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|------------|--------------------------|----------------|----------------------------------|---------------|--------------------|
| Teacher(s) | | Subject groups | Language & literature + Sciences | | |
| Unit title | Environmental Journalism | MYP year | 3 | Unit duration | 30 hours (8 weeks) |

Inquiry: establishing the purpose of an interdisciplinary unit

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| Purpose of integration |
| <p>Disciplinary knowledge contributing to the integrated purpose:</p> <ul style="list-style-type: none"> In language and literature, students will explore the nature of journalistic writing through inquiries into the structures used for different journalistic purposes. They will consider the ways in which journalists communicate by selecting evidence in order to convey a specific message about human impacts on the environment. In sciences, students will explore the Global Goals for Sustainable Development (Goals 14 and 15), focusing on the need for biodiversity in land and sea environments, and the human impacts on the fragile balance of ecosystems. They will conduct primary and secondary research to collect evidence related to a specific environmental issue. They will explore different methods that scientists use to communicate evidence (data tables, graphs, timelines of consequences). <p>Integrated purpose/Synthesis:</p> <ul style="list-style-type: none"> During the interdisciplinary teaching and learning process, students will combine their learning from both subjects to consider the ways in which incisive communication of evidence can be used to inform others about the nature of human impacts on the environment. Students will select an environmental issue that has been impacted by human actions, conduct research, and develop a journalistic article that will be shared at the school's Sustainability Fair and submitted to a journalism competition sponsored by Young Journalists for the Environment. |
| Interdisciplinary key concept(s)/(related concepts) |
| <p>Key concept: Communication</p> <p>Related concept: Evidence</p> |
| Conceptual understanding |
| Evidence can provide a powerful basis for persuasive communication . |
| Global context and exploration |
| <p>Global context: Globalization and sustainability</p> <p>Exploration: Human impact on the environment</p> |
| Statement of inquiry |
| Evidence can provide a powerful basis for persuasive communication about human impacts on the environment . |
| Inquiry questions |

Factual: What **environmental issues** do we face? What types of **evidence** are there? What **communication** tools and techniques can be used to clearly convey information?

Conceptual: How can **evidence** be sourced, **communicated** and referenced? How is **evidence** used to persuade others to believe a particular point of view? In what ways do **human decisions and actions impact the environment**?

Debatable: To what extent can **evidence**-based **communication** impact the health of the environment (reduce the negative **human impacts** and increase the positive **human impacts**)?

Summative assessment—Interdisciplinary performance(s) of understanding

Interdisciplinary criteria

A. Evaluating

- i. analyse disciplinary knowledge
- ii. evaluate the interdisciplinary perspectives

B. Synthesizing

- i. create a product that communicates a purposeful interdisciplinary purpose
- ii. justify how their product communicates interdisciplinary understanding

C. Reflecting

- i. discuss the development of their own interdisciplinary learning
- ii. discuss how new interdisciplinary understanding enables action

Task(s):

1. “[Young Reporters for the Environment](#)” Article

(Assessed with criterion Bi)

You are invited to take a research-based stand on an issue related to the **human impact on the environment**, and submit your article to the Foundation for Environmental Education. This organization holds an annual competition aimed at encouraging “young people from all over the world to push themselves to their limits in the search for a story which will ultimately bring to the fore a real and current local environmental issue.”

Drawing on your learning and research conducted in Sciences regarding the Global Goals for Sustainable Development (Goals 14 and 15), combined with your learning in LL related to journalism and journalistic writing, you will **write** an article that includes:

- a description of **evidence** regarding an environmental problem, integrating the research and data gathering process,
- representation and analysis of the data,
- a minimum of three images (photos, graphs, data representation)
- a description of possible local solutions.

You will **present** your findings at the Sustainability Fair, and your article will be submitted in the “Young Reporters for the Environment” competition.

2. Thinking Log

(Assessed with criteria Ai, ii; Bii; Ci, ii.)

Options: You may use any combination of the following formats to develop and provide evidence of your thinking.

- Analog notes, Digital notes
- Mindmaps
- Comparison T-charts
- Blog, Vlog
- Recorded oral presentation

Remember to review the 7-8 level descriptors of ID criteria Ai, ii; Bii, Ci, ii to determine which format might allow you to most effectively demonstrate the level of thinking required by the command terms.

Example prompt questions are provided to inspire your thinking process, and you may discover other thinking topics as the unit progresses

Task assessment details:

Ai. *Analyse* disciplinary knowledge

Analyse: identify parts and relationships and interpret information to reach conclusions.

Prompts:

- What specific elements of knowledge from language and literature are valuable in understanding this topic, issue, concepts, and statement of inquiry?
- What specific elements of knowledge from sciences are valuable in understanding this topic, issue, concepts, and statement of inquiry?
- What differences and similarities do I notice in how each subject approaches this topic, issue, concepts and statement of inquiry?
- To what extent were the knowledge contributions of each subject equally important to understanding this topic, issue, concepts, and statement of inquiry?

Aii. *Evaluate* interdisciplinary perspectives:

Evaluate: Make an appraisal by weighing up the strengths and limitations.

Prompts:

- Strengths:
 - How does combining the perspectives and content of these subjects help me to more fully understand this topic/ issue/ problem?
 - How does combining the perspectives and content of these subjects help me to more fully understand the statement of inquiry, "To what extent can *evidence-based communication* impact the *health of the environment*?"
 - *reduce the negative human impacts*
 - *and increase the positive human impacts*
 - What specific knowledge, understanding, skills from each subject was most impactful?
- Limitations:
 - What could be limitations in combining these particular subjects?
 - What other subjects might add another dimension to my thinking about this topic/issue/problem and statement of inquiry?

Bii. *Justify* how your product communicates interdisciplinary understanding

Justify: Give valid reasons or evidence to support an answer or conclusion.

Prompts:

- What knowledge from each subject/discipline is evident in my product?
- In what specific ways does my product *synthesize* knowledge from both/all subjects/disciplines to communicate *interdisciplinary* understanding?

Ci: *Discuss* the development of your own interdisciplinary learning

Discuss: Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.

Prompts:

- In what ways (if any) did my understanding of disciplinary knowledge (in each subject/discipline) change or expand as I combined that knowledge in my article?
- What was my thinking process as I tried to combine the disciplinary knowledge into a synthesized understanding? (ie. Did some aspects of each subject stay separate? Did some things seem to blend together?)
- What do I find easy or challenging about interdisciplinary learning compared to disciplinary learning?
- Did any subject/discipline seem more important to the purpose and outcome of the unit?
- In what ways did my understanding of the unit's topic, issue, concepts, statement of inquiry change over the course of the unit?

Cii: *Discuss* how your interdisciplinary understanding has enabled you to create the article, and ways in which it might allow you to take future action.

Prompts:

- What did I learn that caused me to think differently about the world? (people, animals, the environment)
- What other types of action could result from what I learned in this unit? (direct, indirect, advocacy, or research)
- What specific action might I be interested in taking based on what I've learned in this unit?

Summative assessment- Disciplinary

Language and literature

Letter to the editor

(Assessed with MYP Y3 LL crit: Bi, ii, iii; Ciii; Di, ii, iii, iv)

Develop a letter to the editor about a local environmental issue, using one or more persuasive writing techniques and incorporating the elements of journalism.

Assessment:

Criterion B: Organizing

- i. Employ organizational structures that serve the context and intention
- ii. Organize opinions and ideas in a coherent and logical manner
- iii. Use referencing and formatting tools to create a presentation style suitable to the context and intention

C. Producing text

- iii. Select relevant details and example to develop ideas

D. Using language

- i. Use appropriate and varied vocabulary, sentence structures and forms of expression
- ii. Write and speak in an appropriate register and style
- iii. Use correct grammar, syntax and punctuation
- iv. Spell with accuracy

Sciences

Environmental Issue Legislative Briefing

(Assessed with MYP Y3 Sciences crit. Ai, iii; Bi; Diii, iv)

Research the implications/consequences of a local environmental issue related to fresh water, ocean or soil contamination or pollution (historical, economic, social and/or political impacts), and develop a briefing for a local legislator.

Link local issue to larger global picture.

Assessment:

Criterion A: Knowing and understanding

- i. describe the scientific knowledge regarding the environmental issue
- iii. analyse the researched information to make a scientifically supported judgement regarding recommendations for legislative action.

Criterion B. Inquiring and analyzing

- i. describe a problem or question to be tested by a scientific investigation

Criterion C: Processing and evaluating

- i. present collected and transformed data in a form that is understandable and relevant to the concerns of the audience (legislator)
- ii. provide an interpretation of the data and describe the results using scientific reasoning

Criterion D: Reflecting on the impacts of science

- iii. apply relevant scientific language effectively
- iv. document the work of others and sources of information used

Approaches to learning (ATL)

Descriptions of when and how each skill strategy is explicitly taught and practices are provided in the description of the disciplinary and interdisciplinary learning experiences and teaching strategies.

Communication

Communication

- In order for students to demonstrate journalistic writing, they will need to use appropriate forms of writing for different purposes and audiences. Skill strategy: "Inverted Pyramid".
- In order for students to conduct productive interviews, they will need to develop organized and concise interview questions. Skill strategies:
 - 5 Point checklist: Relevant, open-ended, clear, applicable, unbiased.
 - 5 Ws and 1 H: Who, what, why, when, where, how
- In order for students to write succinctly in their article, they will need to paraphrase accurately and concisely. Skill strategy: "Read-Cover-Write". (Extra support video: [How to write-paraphrasing](#))
- In order for students to collaboratively plan how they will communicate information at the Sustainability Fair, they will need to negotiate ideas and knowledge with peers. Skill strategy: "My needs-Your needs-Our solution". Students are familiar with negotiation in conflict management, but this review of the strategy will focus on determining personal preferences and skills in public presentation.
- In order for students to take notes during the Documentary, they will need to take effective notes in class. Skill strategy: "Concept-Context Map" graphic organizer. These notes then transferred to online process journal notes section.

Social

Collaboration

- In order for students to provide each other with feedback on their first draft of their articles, they will need to give and receive meaningful feedback. Skill strategy: "Logos, Pathos, Ethos, Passion" feedback form.

Self-management

Organization

- In order for students to record their research findings, they will need to keep an organized and logical system of information. Skill strategy: Use of an online process journal (shared Google doc folder), including reference annotations and links.

Affective

- In order for students to stay focused during fieldwork, they will need to practice strategies to develop mental focus. Skill strategy: Mindfulness bell. Introduced in class and practiced during fieldwork as well. When the focus bell rings, everyone is still, and takes 3 mindful breaths before resuming.

Research

Information literacy

- In order for students to describe scientific knowledge (Sci obj. Ai), they will need to make connections between various sources of information. Skill strategy: "Compare-Contrast" graphic organizer in Google doc process journal.
- In order for students to select effective sources, they will need to evaluate and select information sources based on their appropriateness to the task. Skill strategy: Use of a [Source evaluation checklist](#).
- In order for students to use referencing tools (LL obj Biii), document the work of others and sources of information used (Sci obj Div), and document sources (IDU obj Cii), they will need to create references and citations, use footnotes/endnotes and construct a bibliography. Skill strategy: APA reference formatting.

Action: Teaching and learning through interdisciplinary inquiry

| Disciplinary grounding | |
|---|---|
| Language and literature | Sciences |
| <p>MYP 3 objectives</p> <p>B. Organizing</p> <p>i. Employ organizational structures that serve the context and intention</p> <p>ii. Organize opinions and ideas in a coherent and logical manner</p> <p>iii. Use referencing and formatting tools to create a presentation style suitable to the context and intention</p> <p>C. Producing text</p> <p>iii. Select relevant details and example to develop ideas</p> <p>D. Using language</p> <p>i. Use appropriate and varied vocabulary, sentence structures and forms of expression</p> <p>ii. Write and speak in an appropriate register and style</p> <p>iii. Use correct grammar, syntax and punctuation</p> <p>iv. Spell with accuracy</p> | <p>MYP 3 objectives</p> <p>A. Knowing and understanding</p> <p>i. Describe scientific knowledge</p> <p>iii. Analyze information to make scientifically supported judgments</p> <p>B. Inquiring and analyzing</p> <p>i. Describe a problem or question to be tested by a scientific investigation</p> <p>C. Processing and evaluating</p> <p>i. Present collected data</p> <p>ii. Interpret data and describe results using scientific reasoning</p> <p>D. Reflecting on the impact of science</p> <p>iii. Apply scientific language effectively</p> <p>iv. Document the work of others and sources of information used</p> |
| <p>Related concepts</p> <p>Purpose, structure</p> | <p>Related concepts</p> <p>Balance, consequences</p> |

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| <p>Content</p> <p>Prior learning: Close reading and analysis strategies</p> <p>Factual knowledge: Journalism, journalistic ethics, Associated Press writing guidelines, 5 Ws and the H, Inverted pyramid</p> <p>Conceptual knowledge:</p> <ul style="list-style-type: none"> • Throughout history, newspapers and journalists were (and are still today) agents of social change. • Ethical decisions have an impact on journalistic reporting. • Journalists must be researchers and, as such, must gather and critique information from different sources for specific purposes. • The sources from which one gathers information affects the outcome of objectivity. • Avoiding bias and libel is imperative when reporting. <p>Procedural knowledge:</p> <ul style="list-style-type: none"> • Distinguish between facts and opinions by summarizing data; detecting bias, stereotypes and clichés; and recognizing unstated assumptions. • Identify the roles and responsibilities of journalists. • Identify and qualify sources in research while remaining aware of source bias and/or party position • Develop interview questions | <p>Content</p> <p>Prior learning: Infographic design (Design), The Global Goals for Sustainable Development (Design, I&S, and Sciences)</p> <p>Factual knowledge: Invasive species/biodiversity (ecological, species, genetic biodiversity); Climate change; Marine Debris (Trophic levels, microplastics); Food (monoculture, accelerated evolution); Zero Waste; Water Quality</p> <p>Conceptual knowledge:</p> <ul style="list-style-type: none"> • Living things (including people) depend upon one another and their environment to survive. • Habitat destruction, overexploitation, introduction of invasive species, and climate change significantly impact global biodiversity. • Sustaining biodiversity is essential to all life on Earth. • Air and water pollution includes primary and secondary pollutants from point and nonpoint sources. • Pollution is increasing as a result of growth in population and in consumption. • Humans have the power to change the environment more than any other living thing. <p>Procedural knowledge: Create investigation questions; Collect data (quadrant sampling); Analyze data (line intercept, point intercept); Display data</p> |
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Learning Process

Introduction to the interdisciplinary unit

All students together (meet in the Learning Commons)

- **Provocation: Unit Mystery Box Challenge**
 - **Prep:** boxes containing images, quotes, items (micro plastic, water bottle, bottle cap, container of dirty water, etc), illustrating different aspects of **human impacts on the environment** and the power of journalism. ([Ideas for box contents](#))
 - Each group of 4 gets a box of different sets of “evidence” to examine to try to determine what this unit is about.
 - Class then has a discussion to see if their idea changes or deepens because of the evidence in others’ boxes.
- **Orientation to the statement of inquiry**
 - **Big idea:** **Evidence** can provide a powerful basis for persuasive **communication**.
 - What is “evidence”? Post-it brainstorm. Students write their ideas on post-its- one idea on each. Then, they put post-its on the wall or white board, grouping similar ideas together.
 - View: [What is evidence?](#) video (1:40)
 - We’ll be considering the ways in which evidence can be a powerful force in communication by investigating human impacts on the environment.
 - So this unit’s statement of inquiry is: **Evidence** can provide a powerful basis for persuasive **communication** about **human impacts on the environment**.
- **Brief orientation to the summative tasks.**

- PPT- about the contest and task requirements: Article and process journal format options

Disciplinary learning experiences and teaching strategies

Language and literature

ATL: practice strategies to develop mental focus.

Mindful Bell orientation

- Brief description of the process. When the bell rings, all action stops, everyone is still for 3 relaxed, mindful breaths.
- This strategy will be practiced throughout the unit and for the rest of the year.

What *environmental issues* do we face and how are they represented?

- Comparison of the language used and types of content in newspaper articles and online news sources covering local and global environmental issues.

What types of *evidence* are there?

- Secondary source research methods
 - Search terms and tips
- Source selection and evaluation
 - Print out the information on: [Ban Dihydrogen Monoxide](#)
 - Students read the page.
 - What do you think? Should the substance be banned? What evidence are you basing your opinion on?
 - **ATL:** evaluate and select information sources based on their appropriateness to the task. Distribution of [Source evaluation checklist](#). As a class review a completed example of what a source evaluation might look like.
 - Website analysis: Go to [Ban Dihydrogen Monoxide](#) website and complete source evaluation.
- Compare a range of sources based on search terms/methods used. Practice source evaluation in small groups.

What *communication* tools and techniques can be used to clearly convey information?

- Headline creation:

Sciences

ATL: practice strategies to develop mental focus. Mindful Bell scientific research

- [Instant Egghead video #54: How does meditation change the brain?](#) (2:24)
- Practice mindful bell- listening to the end of the bell sound, about 3-4 slow breaths.
- This strategy will be practiced throughout the unit and for the rest of the year.

What *environmental issues* do we face in our community?

- **ATL:** take effective notes in class. Strategy: Concept-Context map graphic organizer. These notes will then transferred to online process journal notes section.
 - Teacher illustrates the use of a Concept-Context map graphic organizer, (Concepts: Communication, evidence; Context: human impacts on the environment).
- Jigsaw: Class divided into groups.
- Students in each group select a local environmental issue to learn about (ex. invasive species, endangered species, climate change implications, pollution (marine debris, water quality), energy use), with at least one person from each group learning about each issue.
- Group splits up into learning stations. At each station, students view/analyze a documentary about the issue, taking notes on provided graphic organizer.
- Students get back in original groups. Representatives from each issue share their notes, comparing what they learned about:
 - How are **human actions** impacting the **environment**?
 - What forms of **communication** were used in the documentary to describe the environmental issue? What forms were most impactful to you?
 - **What types of evidence were cited?**
 - Analyze data, observations, surveys, assessments, field work
 - Interview experts
 - Text-based sources
 - Multimedia sources

What *communication* tools and techniques can be used to clearly convey information?

- Communicating scientific information: In pairs, students read and analyse a scientific journal article on an environmental issue.
 - What types of **evidence** are cited?

- Browse magazines and newspapers. Select a headline that catches your attention. Pair-share: Why was it attention getting?
- 6 word story: using concise language
 - Comparison of impact of long article and a 6 word story.
 - What 6 words would you pick out from the article to convey the most impactful ideas?
 - Write a 6-word story about the environmental issue you are exploring in sciences.
 - Develop a headline for the 6-word story.

How is *evidence* and language used to persuade?

- Yea or Nay
 - A statement about an environmental issue is presented. Students decide whether they agree or disagree.
 - Informal mini-debate in small groups.
- Post-it debate
 - A different statement is presented. Students take an agree-disagree position and work in groups of 4 to research evidence to back up their perspective.
 - Students summarize evidence (with citation) on large post-it notes and place on two sides of whiteboard.
 - Students consider the evidence posted on both sides.
- **Formative task:** Students can choose either side, write a headline, a lead sentence and list and cite three pieces of evidence to support their view.
 - Peer feedback
 - **ATL:** Give and receive meaningful feedback. Two stars and a wish. (LL Crit Ciii)
- 3 persuasive techniques: Logos, Pathos, Ethos
 - Comparison of two pieces of writing: one with the above elements, and one without.
- 10 elements of journalism

Summative task: Letter to the editor of local paper (LL crit: Bi, ii, iii; Ciii; Di, ii, iii, iv)

Develop the formative task (headline, lead sentence and evidence) into a letter to the editor about a local environmental issue, using one or more persuasive techniques and incorporating the elements of journalism.

- **Formative** peer and teacher check-ins. Feedback in terms of LL crit: Bi, ii, iii; Ciii; Di, ii, iii, iv)

Formative task: Thinking log check-in (ID criterion Ai)

- What specific elements of knowledge from language and literature are valuable in understanding this topic, issue, concepts, and

- What types of graphs, charts, etc are used to **convey information?**

How is *evidence* understood, used and communicated?

- Water and soil sampling in pairs (field trip or in-class samples provided if field trip not possible).
 - Record data
 - Methods of data representation and presentation
 - Data analysis, noting limitations.
- **Formative task:** Fieldwork notes, data table, data analysis, data presentation, analysis (Sciences crit. Aiii; Ci, ii)

Summative task: Environmental issue research briefing (Sciences crit. Ai; Bi; Diii, iv)

Research the implications/consequences of a local environmental issue (historical, economic, social and/or political impacts), and develop a briefing for a local legislator. Link local issue to larger global picture.

- Classtime to research and develop the briefing.
- **Formative** peer and teacher check-ins. Feedback in terms of Sciences crit. Ai; Bi; Diii, iv)

Formative task: Thinking log check-in (ID criterion Ai)

- What specific elements of knowledge from sciences are valuable in understanding this topic, issue, concepts, and statement of inquiry?

- statement of inquiry?
- How important were the knowledge contributions of language and literature in understanding this topic, issue, concepts, and statement of inquiry?
- What differences and similarities do I notice in how language and literature approaches this topic, issue, concepts and statement of inquiry compared to sciences?

- How important were the knowledge contributions of sciences in understanding this topic, issue, concepts, and statement of inquiry?
- What differences and similarities do I notice in how sciences approaches this topic, issue, concepts and statement of inquiry compared to language and literature?

Interdisciplinary learning process

Interdisciplinary learning experiences and teaching strategies (learning experiences occur in large group (both classes) or in separate classes with teachers determining which class period will be used to support each interdisciplinary learning experience.)

In what ways do human decisions and actions impact the environment?

How can evidence be sourced, communicated and referenced?

- Speaker panel preparation
 - Question generation
 - **ATL:** develop organized and concise interview questions. Small groups brainstorm questions. Teacher facilitates organization and editing of questions with two students using a 10 item checklist. Small groups revise and organize their questions.
 - 5 Point checklist: Relevant, open-ended, clear, applicable, unbiased.
 - 5 Ws and 1 H: Who, what, why, when, where, how
- Local scientists and environmental journalist speaker panel
 - 10 minute presentations
 - Q&A following each speaker
- **Summative task development:** Journalism article research process
 - Research question development.
 - **Formative task:** research question and rationale. Individual meeting with teacher.
 - Research and note-taking time in class. Teacher demonstrates each strategy and provides resource table for independent access of learning support resources and examples of each strategy.
 - **ATL:** keep an organized and logical system of information. Strategy: Use of an online note-taking journal (shared Google doc folder), including reference annotations and links.
 - **ATL:** paraphrase accurately and concisely. Strategy: “Read-Cover-Write”
 - Extra support video: [How to write- paraphrasing](#)
 - **ATL:** make connections between various sources of information. Strategy: Compare and contrast graphic organizer in Google doc process journal.
 - **ATL:** create references and citations, use footnotes/endnotes and construct a bibliography. Strategy: APA referencing. Model of format posted and reviewed.
- **Formative task:** Article first draft
 - **ATL:** use appropriate forms of writing for different purposes and audiences. Strategy: Inverted Pyramid.
 - Think about favorite story. Do the important pieces of information come at the beginning, middle, end or throughout?
 - [Week in Rap, Sept 2019](#), @1:57-2:56 What is the main idea? Where does it appear in the video? Why might journalists put the most imp't information at the beginning?
 - Introduce Inverted Pyramid.
 - Students read a brief article and as a class complete the inverted triangle sheet.
 - Complete notes for own article on another inverted triangle sheet.
 - Develop first draft.
 - Formative: Peer feedback
 - **ATL:** Give and receive meaningful feedback: 3 types of feedback:
 - “Inverted Pyramid”
 - “Logos, Pathos, Ethos, Passion” feedback form,
- **Summative task:** “[Young Reporters for the Environment](#)” **Article** final draft (ID criterion Bi)

To what extent can evidence-based communication impact the health of the environment (reduce the negative human impacts and increase the positive human impacts)?

- Prepare for Sustainability Fair.
 - **ATL:** negotiate ideas and knowledge with peers. Strategy: “My needs-Your needs-Our solution”
 - Fishbowl demonstration of the strategy with teacher facilitating with one group.
 - Use the strategy to decide who will be responsible for each part of the presentation.
- **Formative task:** Thinking log check-in (ID criteria Aii; Bii; Ci, ii)
 - See prompt questions in description of summative task.
- **Summative task:** Thinking log (ID criteria Ai, ii; Bii; Ci, ii)
 - See prompt questions in description of summative task.

Formative assessment

Informal Feedback:

- Ongoing use of individual white board responses will provide us with real-time information about student comprehension. Feedback can be personalized, and mini-workshopping offered as needs arise.
- Self-assessment, peer-assessment and teacher feedback will take place at multiple check-inpoints in the disciplinary and interdisciplinary summative task development process, using feedback comment forms based on applicable criteria.

Formative tasks:

- LL: Headline, lead sentence and evidence. (Peer feedback: Two stars and a wish based on LL crit Ciii descriptors)
- LL: Letter to the editor check-ins (Peer and teacher feedback based on LL crit. Bi, ii, iii; Ciii; Di, ii, iii, iv)
- Sciences: Fieldwork notes, data table, data analysis, data presentation (Sciences crit. Aiii; Ci, ii)
- Sciences: Environmental issue research briefing check-ins (Peer and teacher feedback based on Sciences crit. Ai; Bi; Diii, iv)

- ID Thinking log check-ins (Feedback: ID criterion Ai)
- ID Thinking log check-ins (Feedback: ID criteria Aii; Bii; Ci,ii)
- ID summative task research question and rationale. (Feedback: Individual comment based feedback from teacher)
- ID summative task first draft (Feedback: ID criterion Bi)

Differentiation

Content: Differentiated methods of accessing information

- Students may select a topic of their choice related to human impacts on the environment.
- Classroom and school library with a range of source material to accommodate interests, preferences and reading levels: scientific journals, documentaries, animated videos, websites, Khan Academy
- Resource table: Area of classroom where ATL learning support/extension materials and exemplars are available

Process: Differentiated methods of processing information

- Cooperative learning strategies to facilitate peer assistance
 - Source evaluation: in groups
 - Jigsaw/Small group learning stations: Documentary note-taking/analysis
 - Water/soil sample analysis in pairs
 - Pair-share: magazine headline analysis,
 - Mini-debate: in groups
 - Post-it debate: Agree-disagree research in groups
 - Speaker panel question generation: in groups
- Ancillary materials provided, and re-teaching assignments to students who need/want additional content support and/or extension.

Product: Differentiated options for providing evidence of learning

- While the product (a journalistic article) is the same for all students, the topic of the article is student-selected.

- Extension: Option to create a brief PSA video, poster, podcast, website to further share about the issue and possible solutions.

Resources

Provocation: [Unit Mystery Box Challenge](#) - Ideas for possible box contents (this may change each year to stay current)

Language and Literature

- [Ban Dihydrogen Monoxide](#)- edu website that warns against the dangers of dihydrogen monoxide (water)
- [Inverted Pyramid](#) Flocabulary lesson and handouts (teacher resource)
 - [The Week in Rap](#) videos on current events
 - [September 6, 2019](#) The Week in Rap video, segment on human impact on the environment
- [4 Ways to Persuade](#) Logos, Pathos, Ethos, Passion (teacher resource)
- [10 elements of journalism](#) Truth, citizen loyalty, information verification, independence, power monitor, voice for citizens, storytelling with a purpose, comprehensive and proportional, personal conscience, citizen rights.
- [Types of Media Bias](#)- Student Daily News
- Walden University: [How to Write- Paraphrasing](#)

Sciences

- [Instant Egghead video #54: How does meditation change the brain?](#)
- [Source evaluation checklist](#)
- Support and extension:
 - [5 Human Impacts on the Environment- Crash course ecology #10](#)
 - [Khan Academy: Human activities that threaten biodiversity](#) (12:50)
 - [Science Daily: Biodiversity News](#)
 - [Human Population Growth and Extinction](#)

General

- [What is evidence?](#) video (1:40)
- Local scientists and journalist panelists:
 - Julia Lee, DLNR (invasive and endangered species)
 - Lisa Marten, Healthy Climate Communities (climate change implications)
 - Keven O'Brien, NOAA (Pollution: Marine debris, water quality)
 - Kelvin Wong, State Energy Office (Energy conservation, Zero Waste, Circular Economy)
 - Jerry Tune, retired environmental reporter for local newspaper

Reflection: considering the planning, process and impact of interdisciplinary inquiry

| Prior to teaching the unit | During teaching | After teaching the unit |
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| <p>This year's 7th graders tend to need quite a bit of monitoring and redirection when doing independent work. We would like to strengthen self-management skills, so will introduce the use of a "Mindful Bell" during independent activities.</p> <p>However, these students are also very passionate about the environment, so we anticipate strong engagement related to investigating human impacts on the environment.</p> <p>While these students appear to be less interested in writing, we think that</p> | <p>The majority of students are highly engaged with their self-selected topic, and this appears to be motivating students in the disciplinary grounding aspects of the unit. I.e. gathering and displaying solid scientific data and expressing it in a strong argumentative style.</p> <p>It may be that, due to the school's strong focus on and recognition of student activists this year, the journalism contest has spurred extra interest.</p> | <p>We are still waiting on the results of the Young Reporters for the Environment contest. However, for the most part, the articles were well written, using solid evidence and clearly passionate writing style.</p> <p>Additional formative feedback in terms of the disciplinary and IDU criteria was needed to develop the articles to a final product and to allow more students to reach the highest assessment levels, so we will plan this into future iterations of the unit.</p> |

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| <p>the idea of being journalists who help the environment, and the actual journalism contest will add a realistic context for their writing.</p> <p>We have contacted our learning support staff and the librarian regarding possible resources for both support and extension.</p> <p>There may be opportunities during this unit to explore the connection between “principled” and “communicators”. There is a line between informing others in a passionate manner about issues, and “sensationalizing” the issue, and we will be looking for current event reporting and other chances to explore what these learner profile traits mean in the context of this unit.</p> <p>As students’ article topics unfold, there may be opportunities for them to develop their own service projects, and summative task extensions in the form of PSAs, posters, podcasts (NPR style), and websites may be generated. We will also remind students to keep their 10th grade personal project in mind as they explore issues that are meaningful to them.</p> | <p>In order to strengthen student skills mini-workshops are being offered in data analysis, data representation and opening paragraph writing.</p> <p>Students have shown an interest in delving more deeply into the idea of “fake news”. This has opened up an opportunity to discuss bias in journalism and the use of persuasive techniques to sway public opinion in unprincipled ways. This provided a chance to discuss how “balance” is a critical part of “open-mindedness”. The web-service “The Flip Side” was introduced (provides “thoughtful and informed perspectives on major issues in the news”). Two students have expressed a possible interest in developing a “Flip Side” style website on environmental issues as a personal project.</p> <p>In order to build student understanding of the “ways of knowing” in sciences and language and literature, we invited the high school theory of knowledge teacher to present a brief summary of the differences and similarities in how these two disciplines interpret and communicate about the world. We have followed up with more focused discussion in terms of the contributions of each subject to this unit, which should support students in expressing their observations in ID criteria Aii, Bii, Ci. This will be built into the unit the next time it is taught.</p> | <p>We’re not sure if this same contest will run again next year, so are considering other options for public sharing of student research and journalistic , including a potential inclusion of media design in the IDU in order to also create PSA versions of student articles, and consider how imagery is also used as a persuasive format of communication regarding human impacts on the environment.</p> <p>The first teaching of this unit was intensely time-consuming in terms of planning. Now that we have experienced the timing of the disciplinary and interdisciplinary learning experiences, we can better pre-plan for the learning that occurs in whole group and separate subject group class periods. It would also be helpful if we could adjust the schedule next year to allow for at least one opportunity for back-to-back class periods per cycle so that a whole group, 3 hour block could be planned for each cycle</p> |
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