

Name:

Student number/homeroom:

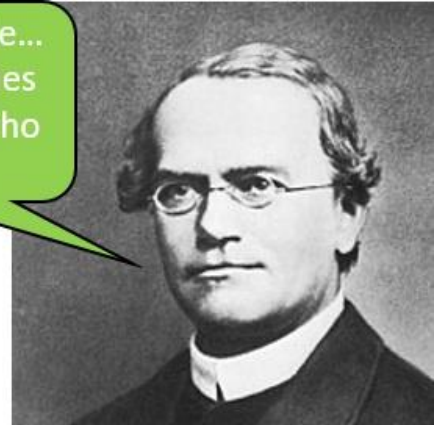
Date:

Assignment: Mendelian genetics

LO: Use Punnett squares.

SLE: Meet NGSS.

Yes, I was celibate...  
But my discoveries  
apply to those who  
are not!



*Image from Wikipedia*

For this worksheet, consider the human trait of lactose tolerance, the ability to digest lactose, a sugar found in milk and dairy products. If you are not lactose tolerant, and you consume dairy products, you experience unpleasant diarrhea, flatulence, etc.

Unlike most human traits, lactose tolerance is controlled by a single gene. This gene has 2 alleles:

- L (upper-case; dominant; codes for lactose tolerance)
- l (lower-case; recessive; codes for lactose intolerance)

For each of the following matings below, list the possible genotypes and phenotypes and the probability of an offspring being of each type. Punnett squares will help you do this, so feel free to draw them in the extra space provided. Note: probabilities should add up to 100%

(1)

Dad's genotype = ll; Dad's phenotype =

Mom's genotype = ll; Mom's phenotype =

Possible genotypes of offspring, with probabilities of each:

Possible phenotypes of offspring, with probabilities of each:

(2)

Dad's genotype = Ll; Dad's phenotype =

Mom's genotype = Ll; Mom's phenotype =

Possible genotypes of offspring, with probabilities of each:

Possible phenotypes of offspring, with probabilities of each:

(3)

Dad's genotype = ll; Dad's phenotype =

Mom's genotype = Ll; Mom's phenotype =

Possible genotypes of offspring, with probabilities of each:

Possible phenotypes of offspring, with probabilities of each: