**Science-English “A Single Butterfly” Interdisciplinary Unit:**

**10th Grade English Short Story Unit**

**Texts & Materials: Annotated Bibliography**

**Bradbury, R. (1952). A sound of thunder. In McDougal Littel (Ed.) (2005), The language of literature: Grade 10 (pp. 72-81). New York: McDougal Littel.**

As the first of two short stories in the English section of this unit (and thus the first of two primary texts), Bradbury's "A Sound of Thunder" introduces students to the main ideas of the unit - interconnectedness, individual worth, accountability - in an lower reading level text. Therefore, use of "A Sound of Thunder" scaffolds students to the second short story, Williams’s “The Girls,” in which the main themes of the unit are embraced more complexly. While the majority of the reading will be done for homework, students will revist the text in class and close read sections in order to analyze the effects of the text's language, text structure, imagery, and characterization on the its bigger-picture themes. With a food chain described in the text conveying a main theme, the short story links to the science unit on ecosystems and allows students to use and activate their background knowledge of food chains and food webs learned in biology to make new meaning from "A Sound of Thunder."
 **Bradbury, R. & Corben, R. (2003). A sound of thunder. In The Best of Ray Bradbury (pp. 10-11). IBooks.**

Since students may have difficulty visualizing the unique setting of Bradbury's "A Sound of Thunder" because it is a composite of prehistoric and futuristic elements, two pages of this graphic novel adaptation of the short story will be used in conjunction with a video-based portrayal of the setting to provide students with a more concrete grasp of the setting and the plot elements imagined by the author (i.e. antigravity Path, sterilization of suits, time machine, etc). In terms of text, the two pages only cover the plotline that students have already read for homework, so there is not threat of plot spoilers. Students will be led into the reading by a discussion of what the antigravity Path may look like based on newly established knowledge of the Latin prefix, "anti." Students will confirm their hypotheses with the graphic novel's illustrations. The graphic novel provides a static presentation of the setting, so students can have a reference material later and use it, if needed, when they quickly sketch the scene.

**Daniels, G., McGrath, D., Cohen, D. S., & Kushell, B. (Writers), & Reardon, J. (Director). (1994). Treehouse of horror V [Television series episode]. In Mirkin, D. (Producer), *The Simpsons.* Fox Studios.**

 With a segment of this *The Simpsons* episode adapting Bradbury’s “A Sound of Thunder,” the television episode supplements the short story to modernize the classic work of science fiction for student engagement and motivation purpose and to provide students’ with more examples of chaos theory and further practice recognizing cause/effect text structure. In addition to analyzing the parody’s accuracy in alluding to Bradbury’s original, students will also focus on a key difference between Eckels and Homer Simpson to stir their thinking about the unit theme of accountability and the character relationships in “A Sound of Thunder.” Since Homer travels back in time multiple times to try to fix his original mistake and Travis (in one reading of the short story’s conclusion) deprives Eckels of that opportunity despite Eckels’s pleas to be allowed to do so, students will argue how Eckels should have been held accountable for his misstep, integrating text details from both the television episode and the short stories in their written responses. The writing assignment requires students to synthesize multiple texts to form a cohesive argument and apply a key unit term to their rationale.

    **Ghose, T. (2013). Staggering stats: Cats kill billions of animals each year. *LiveScience.* Retrieved from** [**http://www.livescience.com/26670-cats-kill-billions-animals.html**](http://www.livescience.com/26670-cats-kill-billions-animals.html)

As a nonfiction twin text for Wiliiams’s short story, “The Girls,” this *LiveScience* popular science article provides students with the information necessary to analyze whether the fiction text’s portrayal of the girls’ cats and Arleen’s statistic about cat predation is accurate. Furthermore, the article presents the idea of outdoor domestic cats being an “invasive species” – a science term students will have learned in the science section of this interdisciplinary unit. Based on Williams’s characterization of the girls and Arleen, the characters naturally fall into the opposing viewpoints in the real-life debate within the scientific community. Therefore, in a persuasive writing assignment and student debate, students will demonstrate their knowledge of the science concept “invasive species” and the short story’s characterization simultaneously. Students will assume the voice and perspective of one character – Arleen or the girls – and write a persuasive argument using text details from both the short story and *LiveScience* article to address their intended audience: the opposing character. This debate will allows students to apply the science concept to a new context, practice their persuasive writing skills, and approach a real-life scientific debate through the synthesis of fiction and nonfiction sources.

**Pandika, M. (2013). Fossils suggest T. rex was, indeed, king of the food chain. *LA Times.* Retrieved from** [**http://articles.latimes.com/2013/jul/15/science/la-sci-t-rex-hunter-20130716**](http://articles.latimes.com/2013/jul/15/science/la-sci-t-rex-hunter-20130716)

 As a nonfiction twin text for Bradbury’s “A Sound of Thunder,” this *LA Times* article provides students with information about the short story’s featured dinosaur – the *Tyrannosaurs rex* – to provide them with a shared knowledge base, reinforce science concepts that they have learned in biology (i.e. food chain, apex predator, and scavenger), and provide a nonfiction lens with which to view and analyze Bradbury’s fictional portrait of the dinosaur. Students first exposure to the research article strategy, CHoMP, occurs during the reading of this article. The strategy is integrated into both disciplines to provide students lower-risk practice with popular science article reading comprehension that will scaffold them to the independent navigation of articles in their science class’s final research project. This article prepares students for their homework reading in which Eckels finally encounters his T. rex. And its information will be used in the following day’s lesson when students are called to analyze the accuracy of Bradbury’s portrayal of the T. rex and decide whether Eckels’s was justifiably scared based on the real-life habits and appearance of the dinosaur.

**Pound, E. (1912). *Portrait d’une femme.* Retrieved from** [**http://www.poetryfoundation.org/poem/174182**](http://www.poetryfoundation.org/poem/174182)

Since Ezra Pound’s poem, “Portrait d’une Femme,” operates around an allusion to the Sargasso Sea – a polluted ecosystem looked at in detail in the science section of this interdisciplinary unit – and portrays human interconnectedness through that overarching allusion, students examine the poem as another example of the parasitic consequences of interconnectedness immediately after they look at how parasitic relationships are portrayed in William’s short story, “The Girls.” The poem offers another text form and shows other ways that an author can develop a portrait of negative interconnectedness. With Williams’s using character names and a parallel animal metaphor, Pound employs a science allusion and nautical jargon and phrasing to portray parasitism. Students will map out the “inputs” and “outputs” of the female protagonist’s interactions with others on a graphic organizer to understand how the allusion operates in the poem.

**Prince, S. A. (2010). *I pray that generations…* [Image]. Retrieved from** [**http://www.cardus.ca/comment/article/2059/i-pray-that-generations-/**](http://www.cardus.ca/comment/article/2059/i-pray-that-generations-/)

As a black-and-white linoleum cut painting, Steve Prince’s “I Pray that Generations…” provides students with a premade visual summary of a key point in Travis’s ideas about chaos theory in “A Sound of Thunder.” Therefore, for visual literacy development, students will analyze the painting after a close reading of the associated short story text excerpt. In “A Sound of Thunder,” Travis claims that an “entire history of life” of mice are embedded within “one particular mouse” (p. 74). Similarly, the painting features a primary female subject; however, embedded within her linework are abstract faces meant to represent how she is composed of her lineage. In the artist’s own explanation of the piece, Prince writes, it “represents the significance of an individual's relationship to past, present, and future generations” because “each person has generations built into them.” Prince’s explanation reinforces how the painting taps into several interdisciplinary unit themes, like interconnectedness and accountability: “…we affect lives through our actions for generations. Ultimately, the piece beckons us to be accountable for our actions because we have the power to speak – life or death.” Students will color in all of the faces and bodies they find within the painting before attempting to synthesize it with “A Sound of Thunder.” Then students will be required to explain, in writing, its relevance to Travis’s point that a single death affects “families of the families of the families” of that one mouse and “an entire future nation” (p. 74).

**The Sci-Fi Spot (2010). A sound of thunder (2005) - Trailer [Video file]. Retrieved from** [**https://www.youtube.com/watch?v=yTmKsKhMcIg**](https://www.youtube.com/watch?v=yTmKsKhMcIg)

Since students may have difficulty visualizing the unique setting of Bradbury's "A Sound of Thunder" because it is a composite of prehistoric and futuristic elements, a section of this movie trailer will be used in conjunction with two pages of a graphic novel adaptation of the short story to provide students with a more concrete grasp of the setting and the plot elements imagined by the author (i.e. antigravity Path, sterilization of suits, time machine, etc). Since the movie trailer deviates heavily from the text and it ends in plot spoilers, only a predetermined clip will be shown (0:25 - 0:57). Students will be led into the reading by a discussion of what the antigravity Path may look like based on newly established knowledge of the Latin prefix, "anti." Students will confirm their hypotheses with the video's depiction of it. The video provides an in-action portrayal of the elements, which is why it is used in addition to a graphic novel adaptation.

**Williams, J. (2004). The girls. In Chabon, M. (Ed.) (2005), *The Best American Short Stories 2005* (pp. 212-222). New Yokr, NY: Houghton Mifflin Company.**

As the second of two short stories in the English section of this unit (and thus the second of two primary texts), Williams’s “The Girls” continues students analysis of what fiction has to say about interconnectedness, accountability, and individual worth. Revolving around a household of characters uniquely, parasitically, and meaningfully connected, the short story requires that students examine interconnectedness through character relationships. In a similar fashion to the instructional format of Bradbury’s “A Sound of Thunder,” students will read the text for homework, entering class prepared to close read and reexamine sections. With Arleen presenting a statistic about cats’ bird predation, the short story offers its content to the science classroom through the concept of invasive species. Additionally, the animal interactions that parallel character relationships and the ability to classify those character relationships in terms of symbiosis – a science concept that students will explore in the science section of this unit – furthers this short story’s natural cross-curricular potential. Students will apply both those science concepts onto the text to elevate the meaning of Williams’s piece of Gothic fiction and better understand its commentary on the unit’s themes.