Puzzle #2

**Background**: Albinism is a condition in which there is a mutation in one of several possible genes, each of which helps to code for the protein melanin. This gene is normally active in cells called melanocytes, which are found in the skin and eyes. Albinism involves a decrease in, or absence of melanin. This gives the affected individual a lack of normal coloration in skin and eyes. Normal melanin protein is produced by a dominant allele (M). Albinism results from a lack of melanin and is caused by a recessive allele (m).

**Pedigree:** Two normally-pigmented parents have 3 children. The first, a girl, and their second child, a boy, have normal pigmentation. Their third child (a girl) has albinism. That girl marries a normally pigmented male and they have four children. The first three (two girls and a boy) have normal pigmentation. Their fourth child, a girl, has albinism like her mother.

Use the gummy bears in bag 2 to create a pedigree for this family following the trait of Albinism.

* Green represents unaffected (do not have it) individuals.
* Orange represents affected individuals (with albinism).

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

1. Is Albinism a dominant or recessive trait? How do you know?
2. How many carriers are in this family and who are they?
3. If both parents were albino, how could that change this pedigree?
4. Is albinism a sex-linked trait? How can you tell?