

Online Resources:

Animations from Khan Academy

Genetics 101 Part One

http://www.youtube.com/watch?v=ubq4eu_TDFc

This 4 ½ minute video clip gives a great description of DNA, genes, and how they function in making us a unique organism. Great visuals to help students understand some key concepts for the Crime Scene Investigation Lab.

Genetics 101 Part Two

This short 2 minute video clip made by Khan Academy discusses why we humans look so different from one another even though 99.9% of our DNA is identical!

<https://www.khanacademy.org/science/biology/heredity-and-genetics/v/genetics-101-part-2-what-are-snps>

Genetics 101 Part 3

<https://www.khanacademy.org/science/biology/heredity-and-genetics/v/genetics-101-part-3-where-do-your-genes-come-from>

This 4 ½ minute video clip by Khan Academy gives a great description of how our genes are passed on to us from our parents. The content of this video is applicable to a discussion we will have on paternity testing.

Genetics 101 Part 4

<http://www.youtube.com/watch?v=kLpr6t4-eLI>

This short 2 minute video clip by Khan Academy gives a nice description of phenotypes and how they are formed through the interaction of genes and environmental factors.

Interactive Animation from University of Utah Health and Sciences

Videos that explain: heredity, a trait, DNA, a gene, a protein, and a chromosome

<http://learn.genetics.utah.edu/content/basics/>

What is DNA?

<http://learn.genetics.utah.edu/content/molecules/dna/>

What is a Chromosome?

<http://learn.genetics.utah.edu/content/chromosomes/intro/>

What is a Gene?

<http://learn.genetics.utah.edu/content/molecules/gene/>

Haploid vs. Diploid Cells

<http://www.dnalc.org/view/16238-Animation-8-Sex-cells-have-one-set-of-chromosomes-body-cells-have-two-.html>

The phases of Meiosis are used to explain the concept of haploid vs. diploid cells. You—or your students—click the arrows to go through the lesson.

DNA extraction:

This virtual lab provides a great overview of the process of extracting DNA from human cells!

<http://learn.genetics.utah.edu/content/labs/extraction/>

DNA Fingerprinting:

<http://www.youtube.com/watch?v=ZxWXCT9wVol>

This 5 ½ minute video digs a little deeper into the discovery of DNA fingerprinting.

Gel Electrophoresis:

<http://learn.genetics.utah.edu/content/labs/gel/>

<http://www.dnalc.org/resources/animations/gelectrophoresis.html>

simpler gel electrophoresis

PCR—this will only be used in AP/IB labs

<http://learn.genetics.utah.edu/content/labs/pcr/>

http://www.youtube.com/watch?v=eEcy9k_KsDI

This three minute YouTube video will take your students through the steps of the Polymerase Chain Reaction. FYI: We will be watching this short movie in the lab at CU Life Sciences Outreach Center.

DNA base pairing

In this 1 ½ minute video clip, hear from the one of the discoverers of DNA, James Watson, as he describes realizing how DNA base pairs form their bonds.

<http://www.dnalc.org/resources/3d/25-basepairing.html>