Karyotyping

1. Christine Knoell
2. Eastport south Manor Jr./Sr. High School

3 & 4. Living environment/grade 8

5. CCLS: Since there is no Common Core learning standards adapted for secondary science, I will use the (NGSS) Next Generation Science Standards which may be adapted soon. http://www.nextgenscience.org/next-generation-science-standards. NGSS: Students in high school develop understanding of key concepts that will help them make sense of life science. The ideas are built upon students' science understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts from earlier grades. There are four life science disciplinary core ideas in high school: 1) From Molecules to Organisms: Structures and Processes, 2) Ecosystems: Interactions, Energy, and Dynamics, 3) Heredity: Inheritance and Variation of Traits, 4) Biological Evolution: Unity and Diversity. The performance expectations for high school life science blend core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge that can be applied across the science disciplines. While the performance expectations in high school life science couple particular practices with specific disciplinary core ideas, instructional decisions should include use of many practices underlying the performance expectations.

6. Website location: By Carolina Biological Supply

7. Description

Learn how to Karyotype or practice your skills using simulated chromosomes. The Karyotyping app provides users with three levels to practice karyotyping individuals. The app also includes a study section, a tutorial and background information on the basics of karyotyping. The lite version of the app contains only the basic level of karyotyping and normal karyotypes in the study section.

8. In the NYS Regents Living Environment curriculum genetic disorders are addressed. Including down syndrome. The karyotyping app discuss how chromosomes are inherited and what a normal cell should have in it. The app has karyotype problems that need to be solved. This app is great to use either as an introduction or review to the various genetic disorders discussed, like Turner's syndrome and Klinefelter's syndrome. Students are able to see the homologous chromosomes and how the genes match up. This app can go in place of a paper lab that students do where they have to cut up each individual chromosome and glue it. This brings technology into the classroom and is a great app for the genetics unit.