Activity 2: Karyotyping and Pedigree Practice (Honors)

(Topic 2—Tracking)

1. Go to the following website: <http://learn.genetics.utah.edu/content/chromosomes/>

2. Read the “How do Scientists Read Chromosomes” page under the Karyotype heading. Take notes by answering the questions below as you read:

a) List and describe the 3 key features used for identifying chromosomes.

b) Which of the 3 features do you think would be easiest to use? Why?

c) What is the main purpose of a centromere?

d) List and describe the 3 placements of centromeres.

3. Go back to the original page. Under the heading Karyotype, click on “Make a Karyotype”. Go through the tutorial, when you have completed the karyotype raise your hand to get the teacher to initial here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Go back to the original page. Under the heading Karyotype, click on “Using Karyotypes to Diagnose Genetic Disorders”. Read through the material, and take notes by answering the following questions:

a) What does it mean to be “homologous”?

b) Explain how cells get 46 chromosomes.

c) Explain the main difference between mitosis and meiosis.

d) Describe the two types of deletions and their typical results.

e) Describe the two types of translocation and their typical results.

5. Go to [www.scienceperks.weebly.com](http://www.scienceperks.weebly.com) (class website) and watch the PowerPoint lesson for Topic 5 if you have not already done so.

6. Draw a basic pedigree using the following information:

There are 13 members of family. Bob is married to Anne and they have two children, David and Katie. Bob’s sister Karen and her husband Steve have 3 daughters, Tiffany, Melissa, and Amanda. Bob and Karen have cousins Buddy, Derrick, Mary, and Janet from their Aunt Louise and Uncle Barry. David’s paternal grandfather is Fred, who is Louise’s sister. Fred is married to Norma. Fred and David are both colorblind, but Bob is not.

7. Interview your family members to construct a basic pedigree that shows relationships. Try to include at least 3 generations.