

Genetics Wheel

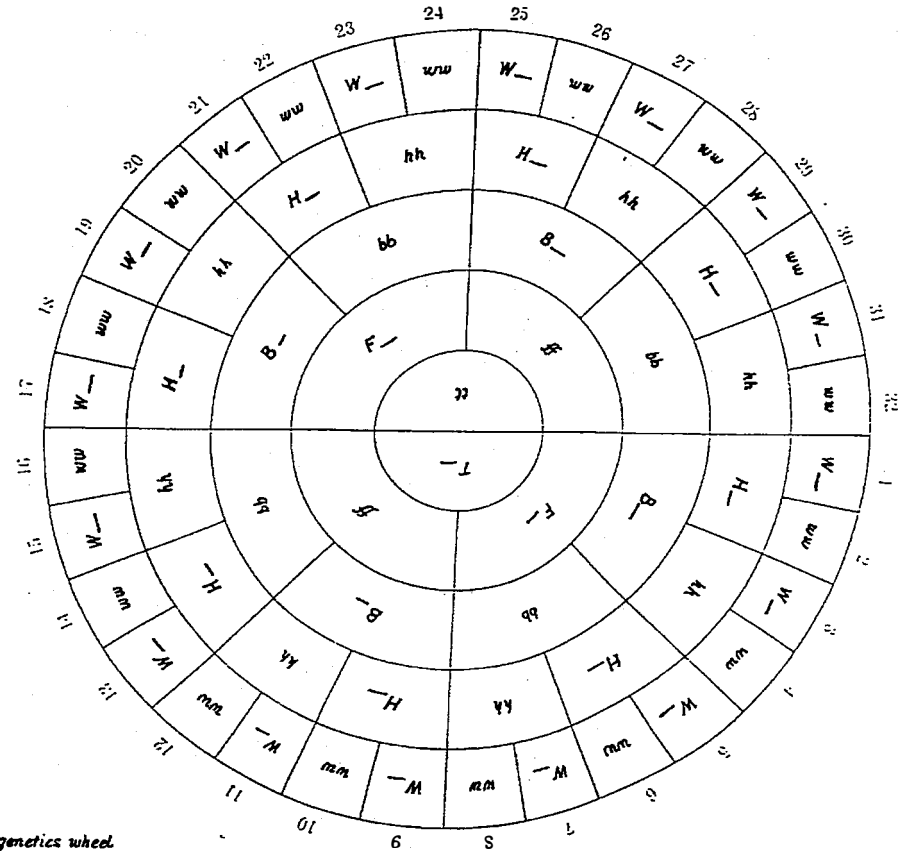
Five characteristics that are controlled by single pairs of alleles are described below:

- Tounge rolling** is the ability to roll your tongue, longitudinally. The ability to roll your tongue (T) is dominant to the inability to roll your tongue (t).
- Ear lobes attached** (f) to the side of your face are a recessive feature, while free ear lobes (F) are a dominant feature.
- A **bent little finger** (B) is dominant to a straight little finger (b). Hold your hands out in front of you with fingers spread to check.
- Middle digit hair** hair occurring on the back of the middle segments of your fingers. The presence of hair on this segment on one or more fingers (H) is dominant to the lack of hair (h).
- Widow's peak**. Have your partner look at the hairline of your forehead. A widow's peak occurs if the hairline comes to a peak in the centre of the forehead. The Widow's peak condition (W) is dominant to a straight or a curved hairline (w).

List you and your partner's results in the table below.

	Tongue Rolling	Ear Lobes	Bent Finger	Mid-digit Hair	Widow's Peak
YOU					
PARTNER					

Using the genetics wheel diagram, **start at the centre of the wheel** and **shade the genotype that applies to yourself** (eg. shade in either tt or T-). Codes such as T- represent the dominant genotype because it is difficult to determine whether you are homozygous TT or heterozygous Tt. From the shaded area move into the adjacent area and shade the next genotype that applies to yourself. Continue this process for the five features.



A genetics wheel.

QUESTIONS

- What number did you reach on the outside of the wheel?
- How many other students in your class reached the same number as you?
- What was the most common number in your class?
- Only 5 features were considered here. If more features were considered do you think that many students would be on the same number? WHY?
- When are two people likely to find that all characteristics are the same?