

Mendel's hypotheses:

1. For each inherited trait, an individual has two copies of the gene- one from each parent.

2. There are alternative version of genes called alleles.

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3. When two different alleles occur together, one of them may be completely expressed, while the other may have no observable effect on the organism's appearance.

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Dominant-

expressed
trait
(capital letters)

Recessive-

unexpressed trait
(lowercase)

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4. When gametes are formed, the alleles for each gene in an individual separate independently of each other. Thus, gametes carry only one allele for each inherited trait. When gametes unite during fertilization, each gamete gives one allele.

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Writing the traits

homozygous
dominant

RR

heterozygous

Rr

homozygous
recessive

rr

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Genotype-

genetic trait
(alleles)

Phenotype-

physical
appearance

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What is the phenotype of this child?

Characteristic	Dominant	Recessive
Dimpled cheeks	Dimples DD or Dd	No dimples dd
Tongue Roller	Roller RR or Rr	Non-roller rr
Free Earlobes	Free EE or Ee	Attached ee
Freckles	Freckles FF or Ff	Absent ff
Hair form	Curly HH or Hh	Straight hh
Widow's peak	Present WW or Ww	Absent ww

Dd Rr Ee
ff hh ww

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dd (RR, Rr)
ee
FF, Ff
HH, Hh
WW, Ww

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