**Understanding DNA TIME:** 60 minutes total within 2-3 Days

**ESSENTIAL QUESTION:** How does DNA determine an organism’s traits?

**EXPECTATIONS:** Complete the instructions below in order. You can break it up in 20-30 minute sessions OR do as much as you prefer, then take a break. Since your goal is to be able to model where DNA is located in a cell, you need to study resources that will help this make sense. If the resources provided in the lesson don’t help you, check out the other resources below instead.

**PART 1 (20-30 minutes)**

**WARM-UP:**  Watch this quick video then answer the questions. Video Link: [**https://learn.genetics.utah.edu/content/basics/traits/**](https://learn.genetics.utah.edu/content/basics/traits/)

Answer these questions to prepare for what you’re about to learn. It’s okay not to know the answers yet. Thinking about them first helps prepare your brain for learning.

Q1: ***What do you think DNA is?***

Q2: ***When have you heard the terms "Inherited Traits”?***

**MODEL BUILDING:** Watch this video clip then draw the model below. Video Link: [**https://learn.genetics.utah.edu/content/basics/dna/**](https://learn.genetics.utah.edu/content/basics/dna/)

Draw a model of a cell and label it with the following: (Re-watch the video if you need help).

  *TERMS:* ***Nucleus, DNA, Chromosome***

**REVIEW:** Try to re-answer the questions again.

 Q1: ***What do you think DNA is?***

 Q2: ***When have you heard the terms "Inherited Traits”?***

**PART 2 (20-30 minutes)**

**RESEARCH:**  Read the “Related Reading Material” by following this link. There’s lots of tabs to click on so read at least 2 tabs or more. Article Link:[**Brainpop Related Reading Link**](https://www.brainpop.com/health/geneticsgrowthanddevelopment/dna/relatedreading/#tab=0)

**EXPLORE:** Write down 3 questions you have about DNA or genetics then follow this link to look for answers to your questions. Record them on paper or digitally. Resource Link: [**https://www.amnh.org/explore/ology/genetics**](https://www.amnh.org/explore/ology/genetics)

**WANT TO KEEP LEARNING?** Go back to the Brainpop site and try the activities or practice quiz. Activity Link:[**Brainpop DNA Link**](https://www.brainpop.com/health/geneticsgrowthanddevelopment/dna/)

**PART 3** **(20-30 minutes)**

**PRACTICE:** Follow the link and log into ***“Explore Learning”*** also known as ***“Gizmos”*** to practice modeling DNA. Use the lesson titled ***“DNA Analysis”***. Follow along the ***“Student Exploration Sheet”*** for instructions. Resource Link:[**https://www.explorelearning.com/**](https://www.explorelearning.com/)

**HINT: Login via** <https://clever.com/>. Select Active Directory and login with your KSD username and password.

Scroll down for Gizmos- Pilot link 

**REVIEW:** Take the practice quiz in the gizmo & see if you need more help.

**REVISED THOUGHTS:** Complete these reflection questions to see how much you’ve grown your learning and email your teacher a copy so they know how to help you.

 Q1: ***What was surprising about genetics?***

 Q2: ***What did you already know but see in a new way?***

 *Q3:* ***What do you still need help with?***

**FINISHED EARLY? GOT QUESTIONS? NEED DIFFERENT RESOURCES? WANT A CHALLENGE?**

**Experiment:** [**http://learn.genetics.utah.edu/content/labs/extraction/**](https://learn.genetics.utah.edu/content/labs/extraction/howto/)

**Video:** [**Bill Nye Genes on Youtube Link**](https://www.youtube.com/watch?v=H2Vw6HgMmTs) **OR** [**PBS Video Link**](https://www.pbs.org/video/dna-doesnt-look-like-what-you-think-qudzfw/)

**What does DNA REALLY look like?** [**https://genetics.thetech.org/online-exhibits/zooming-dna**](https://genetics.thetech.org/online-exhibits/zooming-dna)