

Name: _____ Cycle One Culminating Project Packet: Journey

"Journey in our Modern World- Costs and Baggage"



"Scientists may depict the problems that will affect the environment based on available evidence, but their solution is not the responsibility of scientists but of society as a whole." -Mario Molina

Background: We started this biology course by traveling backwards in time to the origin of life and the Goldilocks Conditions for life: a) The right amount of water b) The right chemicals, including carbon compounds c) The right amount of energy, beginning with the sun. We then learned that abiotic factors are just as essential for life as biotic factors. Together, these living and non-living things make up entire ecosystems with interactions expressed through food webs. We have seen food webs recover from challenges such as weather catastrophes while other food webs have crumbled due to disease and invasive species. Too often, we forget our own roles in these cycles. As human beings, we carry great influence upon the many webs of life on Earth.

In this culminating assessment, we are going to consider the very real, global impact our consumer choices create by tracing the journey of a modern day convenience and exploring the environmental consequences.

Task:

- You will **track** the journey of a modern-day convenience item and create a **properly researched, graphical representation** to show how this item is produced, the energy and resources required for production, the levels of impact of this item has on both living and non-living things, and connect how the waste from this item factor ties into the carbon, nitrogen, and/or water cycle(s).
- You will **use your hands** to create an **artistic representation** to make an eye-catching statement about this issue, using materials from the actual item or closely related to the item.
- You will make a **commitment** and **document** your commitment to show how you are pushing against the inequitable strain this item creates in our world.

Learning Objectives:

- HS-L52-7: Design and refine a solution for reducing the impacts of human activities on the environment
- RST.9-10.7 Translate quantitative or technical information in words in a text into visual form (e.g., a table or chart)
- WHST.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; asses the usefulness of each source in answering the research question

Guiding Questions:

- What are modern-day conveniences that we “can’t live without?”
- What existed prior to the modern convenience, and how does the environmental impact compare?
- What are economic, environmental, and human costs in the production, use, and disposal of your item?
- How does your item create inequity and injustice for society and/or the Earth?
- What actions can an ordinary person take to restore justice for the environment and society?

Articles to Help Gather Ideas:

- <http://www.onegreenplanet.org/lifestyle/things-that-are-super-convenient-but-also-super-wasteful/>
- <https://www.weforum.org/agenda/2017/04/these-charts-demonstrate-how-wasteful-america-has-become>
- <https://www.goingzerowaste.com/top-10-to-get-started/>
- <https://www.theatlantic.com/technology/archive/2016/09/the-global-cost-of-electronic-waste/502019/>

Student Work Timeline & Check-In Dates:

| | |
|------------------------------------|---|
| Topic Picked Out | <input type="checkbox"/> Wed Sep 19 <input type="checkbox"/> Late:_____ |
| Three Reliable Resources Selected | <input type="checkbox"/> Th/Fri Sep 20-21 <input type="checkbox"/> Late:_____ |
| Research Notes Half-way Completed | <input type="checkbox"/> Wed Sep 26 <input type="checkbox"/> Late:_____ |
| Research Notes Fully Completed | <input type="checkbox"/> Th/Fri Sep 27-28 <input type="checkbox"/> Late:_____ |
| Information Selected for Infograph | <input type="checkbox"/> Mon/Tue Oct 1-2 <input type="checkbox"/> Late:_____ |
| Draft of Infograph Approved | <input type="checkbox"/> Th Oct 4 <input type="checkbox"/> Late:_____ |
| Artistic Creation Draft Approved | <input type="checkbox"/> Th Oct 4 <input type="checkbox"/> Late:_____ |
| Action to Restore Equity Approved | <input type="checkbox"/> Th Oct 4 <input type="checkbox"/> Late:_____ |
| Infograph Final Completed | <input type="checkbox"/> Th/Fri 19 th <input type="checkbox"/> Late:_____ |
| Documentation of Action Completed | <input type="checkbox"/> Mon/Tue Oct 22-23 <input type="checkbox"/> Late:_____ |
| Artistic Creation Completed | <input type="checkbox"/> Wed Oct 23 <input type="checkbox"/> Late:_____ |

C.R.A.A.P. Test Worksheet

The CRAAP Test* is a list of questions to help you evaluate the information you find. Select a source appropriate to your research topic. Use that source to answer the questions below to determine if it is appropriate to use.

Source:

Author (First & Last Name):

Title of Article:

Website URL or Book Title:

What type of source is it? ☐ Scholarly Article ☐ Magazine ☐ Newspaper ☐ Book ☐ Website

1. Currency: *the timeliness of the information*

| | |
|--|--|
| When was the information published or posted? | |
| Is it recent enough to be relevant to your thesis? Why or why not? | <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: |
| * Websites Only: How recently has the website been updated? | |

2. Relevance: *the importance of the information for your needs*

| | |
|--|--|
| Does the information relate to your topic or answer your question? | <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: |
| Would you be comfortable using this source for a research paper? | <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: |

3. Authority: *the source of the information*

| | |
|-------------------------------|--|
| Who is the creator or author? | |
|-------------------------------|--|

| | |
|---|--|
| What are the author's credentials or organizational affiliations? | |
| What are the author's qualifications to write on this topic? | |
| *Websites Only: does the URL reveal anything about the author or source? (examples: .com, .edu, .gov, .org, .net) | |

4. **Accuracy:** *the reliability, truthfulness, and correctness of the content*

| | |
|---|--|
| Is the information supported by evidence? | <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: |
| Are there citations or a bibliography included? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Are there spelling, grammar, or other typographical errors? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| *Websites Only: Do all the links work? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

5. **Purpose:** *the reason the information exists*

| | |
|--|--|
| Do the creator(s) make their intentions or purpose clear? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Does the point of view appear objective and impartial? | <input type="checkbox"/> Yes <input type="checkbox"/> No Explain: |
| Are there any political, ideological, cultural, religious, or personal bias? | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| Is the creator/author trying to sell you something? | <input type="checkbox"/> Yes <input type="checkbox"/> No |

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Research Notes Organizer:

| Focus Area | Source (Author's Last Name, First Name & Year) |
|--|--|
| Relevant Historical Context <i>Consider what existed before your item; the need & success of this item</i> | |
| Production <i>Consider how it's made, who makes it (type of laborer & country), environmental impact of production, energy/resources required for production</i> | |

| Focus Area | Source (Author's Last Name, First Name & Year) |
|---|--|
| <p>Usage</p> <p><i>Consider how long the item is useful for, the frequency of use, average cost of use</i></p> | |
| <p>Disposal</p> <p><i>Consider how the item is disposed; whether it's biodegradable; how much space it takes up in landfills; energy considerations in ridding of the item</i></p> | |

| Focus Area | Source (Author's Last Name, First Name & Year) |
|---|--|
| <p>Consequences of Item</p> <p><i>Consider who/what (people, habitats, animals) most impacted by this item and how they are impacted</i></p> | |
| <p>Biology Content Connection</p> <p><i>Consider how your item plays into the carbon/nitrogen/sulfur and/or water cycle. Links to cycles here: https://www.siyavula.com/read/science/grade-10-lifesciences/biosphere-to-ecosystems/08-biosphere-to-ecosystems-07</i></p> | |
| <p>Restoring Equity/ Betterment</p> <p><i>Consider what is already being done to push against the harm caused by this item. What can an ordinary person do to make this issue better?</i></p> | |

Turn Your Information into an Infograph!

What is an infographic? An infographic makes minimal use of text and can be a powerful tool for displaying data, explaining concepts, simplifying presentations, mapping relationships, showing trends and providing essential insights. The use of compelling images on an infographic can make what is an abstract idea that much easier to understand (hence infographics popularity in marketing and instruction). Infographics simplify large data sets providing a high-level view and making them easier to digest at first glance. They help convey data in a compact and shareable form.

Examples of excellent infographs:

- This Infograph explains what an infographic is: <https://www.customermagnetism.com/what-is-an-infographic/>
- Best infographs of 2016: <https://blog.hubspot.com/marketing/best-infographics-2016>

Organize Information for your infographic: From your research, pick out 2-4 of the most important facts for each subject area. Be sure to cite each fact in the format (Author Last Name, Year Published). For example: "The Class of 2022 Freshmen are going to make a lasting mark at Camelback Montessori." (Nguyen, 2018).

| | | |
|--|--|--|
| Historical Context <ul style="list-style-type: none">•••• | Production <ul style="list-style-type: none">•••• | Use <ul style="list-style-type: none">•••• |
| Disposal <ul style="list-style-type: none">•••• | Consequences <ul style="list-style-type: none">•••• | Biology Connection to Nutrient/Water Cycle <ul style="list-style-type: none">•••• |

Tools to make Infograph: Google Charts; Prezi, PowerPoint; iPad Apps: Venngage, Canva, Piktochart

Get Creative!

Now that you have done your research, draw a draft or make bulleted notes of what you plan to do for your 3-D art piece. Include a one-paragraph rationale for the meaning behind your art piece.

Make Change:

What action will you commit to for a week in order to restore justice to the harm created by this item?

Why will your action help?

How will you document and measure your efforts?

RUBRIC

| | 4- "A" | 3- "C" | 2- "D" | 1- "F" |
|---|---|---|---|--|
| Research Notes & References | <p>Fits CRAAP criteria for an excellent source</p> <p>At least 3 reliable sources used from a variety of perspectives</p> <p>Research notes are thorough for all focus areas and contain essential facts for the infograph</p> | <p>Fits CRAAP criteria for a good source</p> <p>At least 2 reliable sources used from a variety of perspectives</p> <p>Research notes are complete for all focus areas and contain relevant facts for the infograph</p> | <p>Fits CRAAP criteria for a useful source</p> <p>At least 1 reliable source used</p> <p>Research notes are mostly complete for almost all focus areas and contains some relevant facts for the infograph</p> | <p>Fits CRAAP criteria for highly questionable</p> <p>No reliable sources used</p> <p>Research notes are lacking for some focus areas and/or missing relevant facts for the infograph</p> |
| Graphical Representation of Item's Journey | <p>Item's journey is traced from production to use to disposal</p> <p>The most important environmental, human, and fiscal consequences are present</p> <p>Graphic is well-organized and easy to follow</p> <p>Citations are present on the infograph in the format (Author Last Name, Year) and a works cited page is included with authors, title, and website</p> | <p>Item's journey includes the production, use and disposal, with one area lacking some details</p> <p>The main environmental, human and fiscal consequences are present</p> <p>Graphic is organized and can be followed with a little effort</p> <p>A works cited page is included with authors, title and website</p> | <p>Item's journey includes at least two of the following: Production, use and disposal</p> <p>Consequences are included from at least two of the three areas</p> <p>Graphic requires significant effort to follow</p> <p>A works cited page includes websites</p> | <p>Item's journey contains one or fewer of the main areas</p> <p>Consequences included from only one or fewer areas</p> <p>Graphic too disorganized to follow</p> <p>No works cited page</p> |
| Biology Content Connection | <p>Meaningfully describes interactions between abiotic and biotic factors</p> <p>Clear and specific connection between the item and one of the nutrient/water cycles</p> <p>Flow of energy is detailed, logical and accurate</p> | <p>Describes main interactions between abiotic and biotic factors</p> <p>Connection made between the item and one of the nutrient/water cycles</p> <p>Flow of energy is accurate</p> | <p>Describes some interactions between biotic and abiotic factors</p> <p>Nutrient/water cycle is included and somewhat relevant</p> <p>Flow of energy is partially accurate</p> | <p>Missing major interactions between biotic and abiotic factors</p> <p>No nutrient/water cycles included or connection unclear</p> <p>Flow of energy missing or mostly inaccurate</p> |

| | | | | |
|--|---|--|--|--|
| Artistic Creation based on Item | <p>Artistic creation contains multiple connections to the issues presented by the item</p> <p>Creation is visually appealing and catches the attention of a passer-by</p> <p>Student can clearly articulate intentional choices made in making the creation</p> | <p>Creation contains a primary connection to an issue presented by the item</p> <p>Creation is relatively neat and visually stimulating</p> <p>Student can explain the general meaning behind the creation</p> | <p>Creation loosely connects to an issue presented by the item</p> <p>Creation is slightly disorganized or sparse in visual appeal</p> <p>Student can mostly explain the meaning behind the creation</p> | <p>Unclear connection between the creation and the item</p> <p>Creation lacks visual appeal</p> <p>Student explanation behind the creation is confusing or lacks clarity</p> |
| Action to Restore Justice | <p>Action demonstrates clear understanding of possible solutions to improve the issues</p> <p>Actions is replicable by a common citizen and fully supported by documentation</p> <p>Action makes a meaningful impact</p> | <p>Action is mostly connected to a possible solution to improve the issue</p> <p>Action is mostly replicable by others and supported by documentation</p> <p>Action makes a positive impact</p> | <p>Action is loosely connected to a solution to improve the issue</p> <p>Action may be hard to scale up and has partial documentation</p> <p>Action attempts to make an impact but may be slightly underwhelming</p> | <p>Action seems unrelated to improving the issue</p> <p>Action cannot be applied at a larger scale and lacks documentation</p> <p>Little to no effort seen to make an impact</p> |