

## Text Set: Danny Satterfield

<b>Text Set Title: DNA Editing</b>	
<b>Text Set Grade Placement:10-11</b>	
<b>Enduring Understandings</b>	
The development of understanding the central dogma of human DNA and how we are discovering how to manipulate the function of DNA to eradicate diseases and improve life quality in the future.	
<b>Text and Resources</b> (Indicate in what order the supporting works are to be introduced and taught.)	
<b>Anchor Text</b>	<b>Title:</b> CRISPR-Cas9 Human Genome Editing: Challenges, Ethical Concerns and Implications( <a href="https://www.omicsonline.org/open-access/crisprcas9-human-genome-editing-challenges-ethical-concerns-and-implications-2155-9627-1000253.pdf">https://www.omicsonline.org/open-access/crisprcas9-human-genome-editing-challenges-ethical-concerns-and-implications-2155-9627-1000253.pdf</a> ) <b>Author:</b> Otieno, MO
<b>Supporting Works</b>	<b>Book(s)</b> 1. Redesigning Life: How genome editing will transform the world 1st Edition  2. <b>Article(s)</b> 3.CRISPR: gene editing is just the beginning: <a href="http://www.nature.com/news/crispr-gene-editing-is-just-the-beginning-1.19510">http://www.nature.com/news/crispr-gene-editing-is-just-the-beginning-1.19510</a> 4.Genetically-modified humans: what is CRISPR and how does it work?  <b>Poem(s)</b> 1. <a href="https://pbs.twimg.com/media/BWLA14nCcAAhV5J.jpg">https://pbs.twimg.com/media/BWLA14nCcAAhV5J.jpg</a> 2. <a href="https://lh4.googleusercontent.com/--NzOnFLweos/Uw-6qWYgeBI/AAAAAAuM/kWOHhWPM7Gk/w581-h567-no/DNA+Replication-+Poem+By+Becky+G..png">https://lh4.googleusercontent.com/--NzOnFLweos/Uw-6qWYgeBI/AAAAAAuM/kWOHhWPM7Gk/w581-h567-no/DNA+Replication-+Poem+By+Becky+G..png</a> <b>Infographic(s)</b> 3. <a href="http://static2.businessinsider.com/image/56392539bd86ef135c8bbe4d-1200-1200/crispr-infographic.jpg">http://static2.businessinsider.com/image/56392539bd86ef135c8bbe4d-1200-1200/crispr-infographic.jpg</a> 4. <b>Other Media</b> 5. <a href="https://www.ted.com/talks/jennifer_doudna_we_can_now_edit_our_dna_but_let_s_do_it_wisely">https://www.ted.com/talks/jennifer_doudna_we_can_now_edit_our_dna_but_let_s_do_it_wisely</a> 6.  <b>Supporting Works will be introduced/taught in the following order:</b>
<b>Standards</b>	SPI 3210.4.9 Evaluate the scientific and ethical issues associated with gene technologies: genetic engineering, cloning, transgenic organism production, stem cell research, and DNA fingerprinting.  93210.4.7 Conduct research to explore the scientific and ethical issues associated with emerging gene technologies.

	CLE 3210.4.7 Assess the scientific and ethical ramifications of emerging genetic technologies.
<b>Knowledge</b>	<b>Skills</b>
Learners will understand how DNA functions to produce phenotypic traits in humans.	Be able to identify and analyze karyotypes to determine abnormal conditions in humans.
Learners will know what cancer is and how it impacts our lives everyday.	Analyze DNA samples to identify potential cancer gene carriers through gel electrophoresis.
Learners will know what CRISPR-CAS 9 is and how gene editing is quickly becoming a reality for our future.	Work with sample DNA strands with understanding of DNA replication, transcription, and translation and how CRISPR CAS9 is able to edit such strands.
<b>Rich, Authentic Task</b>	
Learners will work through two lab based lessons to discover how human genes work together through studying karyotypes. Additionally, learners will work through lesson on the genetics of cancer and how DNA can malfunction and cause destruction of cells and life. These two lessons will then be viewed through the lens of genetic editing through the CRISPR-CAS 9 text set.	