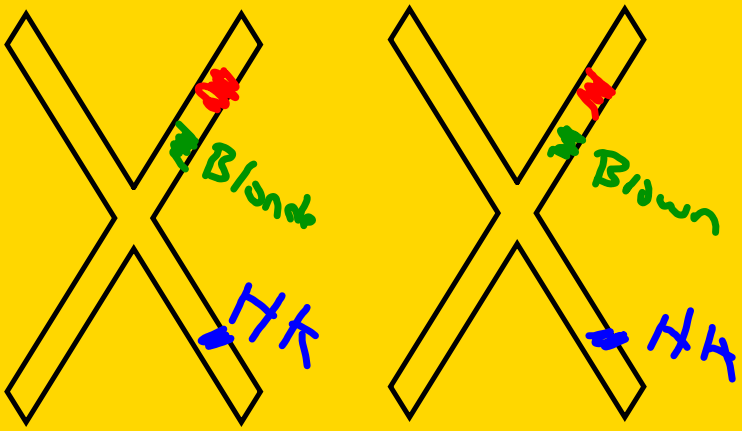
All twins are clones, but not all clones are twins. (From Clone age Video)

-Clones are genetically identical, meaning they have the exact same DNA (So does Twins) (Genetic replication of an organism)

- Twins are born at the same time and live through similar situations so this in turn effects their behavior and in most cases they act very similar.

- Clones can be born 10-20 years apart and can act very different since they are brought up in different decades. Different environmental factors can change their behaviors.

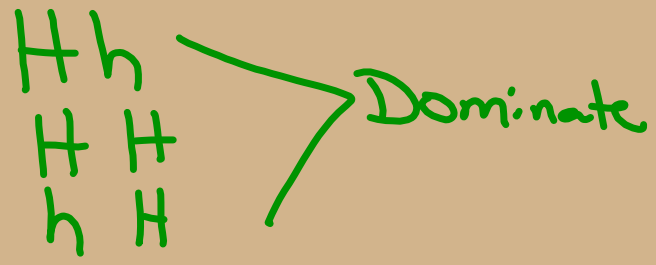
Gene:
A part on the chromosomes that holds the information for a trait. Remember, you get one gene from your mother and one from your father.



Each chromosome in the pair contains genes for the same biological features, such as eye color, at the same locations on the chromosome. However, each can contain either the same allele (e.g., both alleles for blue eyes) or different alleles (e.g., one allele for blue eyes and one allele for brown eyes) for each feature

DOMINANT:

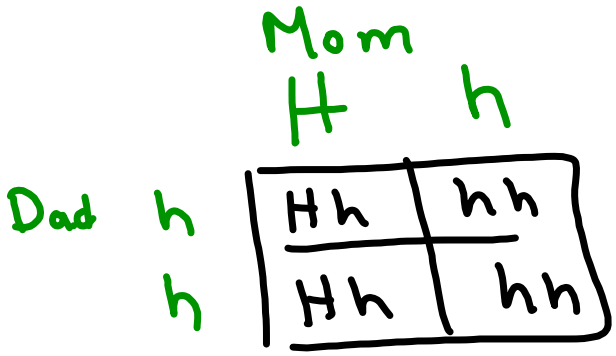
When a DOMINANT gene is present, it is expressed.

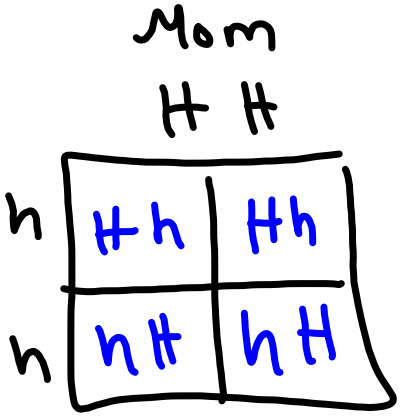


Recessive: hh

Can only be expressed when there is no DOMINANT gene.

	DOMINANT TRAITS	RECESSIVE TRAITS
eye coloring	brown eyes	grey, green, hazel, blue eyes
vision	farsightedness	normal vision
	normal vision	nearsightedness
	normal vision	night blindness
	normal vision	color blindness*
hair	dark hair	blonde, light, red hair
	non-red hair	red hair
	curly hair	straight hair
	full head of hair	baldness*
	widow's peak	normal hairline
facial features	dimples	no dimples
	unattached earlobes	attached earlobes
	freckles	no freckles
	broad lips	thin lips
appendages	extra digits	normal number
	fused digits	normal digits
	short digits	normal digits
	fingers lack 1 joint	normal joints
	limb dwarfing	normal proportion
	clubbed thumb	normal thumb
	double-jointedness	normal joints
other	immunity to poison ivy	susceptibility to poison ivy
	normal pigmented skin	albinism
	normal blood clotting	hemophilia*
	normal hearing	congenital deafness
	normal hearing and speaking	deaf mutism
	normal- no PKU	phenylketonuria (PKU)


Mom
H h
Dad h
h
Hh hh
Hh hh


Mom
H H
h
h
Hh Hh
hH hH

Heterozygous Pair: (Hh) → H

A DOMINANT and Recessive gene.

H → Brown
h = Blue

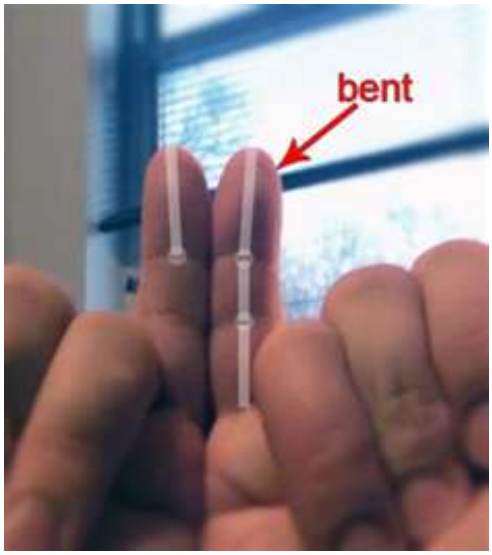
Br
↑
Bl
↑

Homozygous: (HH) or (hh)

Either two DOMINANT genes or two recessive genes.

Trait	Type	Your Trait	Number in class
Bent Pinky	(Dominant)		
Dimples	(Dominant)		
Blue Eyes	(Recessive)		
Mid-Digital Hair	(Dominant)		
Tongue-rolling	(Dominant)		
Widow's Peak	(Recessive)		
Thumb Crossing	(Dominant)		
Free Ear Lobes	(Dominant)		
Hitchhiker's Thumb	(Dominant)		

http://tami-port.suite101.com/dominant-human-genetic-traits-a38351



Size and shape

Diagram showing free (left) and attached (right) earlobes.

Genes and Heredity

Have you ever been able to identify a stranger as a member of a particular family ?

Red hair, high cheekbones, or a prominent nose can often be traced through family lineages. The observation that a young child resembles her grandmother suggest that physical characteristics are inherited. Similar observation can be made in the world of plants and animals.

ie. Flowers with white petals usually produce offsprings with whit petals

Genes and Heredity

Characteristics appear to be repeated from generation to generation.

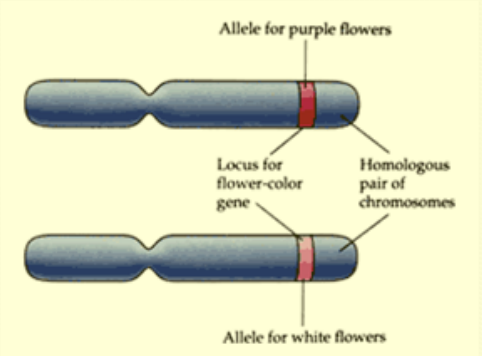
Heredity - the passing of traits from parents to offspring .

How is it possible for two parents with black hair to have a child with red hair?

Since you inherited half of your chromosomes from your mother and the other half from your father, your traits are a result of interactions of genes of both parents.

Alleles

- The different versions of genes are called alleles.
- For each gene, one allele is passed on from the father in the sperm.
- The other allele is passed from the mother in the egg.
- A chromosome contains many genes, and they occupy specific places on the chromosome.



Widow's Peak → Dominate

Mom (Heterozygous)

Dad (Heterozygous)

	H	h
H	HH w	Hh w
h	hH w	hh w w

← 25% of No widow

W → have Widow's peak

w → straight hairline

Widow's Peak

Mom (Homozygous dominant)

Dad (Heterozygous)

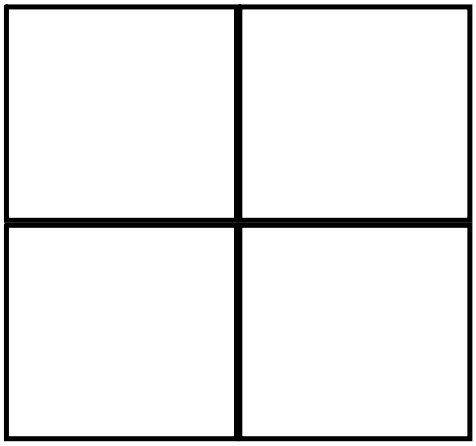
	H	H
H	HH	HH
h	hH	hH

100% widow

Widow's Peak

Mom (Homozygous recessive)

Dad
(Heterozygous)



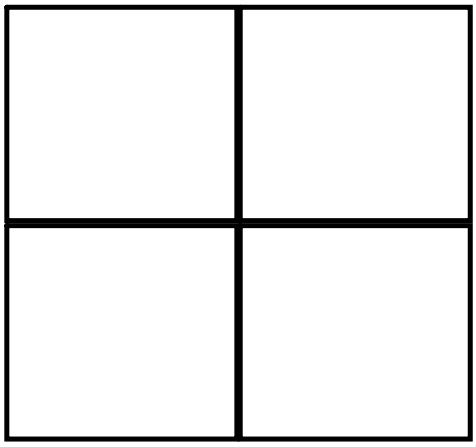
Widow's Peak

Mom

(Homozygous recessive)

Dad

ıomozygous recessive)



Video

16 min

Attachments

Biologically_Speaking__Genetics_and_Heredity.asf