

DUE DATE: _____

Name: _____

PERSONAL PEDIGREE ASSIGNMENT

Class: _____

DIAGRAM OF PHENOTYPES

1. Use plain unlined paper. Place your name, period number and date at the upper right corner of the page. Place your title in the center of the page near the top of the page using the following format "PEDIGREE OF THE ___(last name)___ FAMILY, FOR THE TRAIT OF ___". You may neatly hand draw or use the computer to design your Family Trait Pedigree.

2. Survey the family for the traits of your choice. Note the family members for which the trait is different (different phenotypes). Your goal is to find one of the traits below that at least two people in the family have a different phenotype. If no such trait is found...

a) FIRST--try another trait. If no success, then ask your teacher for additional traits to check for, and/or...

b) select another family* (friend or neighbor) until differences are found.

3. Chart or diagram your selected trait using a pedigree to show an inheritance pattern. Use the proper pedigree symbols to diagram your family (or selected family*), (Indicate where you are on the pedigree chart). List on the paper if the trait is dominant or recessive. Next, show the phenotype of each person on the pedigree. Color or shade the family members with the least common phenotype. Place a "?" for each person that was not tested for the trait. Be sure to name the trait in the title:

"PEDIGREE OF THE ___(last name)___ FAMILY, FOR THE TRAIT OF ___".

B. PATTERN RECOGNITION

4. If both parents have the same phenotype, and they have at least one child with the different phenotype, then the parents' phenotype must be dominant and that child's phenotype must be recessive. If you see this inheritance pattern in your pedigree, circle that pattern-portion of your pedigree, and point out the pattern, with a label, saying "this shows that is dominant and is recessive".

5. If the dominant/recessive status is not revealed by the tell-tale pattern described above (#4), say this clearly on your paper, and...

a) indicate the dominant/recessive status based on another source of information, and give that source on your paper (e.g.our text, McKusick, OMIM, or Scheinfeld, etc.), or, ...

b) if trait is not in one of these references, assume tentatively that the least common phenotype is recessive, and say this on your paper as the reason for your assumption.

C. GENOTYPE DESIGNATION

6. Assign letters appropriately for each allele (define each letter on your paper), then show the genotypes clearly for all individuals in the pedigree wherever possible, and as completely as possible, even for those not checked. Assume the trait is not sex-linked unless you have good reason to know, or evidence to show, that it is. Use letter for which the capital and lower case forms are clearly different. Avoid C, J, K, O, P, S, U, V, W, X, Y, Z.

7. Indicate the probable phenotypes, wherever possible (based on genetic analysis) for any individuals not checked directly, and point out those individuals clearly as "non-checked, but would probably be..."

HUMAN TRAITS KNOWN TO BE INFLUENCED BY HEREDITY

Eye color: pigmented (brown/hazel/green) vs non-pigmented (clear blue)	
Ear lobes: attached vs unattached	Blood type: A/B/AB/O
PTC tasting: taster vs non-taster	Color blindness
Mid-digital hair: present vs absent	Hair shape: straight vs curly
Tongue-curling: curler vs non-curler	Handedness: right vs left
Hair whorl: clockwise vs counter-clockwise	Cleft chin: present vs absent
White forelock: present vs absent	Asparagus-urine: odor vs no odor

Any known distinctive family trait or tendency (e.g. twins, webbed toes, etc.) or disease tendency (e.g. diabetes, heart disease, hypoglycemia, etc.) If "twins", distinguish "monozygotic" [one zygote] from "dizygotic" [two zygotes].

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* If your family is not entirely biologically related to you (adopted, remarriage, etc.), or if it is very small, you may select another suitable family (neighbor, or friend's family). You may use the family of another biology student ONLY if you trace a different trait in that family. YOU MAY NOT USE THE SAME TRAIT! The family should be as large as possible, with as many relatives as possible. However, you could get by with only 2 parents and one child!