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Exploring the Environmental Impacts of War through Literature and Science.

**Description**

*In this two to three-week assessment and project, students will work in groups to write argumentative essays (supported by textual evidence) explaining who is responsible for helping the communities that we have read about to “clean up” after war has ravaged their countries.*

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**Introduction**

This lesson is designed to get students to think about international issues and make connections between what they are reading in the classroom, and the “real world.” Additionally, this unit gives students the scaffolding they need to transfer analytical skills between the English Language Arts classroom and science classrooms. A cross-curricular activity and assessment like this also integrates 21st Century learning expectations and allows students the opportunity to solve real-life problems.

At this point in the school year, students have read several novels, watched short films, and read articles about war, conflict, and refugee crises in several countries (Sudan, Syria, Rwanda, Germany, The Balkans, and Iran). In reading these, students are exploring world literature, while also making connections to their own lives. Throughout the year, students have also been building and practicing their discussion skills. To begin this activity, students will use the EnviroAtlas tool and activity—found and available for free on the EPA’s website—to explore the Ecosystem Services that the environment provides for us. After completing this activity, we will have a whole class discussion about our own access to natural spaces, environmental education as a whole, and the often overlooked idea of environmental justice. We will then be making connections to the texts we have read, asking “what could be the long term environmental impacts of conflict in these countries?” and, “how may communities be impacted by conflict?” After discussion, students will read an article and report out a summary and interesting points to the rest of the class. Depending up reading ability, two different articles are available. I will then introduce the writing assignment.

**Curriculum Alignment**

* CCSS: ELA Literacy. RL 9-10.1: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
* CCSS: ELA Literacy. RI 9-10.1: Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
* CCSS: ELA Literacy. RI 9-10.2: Determine a central idea of a text and analyze its development over the course of a text, including how it emerges and is shaped and refined by specific details: provide an objective summary of the text.
* CCSS:ELA Literacy. RI. 9-10.3: Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
* CCSS:ELA Writing 9-10.1: Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
* CCSS:ELA Writing 9-10.9: Draw evidence from literary or informational texts to support analysis, reflection, and research.
* CCSS:ELA Speaking and Listening 9-10.1: Initiate and participate effectively in a range of collaborative discussion (one on one, in groups, and teacher-led) with diverse partners on texts and issues, building on others’ ideas and expressing their own clearly and persuasively.
* CCSS:ELA Speaking and Listening 9-10.4: Present information, findings, and supporting evidence clearly, concisely, and logically, such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

**Objectives**

* Students will explore Ecosystem Services and how they relate to us, as well as the characters they read about. Through the EnviroAtlas activity, class discussion, and written work, students will understand the longstanding impact that humans can have on natural spaces.
* Students will read editorial articles about the impacts of war on the environment to “fill in” potential gaps in understanding and share out summaries to the class.
* Students will work collaboratively to develop arguments, create claims, provide textual evidence, and write thoughtful commentary about their assigned arguments.
* Students will read teacher assigned scientific articles that support their arguments, in order to provide explicit textual evidence.
* Students will write an argumentative essay, synthesizing information from multiple sources.
* Students will make presentations to the class that utilizes graphs, charts, and graphics, to make scientific students relevant to literature.

**Time & Location**

* This project and assessment will be dependent upon ongoing activities throughout the semester (block schedule, 1 semester= 1 year of class)
* Most likely, the project will be introduced at the start of second quarter
* The project will require approximately 6 weeks
* Classroom
* Outdoor spaces (any space will work, but I will take classes the Durham Public Schools Hub Farm)
* 90-minute class periods
  + 60 minutes a day for lessons, except for the panel presentation day, which will use full 90 minutes

**Teacher Materials**

* Novels (class set) -Speak to school media center, and librarians. Another way to acquire resources is through DonorsChoose.
  + Persepolis
  + A Long Way Gone
  + 1000 Splendid Suns
    - Honors students read this for their summer reading assignment
* Articles (one for each student)
  + “The Human Cost of War” (proficient to exemplary readers)
  + “What is the Environmental Impact of Modern War?” (emerging and developing readers)
  + “Radiation from Balkin Bombing Alarms Europe” (all students, though perhaps read as a class)
* Ted® Talk and Films
  + Hotel Rwanda (film)
  + Radioactive Wolves <https://www.pbs.org/video/nature-radioactive-wolves/>
  + DIY Mosul-Rough Translation Podcast <https://www.npr.org/2019/04/16/713962747/d-i-y-mosul>
  + How Big Brands Can Help Save Biodiversity <https://www.ted.com/talks/jason_clay_how_big_brands_can_save_biodiversity?language=en>
  + Gihembe Ravine <http://www.rw.one.un.org/press-center/news/gihembe-ravine>
  + Ecocide <http://tedxexeter.com/2012/05/21/polly-higgins-video/>
* Computer and Projector
* EnviroAtlas Interactive Map <https://www.epa.gov/enviroatlas/enviroatlas-eco-health-relationship-browser>
* Ecosystems Services Activity (print out and prepare cards in advance)
* Scientific articles and journals cited in EnviroAtlas, use and print out those that are most applicable
* Classroom folders for students to store materials
* Access to computers or computer labs for 2-3 days throughout the project

**Student Materials**

* Novels (class set)
  + Persepolis
  + A Long Way Gone
  + 1000 Splendid Suns
* Articles (one for each student)
  + “The Human Cost of War”
  + “What is the Environmental Impact of Modern War?”
  + “Radiation from Balkin Bombing Alarms Europe”
* Ted Talk and Films
  + Hotel Rwanda
  + Radioactive Wolves <https://www.pbs.org/video/nature-radioactive-wolves/>
  + DIY Mosul-Rough Translation Podcast <https://www.npr.org/2019/04/16/713962747/d-i-y-mosul>
  + How Big Brands Can Help Save Biodiversity <https://www.ted.com/talks/jason_clay_how_big_brands_can_save_biodiversity?language=en>
  + Gihembe Ravine <http://www.rw.one.un.org/press-center/news/gihembe-ravine>
  + Ecocide <http://tedxexeter.com/2012/05/21/polly-higgins-video/>
* Computer and Projector (use teacher’s for panel presentation)
* Scientific articles and journals cited in EnviroAtlas, use and print out those that are most applicable (teacher provided)
* Classroom folders for students to store materials (teacher provided)
* Access to computers or computer labs for 2-3 days throughout the project
* Writing utensils
* Paper/notebooks

**Class Management and** **Safety**

Practice school rules in classrooms and computer labs. Be sure to have parental permission to take students off campus (e.g. for students with allergies, make sure they have epi pens with them). Let administrators know when you are leaving campus or going outside and take your cell phone with you. When I take my students to the Hub Farm, we are able to walk there. Students will already be “grouped up” so they will be responsible for doing “buddy checks” before we leave any location. I will also be taking attendance and doing head counts so students do not get left behind. Though students may have some time to explore the area on their own, much of what we do will be in a group, and I will keep a close eye on them (and keep them out of the water that is on the Hub Farm).

**Student Prior Knowledge**

At this point in their English careers, and in the school year, students know the basic format for writing persuasively. They know how to create and write argumentative claims, how to incorporate textual evidence, and they know how to write commentary. Students are still working on synthesizing information from multiple sources, and writing thorough signal phrases to introduce evidence. Students have also read and/or viewed all materials prior to introducing the project itself, so they are familiar with the wars, conflicts, and communities impacted by them. Students will also be familiar with the geology associated with these parts of the world. In addition to that, students know how to read texts for a purpose, and extract pertinent evidence to answer and support questions.

**Teacher Preparations**

For this assessment and project, teachers must have a thorough understanding of students’ reading ability. This will be particularly important when it comes to the articles labeled for different types of readers. Additionally, teachers should group students for the reading, writing, argument making, and presentations based upon abilities. Teachers must also print and provide journal articles (or abstracts) for students, selecting resources from EPA’s EnviroAtlas <https://enviroatlas.epa.gov/enviroatlas/Tools/EcoHealth_RelationshipBrowser/bibliography.html>

**Activities**

The teacher will provide the project expectations before students begin reading the materials for the course. With this, students will have the understanding of the materials and questions before beginning the assignment. The teacher will group students together after the first novel read so that they are able to analyze their specific roles and arguments. While reading materials, students will meet in their groups weekly so that they are able to build their arguments. On a weekly basis, student groups will also be given articles and abstracts to read so that they can pair the non-fiction texts with the literature. This can be as long or as short as the teacher would like. Ideally this project will require 3-4 weeks, and students will write an essay in their groups at the end, along with presenting their arguments to the class and other adults/administrators.

**Assessment**

See folder and rubrics, included.

**Critical Vocabulary**

The following are commonly used words in both Science and English classes, so that teachers can use both, and know what students may be familiar with.

|  |  |
| --- | --- |
| **English** | **Science** |
| Subject | Topic |
| Central Idea/Main Idea | Main Idea |
| Inferences | Claim |
| Evidence: direct quotes, paraphrased, cited, charts, graphs | Evidence: data, paraphrasing, charts, graphs |
| Commentary: explains how evidence connects to inference | Reasoning: explains how evidence connects to the claim |
| Rhetoric | Usually not really addressed in science texts |
| Annotation | Annotation  -Marking text and images |

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