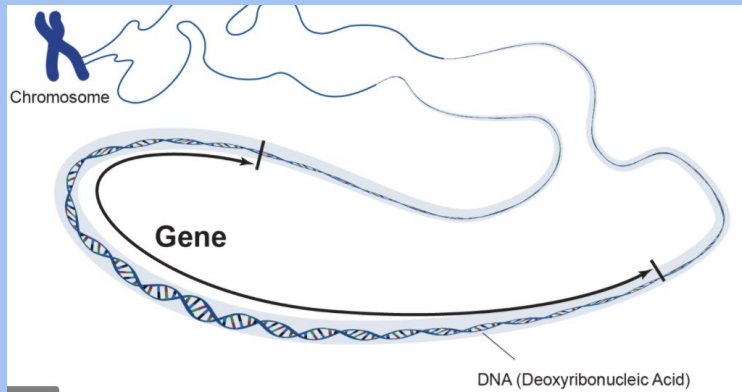
Jelly Bean Genetics

Rochester City School District School 16
University of Rochester iGEM 2020

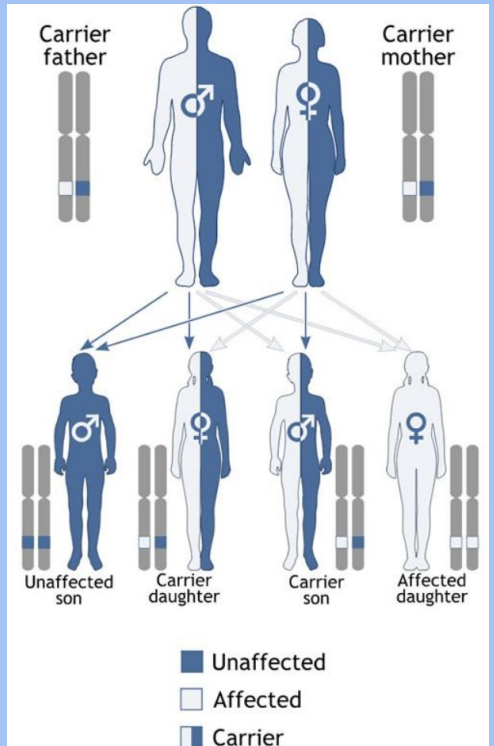
What is a gene?

A gene is a small piece of your DNA that makes up a characteristic about you! Characteristics include your hair color, your eye color, and your favorite food!



Genes are inherited!

Half from your mother and half from your father!



But what genes do you get?

It's RANDOM

Let’s start our experiment !

We need:

1. Jelly Beans
2. Black Marker
3. Plastic cups
4. Crayons

Step 1

1. Label one of your ten plastic cups with the following
    a. Grandma M
    b. Grandpa M
    c. Grandma D
    d. Grandpa D
    e. Mom
    f. Dad
    g. Kim
    h. Talia
    i. Jason
    j. Sam

Step 2

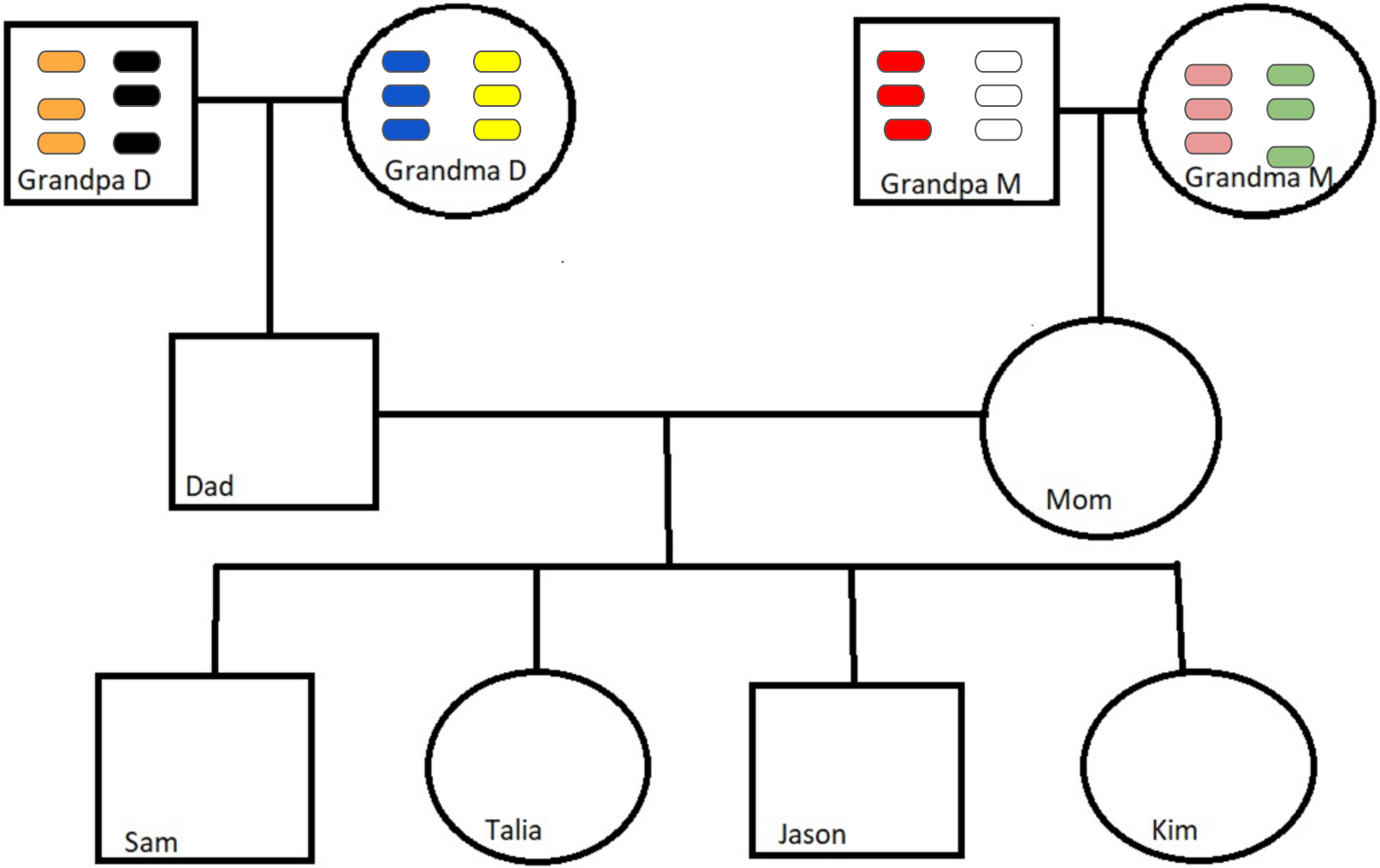
Add jelly beans to the following cups

a. **Grandma M**: 3 pink jelly beans and 3 green jelly beans
b. **Grandpa M**: 3 red jelly beans and 3 white jelly beans
c. **Grandma D**: 3 blue jelly beans and 3 yellow jelly beans
d. **Grandpa D:** 3 orange jelly beans and 3 black jelly beans

Step 3

Using crayons, draw the jelly beans for each grandparent on the Jelly Bean Genetics Activity Sheet

→ Did you notice that there are squares and circles? In science, we use a square to represent boys and a circle to represent girls!


Grandpa D
Grandma D
Grandpa M
Grandma M
Dad
Mom
Sam
Talia
Jason
Kim

Step 4

Each person must have 6 jelly beans, or genes. 3 will come from mom and 3 will come from dad. Since this occurs randomly, close your eyes and select 3 jelly beans from Grandpa M’s cup and 3 jelly beans from Grandma M’s cup. Place these jelly beans in Mom’s cup.

Step 4

Now let’s do the same for Dad!!!!

Step 5

1. Now let’s determine which genes the four siblings will get from their mom and dad. Close your eyes and select 3 jelly beans from Mom and 3 jelly beans from Dad. Place these jelly beans in Sam’s cup.
2. Using crayons, draw the jelly beans for Sam.
3. Place the jelly beans from Sam’s cup back to their original cup (either Mom or Dad’s cup)

Step 6

Now let’s repeat this for Talia, Jason and Kim!!