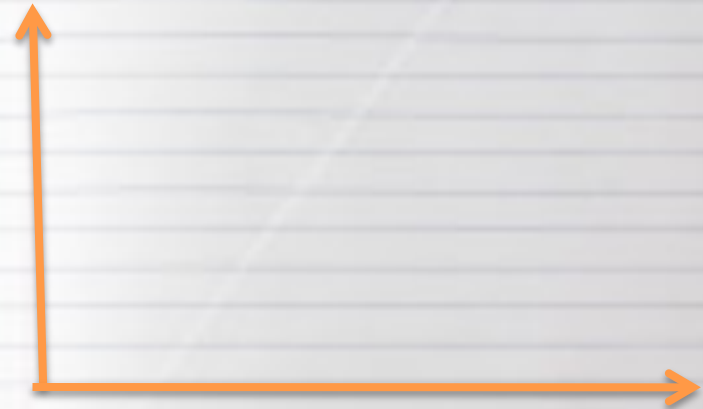
Catalyst: Look closely at the picture, list the characteristics you observe about Louis, Crista and Cynthia.

Reflection: Does the trait from a dominant gene occur more frequently than the trait from the recessive gene? Explain.

31L

Trait Inventory

1/12/17



Class Traits

| Class Traits | | | | | | | |
|--------------|---------|------|----------|-------|--------------|-----|----|
| Tongue | | Ear | | thumb | Widow's peak | | |
| roll | No roll | Free | attached | beant | straight | yes | no |
| # | | | | | | | |
| % | | | | | | | |