I CAN explain how inherited traits are passed from generation to generation and how they are different than learned traits.

**GENE MONSTER LAB INSTRUCTIONS**

* **You are a scientist that breeds monsters. You have been hired by a movie producer to breed the perfect monster family that will star in the newest Monsters, Inc movie. You have to use your skills of genetics to create an adult monster, which will breed with another monster and create a baby monster.**
* **In this lab we will learn about some of the ways traits are passed from parents to their offspring.**

1. Genes come in pairs. An individual (including a gene monster) gets one gene in each pair from each parent. Parents, of course, also have genes in pairs. Which gene from each pair a parent passes on to a child is determined by random chance; there is an equal chance that a parent will pass on either gene. In this lab, in order to determine which gene is passed on by each parent, we will flip a coin.

2. On the page labeled “Your Monster,” for each of the pairs of letters representing the genotype of “Papa Monster,” flip a coin. If heads comes up, circle the left hand letter; if tails comes up, circle the right hand letter. Transfer the circled letter (capital or lower case) to the left hand blank in the column titled “Your Monster’s genotype.”

3. Do the same for “Mama Monster’s” genotype, transferring the letter to the right hand blank.

4. For each trait, consult the “Gene Monster Trait Chart,” and your notes, to figure out what phenotype will result from your monster’s genotype. Write that phenotype in the appropriate blank in the column entitled “Your Monster’s phenotype.”

5. Next mate your monster with another monster of the opposite sex. Do this by listing your monster’s genotypes on the page titled “Baby Monster,” in the column headed “Your Monster’s genotype.” List its mate’s genotypes in the column headed “Mate’s genotype.” As before, determine the genes your Baby Monster will receive by flipping coins. Enter them in the column headed “Baby Monster’s genotype.”

6. For each trait, determine Baby Monster’s phenotype by consulting the “Gene Monster Trait Chart,” and your notes. Enter each phenotype in the column headed “Baby Monster’s phenotype.”

7. Now draw your Monster and your Baby Monster. Use your imagination, but make sure you show the phenotypes you have come up with for both monsters.

8. Don’t forget to put your name on each sheet. Don’t bother to turn in this direction sheet or the Trait Chart. Staple all other sheets together.