

Mendelian Traits Activity

Directions: Your genes (units in the chromosomes that contain your dominant and recessive traits) have been inherited from your parents and grandparents. Below is a fun list of some common Mendelian traits. Do you have these traits? Which parent also has these traits? Complete the chart.

Mendelian Trait	D = Dominant trait; r = Recessive trait		You	Mother	Father
	D	r			
<i>Tongue Folding (r)</i> : ability to fold the tip of your tongue back upon the main body of the tongue without using your teeth	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Detached Earlobes (D)</i> : earlobes not directly attached to your head; free-hanging	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Attached Earlobes (r)</i> : earlobes directly attached to the head	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Darwin's Tubercle (D)</i> : bump of cartilage on outer rim of ear	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Hitchhiker's Thumb (D)</i> : thumb, when up in hitchhiking position, can bend backwards at a sharp angle (50% or more)	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Dimples (D)</i> : natural smile produces dimples in one or both cheeks or a dimple in the center of the chin	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Widow's Peak (D)</i> : pull hair off your forehead; hairline comes to a point in the middle of forehead	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Bent little finger (D)</i> : little finger curves in toward other fingers	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Webbing (D)</i> : spread fingers apart; grasp a thumbful of skin	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Freckles (D)</i> : circular pattern of skin coloration	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Whoof!</i> : The way the hair on the crown of your head turns—clockwise (D); counterclockwise (r)	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No
<i>Second toe longest (D)</i> : second toe is longer than the big toe	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

Apply

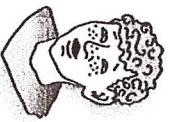
What are some of your conclusions about your Mendelian trait inheritance?

Punnett Square Activity

- Complete a Punnett square for eye color. The mother has the dominant gene for brown eyes, and her genotype is **BB**. The father has the recessive gene for blue eyes. His genotype is **bb**.

- What are the genotypes possible for their children? _____
- What percent or fraction of their children will have brown eyes? _____

- Complete a Punnett square for freckles. The mother has the recessive gene for no freckles. Her genotype is **ff**. The father has the dominant gene for freckles, and his genotype is **Ff**.



- What are the genotypes possible for freckles for their children? _____
 - What percent or fraction of their children will have freckles? _____
- Complete a Punnett square for dimples. The mother has the recessive gene for no dimples and her genotype is **dd**. The father has the recessive gene for no dimples. His genotype is **dd**.

- What are the genotypes possible for dimples for their children? _____
- What percent or fraction of their children will have dimples? _____