

Essential Question: How do living things inherit their genetic characteristics?

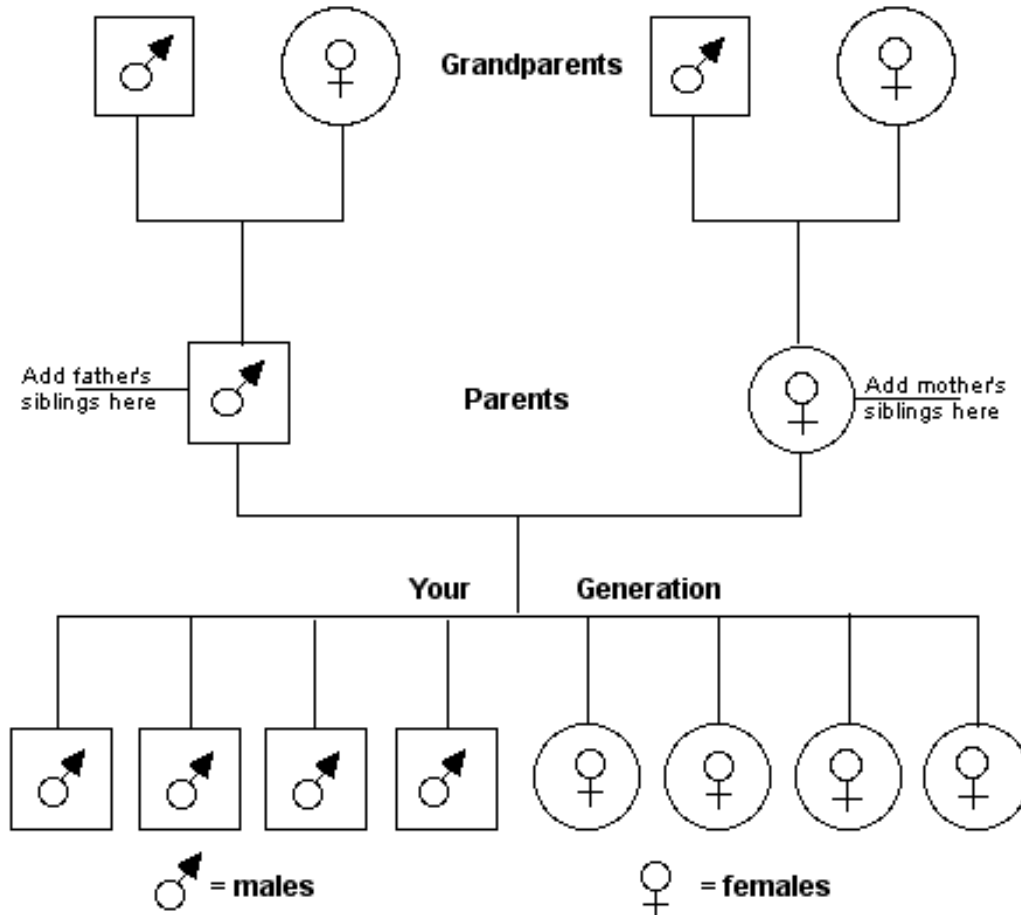
Activity 1 – Your Eye Color Pedigree

Purpose:

- To be able to **describe** how offspring differ from the parents due to receiving **genetic information** from both parents through **sexual reproduction**.
- To be able to **predict** the outcome of specific **genetic** crosses using the **principles of Mendelian** genetics.

INSTRUCTIONS:

1. Your first mission is to go home and document the eye color of your entire family back through your grandparents. Do your research talk to your parents and call your grandparents!



2. Then color your relative's eye colors, or **phenotypes**, in the appropriate square or circle below.
3. Wait until instructed to move on. Then determine the **genotype** of each family member. Use your vast knowledge of genetics to help you write the appropriate genotype under every family member's symbol.
4. **Possible genotypes**

Brown, Hazel or Green = BB or Bb

Blue = bb

- **Note:** Please add or cross off circles and squares as necessary to show your family composition.
- **Also, show blood relatives only.**

- Strategies to solve pedigree problems:
1. Look to see if the trait skips a generation, if so it's usually a recessive trait
 2. See if the trait appears more over all, if so it's usually, but not always a dominant trait.
 3. Guess and Check based upon 1 & 2 above and....
 4. Work down through the generations and also back up through the generations to check.

Actually Eye color is much more complicated than this model. However, it is a good starting place to learn basic genetics. If you'd like to read the whole story go to: <http://genetics.thetech.org/how-blue-eyed-parents-can-have-brown-eyed-children>