Puzzle #4

**Background**: Falconi anemia is a disease that affects the bone marrow in humans, which is responsible, among other things, for making new blood cells. People with normal alleles do not have anemia, however those with anemia have slow growth, heart defects and possible bone marrow failure which leads to Leukemia.

**Pedigree:** The Frankenstien family carries this disease and some of the members have Falconi Anemia. George is a carrier and is married to Arlene who has Falconi Anemia. They have four children, Tom and Wilma, who also have the disease. The other two, Sam and Ann, do not have it. Ann marries Michael and their daughter, Carla, has the disease. Tom marries Sandra and they have two children, David and Allan.

Use the gummy bears in bag 4 to create a pedigree for this family following the trait of Falconi Anemia.

* Green represents affected (Falconi Anemia) individuals.
* Red represents unaffected individuals.
* Carriers do not have the disease.

Draw this pedigree in your notebook and answer the following questions using complete sentences:

1. Write the names for each person on the pedigree and include their genotype.
   1. Use “F” for dominant alleles and “f” for recessive.
2. Is Falconi Anemia a dominant or recessive disorder? How do you know?
3. How many carriers are in the family?
4. Is Falconi Anemia sex-linked? How do you know?
5. If George also had the disease, how would that change the pedigree?