Family Pedigree Project

Project Overview: How many times have you heard from a relative, "You look just like your Uncle Joe?" Or you might hear, "Your grandfather had the same nose as you." It's obvious to us that traits are passed down from generation to generation. A pedigree is like a map that shows how traits are distributed through a family's generations.

In this project, you will create four different pedigree charts for at least ten members of your own family. You will chart the passing of four different traits for three generations of your family. Clearly indicate and label the traits you are tracing. You will need a key on each pedigree chart. Use the letters below to indicate a particular allele (upper case letters for the dominant allele and lower-case letters for the recessive allele). For example, for tongue rolling, use the letter "R" for family members who can roll their tongue and "r" for family members who cannot roll their tongue (use different letters for different traits).

You will need to ask questions of your parents, grandparents, or any other family member with an in-depth knowledge of your family tree. You can use your creativity in the design of the pedigree chart, but proper pedigree symbols must be used. (See Pedigree Notes handed out in class)

Pedigree requirements:
I.   Choose 4 traits to investigate in your family (thus, you will turn in four different pedigree charts - each   on a separate sheet of paper).
II.   Each pedigree should contain at least 10 people (if you have a small family or several unknowns you will need to do more than 4 traits – see me for the modifications).
III.   Each pedigree should go back at least 3 generations. (Grandparents, Parents, and you)
IV.   Each pedigree should be on an 8.5 x 11 in. piece of paper (no bigger).
V.   Each pedigree should have a key; use appropriate pedigree symbols.
   * Also note for each individual:
      A. Genotype
      B.   Phenotype
      C.   Name of relative

List of possible traits: (choose four)
Tongue rolling (RR or Rr = roller, rr = non-roller)
Attached earlobes (EE or Ee = unattached, ee = attached)
Mid-digital hair [hair between the first two knuckles] (MM or Mm = hair, mm = no hair)
Hitch-hiker's thumb (TT or Tt = hitch-hiker, tt = non-hitch hiker)
Widow's peak (WW or Ww = widow's peak, ww = no widow's peak)

Dimples (DD or Dd = present, dd = no dimples)
Freckles (FF or Ff = present, ff = no freckles)
Hair texture (HH = curly, Hh = wavy, hh = straight)
Chin Cleft (CC or Cc = no cleft, cc = present)
(if there is another trait you would like to do – please see me)
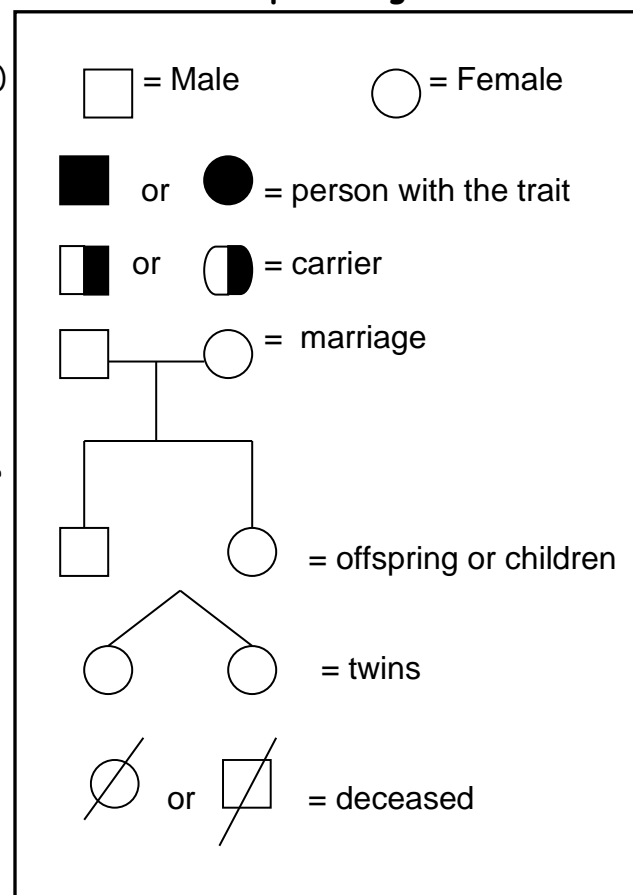

Analysis:

Finally, you will need to type a 1–2-page analysis (Times New Roman font, 12 pt. font, one-inch margins, double spaced) detailing the process of creating your pedigree chart. You should discuss successes and problems encountered in creating the chart as well as any surprises or discoveries made during the process. A paragraph or more should be devoted to analyzing the genetic traits of the relatives on the chart. What patterns related to genetics and inheritance do you see in your chart? Finally what hypotheses and/or conclusions can you draw from examining your genealogical data?

Possible traits:

Trait	Dominant	Recessive
Eyelash length	long (1 cm or more)	short (less than 1 cm)
Widow's peak	widow's peak	straight hairline
Dimples	Dimples	No dimples
Freckles	Freckles	No freckles
Ear lobes	Free ear lobes	Attached
Hair	Hair on middle digit	No hair on middle digit
Roman nose	Roman nose (bent)	straight nose
Toe length	2nd toe longer	Big toe longer
Hand use	Right-handed	Left-handed
Tongue roller	Tongue roller	Non-tongue roller
Height	Short	Tall
	Females: less than 5'7	5'7 or above
	Males: less than 5'10	5'10 or above
Curved Thumb	Hitchhiker thumb	Straight Thumb
Cleft Chin	No cleft Chin	Cleft Chin

Sample Pedigree

☐ = Male   ○ = Female

■ or ● = person with the trait

◧ or ◖ = carrier

☐ ○ = marriage

= offspring or children

= twins

⊘ or ⧄ = deceased

Grading Guidelines and Rubric for Family Pedigrees and Analysis

Please turn this sheet in with your brochure and works cited page!

Name: _____

4 Traits analyzed in pedigrees:
_____   _____   _____   _____

Grading of this project will be based upon four main topic areas:

I. Pedigrees (60 pts)
 A. 4 traits investigated in your family (thus, four different pedigrees).
 B. Each pedigree should contain at least 10 people (unless you have seen me for the modifications).
 C. Each pedigree goes back at least 3 generations.
 D. Each pedigree should be a full 8.5 x 11 inches (no bigger).
 E. Each pedigree should have a key; use appropriate pedigree symbols.
 Also note for each individual:
  A. Genotype
  B. Phenotype
  C. Name of relative

II.   Analysis (26 pts)
 A. must be proper format
  1. Times New Roman font, 12 pt. font, one inch margins and double spaced
  2. proper spelling and grammar
 B. must contain proper information
  1. successes and problems encountered in creating the chart
  2. surprises or discoveries made during the process
  3. A paragraph or more should be devoted to analyzing the genetic traits of the relatives on the chart (What patterns related to genetics and inheritance do you see in your chart?)
  4. What hypotheses and/or conclusions can you draw?

III. Works cited page / Title page (4 pts)
 A. List names of family members interviewed, whether or not photographs were used, etc.
 B. Must be typed
 C. Must be on a separate sheet of paper
 D. Title page with Your Name on the front & stapled

IV. Overall quality of work and effort put forth (10 pts)

Point breakdown:

Topic	Possible	Earned
1. Pedigrees	60	_____
2. Analysis	26	_____
3. Works Cited	4	_____
4. Overall	10	_____
Total	100	_____