Name _____ Date _____

Activity: Self-Classification According to Inherited Traits

Background 1. In this lab, we will examine our own bodies for the presence of Mendelian traits (determine our phenotype); then we will approximate our genotype by comparing our observations to a chart of physical characteristics.

To Do 2. Classify yourself with respect to the traits listed in Table 1, by indicating in the column marked ME, for each trait, the first two pairs of symbols (homozygous dominant or heterozygous) or the third symbol (homozygous recessive). See Figure 1 for depictions of these traits.

Table 1. Trait, Genotypes, and Variations

Trait	Phenotype	ME	Genotype
1. Hair color	brown, black, or red hair		**LL** or **Ll**
	blond hair		**ll**
2. Hair type	naturally curly		**TT** or **Tt**
	naturally straight		**tt**
3. Tongue curling	can curl tongue		**CC** or **Cc**
	cannot curl tongue		**cc**
4. Mid-digital hair	hair present, middle digit of finger		**MM** or **Mm**
	hair absent, middle digit of finger		**mm**
5. Pigmented iris	eyes not blue		**EE** or **Ee**
	blue eyes		**ee**
6. Widow's peak	peak in center of hairline		**WW** or **Ww**
	no peak in center of hairline		**ww**
7. Bent finger	little finger curves toward others		**BB** or **Bb**
	little finger straight		**bb**

Background Here are some things to know about these traits.

3. A **dominant allele** will be expressed if it is **homozygous** (that is, occurs with another dominant allele of the same type, such as **LL**) or if it is **heterozygous** (that is, it occurs in combination with a recessive allele, such as **Ll**).

4. A **recessive allele** is expressed when it is paired with another recessive allele of the same type (such as **ll**), but it is masked when combined with a dominant allele (such as in **Ll**).

5. Why can't you differentiate between a **homozygous dominant** or a **heterozygous dominant** pair of alleles (e.g. **LL** / **Ll**)? How might you be more certain of the genotype?

Figure 1. Phenotypes and Genotypes