Digital Promise®

Project Planning Template

Career Cluster: Human Services	DURATION: Approximately 20 sessions, but can be modified to fit classroom schedules. (Session = 45 to 50 Minutes)	TEACHER:	U.N. SUSTAINABLE DEVELOPMENT GOAL: #13 — Climate Change

GLOBAL ISSUE OVERVIEW

As the overall temperature of the planet increases, there are countless negative effects on our environment. Such effects include melting of the polar ice caps, which causes rising of sea levels, and an increase in natural disasters on a global scale. According to the World Meteorological Organization, the years between 2013 and 2017 showed the highest average five-year global temperature ever on record. This increase in overall average temperature not only carries huge global environmental impact but economic impact as well. Life will be negatively altered, particularly for those in impoverished nations and small islands around the world. Immediate action is needed to combat the effects of climate change and to reduce our impact on the planet by limiting or eliminating the causes of this global phenomenon.

Climate change is somewhat controversial in that the cause can be highly disputed based on individual beliefs; however, most climate scientists agree that the cause of global warming is from the entrapment of heat by the atmosphere. The reason heat is not escaping the atmosphere is because a layer of greenhouse gas molecules is building up and acting like a thermal blanket around the earth. Gases that cause this greenhouse effect mainly include water vapor, nitrous oxide, methane, and carbon dioxide. Human activities such as deforestation and burning of fossil fuels are causing an increase these gases. Current scientific evidence proves that this greenhouse effect is a major contributor, if not the main reason, of global climate change.

Efforts are underway internationally to combat global climate change. For example, a global framework was developed at the U.N. Statistical Commission held in March 2016. United Nations Sustainable Development Goal (SDG) #13, in particular, outlines targets and indicators to move forward activities to help reduce greenhouse gases. These goals aim to:

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.
- Integrate climate change measures into national policies, strategies, and planning.
- Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning.
- Implement, as soon as possible, the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change, with a goal of jointly mobilizing $100 billion annually by 2020 to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization.
- Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing states, including a focus on women, youth, and local and marginalized communities.

At the individual level, there are many proposed solutions to preventing and/or lessening the production of greenhouse gases caused by human activity. The Intergovernmental Panel on Climate Change, which is considered the "leading international body on global warming," has given suggestions for the general population to help prevent global climate change:

- Buy fewer animal products, including milk-based products and meat.
- Eat food that is grown locally and is in season.
- Throw less food away.
- Drive electric cars.
- Walk, bicycle, or take public transportation.
- Use videoconferencing over travel for business.
- Dry clothes on a clothesline.
- Insulate your homes.
- Use less carbon-based products, such as plastic. (BBC, 2018)

Therefore, there are many ways, on both an individual and a global level, that we can work together to help combat climate change. With educational awareness and policy changes at the national and global levels, the effects of global warming can begin to be reversed. If changes are not made globally, however, the world may suffer serious consequences from an environmental perspective.

Global Competencies Addressed:
- *Investigate the World*: Initiate investigations of the world by framing questions, analyzing and synthesizing relevant evidence, and drawing reasonable conclusions about global issues.

- *Recognize Perspectives*: Recognize, articulate, and apply an understanding of different perspectives.
- *Communicate Ideas*: Select and apply appropriate tools and strategies to communicate and collaborate effectively — meeting the needs and expectations of diverse individuals and groups.
- *Take Action*: Translate ideas, concerns, and findings into appropriate and responsible individual or collaborative actions to improve conditions.

STANDARDS ADDRESSED

Career/Technical Knowledge and Skills	Academic Knowledge and Skills	21st Century Skills

Common Career Technical Core Career Ready Practices
4. Communicate clearly and effectively and with reason.
5. Consider the environmental, social, and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
12. Work productively in teams while using cultural global competence.
 	
Human Services
HU-2: Evaluate the role of the family, community, and human services in society and the economy.
  • **HU-2.2:** Describe the types of human services provided in a community.
  • **HU-2.3:** Evaluate the role human service providers have on the economic condition of a community.
	Next Generation Science Standards
	• **MS-ESS3-3.** Apply scientific principles to design a method for monitoring and minimizing human impact on the environment.
	• **5-ESS3-1.** Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.
	
	Common Core Academic Standards
	ELA/Literacy:
	• **RST.11-12.7.** Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
	• **RST.11-12.8.** Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
		Learning & Innovation Skills
		• Creativity & Innovation
		• Critical Thinking & Problem Solving
		• Communication
		• Collaboration

- **HU-PC-1:** Analyze basic principles of biology, chemistry, and human anatomy for safe and effective utilization and selection of personal care products and services.
- **HU-PC 1.5:** Explain interactions among tissues, cells, and organisms with each other and the environment.
- **HU-PC 1.6:** Determine needed services based on the principles of human anatomy.

HU-PC-6: Identify personal care business opportunities enhanced by community involvement, self-improvement, and current trends.
- **HU-PC 6.3:** Evaluate progress towards goals and self-improvement by using performance information.
- **HU-PC 6.4:** Research current techniques and trends to improve services.

PROJECT DEFINITION & GOALS/OBJECTIVES

This project stems from the United Nation's Sustainable Development Goals (SDGs) initiative. The SDGs are a set of 17 goals that aim to end poverty, fight inequality, and stop climate change. Specifically, this project focuses on Global Goal #13: Climate Change. Students will design a business plan for a salon that only uses sustainable products that do not harm the environment. This process will include an analysis of the science behind how their products and practices will have a positive impact on climate change by slowing or eliminating the production of greenhouse gases. This project closes with the students presenting their business plans to local salon owners and mock investors.

Goals:
- Students will gain understanding of the United Nations Sustainable Development Goals (UNSDG) initiative.
- Students will learn about the scientific reasoning behind climate change which will include learning about the production of greenhouse gases.
- Students will write a business plan.
- Students will use a design process to develop solutions to a complex real-world problem.
- Students will learn how to communicate their proposed solution to the general population.

Objectives:
- Investigate scientific evidence for the causes of climate change.
- Learn about the production of greenhouse gases and their effects on the environment.
- Evaluate the potential impact of your solution.
- Develop a business plan that only uses sustainable products and practices.
- Share the business plan with local salon owners and mock investors.
- Develop strategies for implementing a plan of action.

SCENARIO OR PROBLEM: What scenario or problem will you use to engage students in this project?

You are an entrepreneur working to open a salon that only uses natural and sustainable products and practices in order to provide healthier options for clients and to lessen negative effects on the environment. You must research the effect salons have on the environment, and design a business plan that addresses these issues. Consider the cost of going green and be sure to address it in your business plan. Make sure your plan addresses the following questions:

- Where will you source your sustainable products?
- Can these products be imported or will the environmental costs be too high?
- Can the business be sustainable?
- What are the potential health benefits for clients?
- How would you convey the benefits of these products (which may come at a higher cost) to clients?

You will present your business plan to local salon owners and mock investors.

Essential Questions	Grade Level Adaptations
- What is the value of changing the way one lives to help reduce greenhouse gas production and, in turn, affect climate change? - How can we support global efforts to reduce greenhouse gas production in our salons? - How do culture and economics affect climate change? - What are the impacts of global warming if it continues at the current rate? - What's the optimal strategy to reduce the warming of the earth's atmosphere? - What beauty/grooming products and/or services should be offered to promote sustainability? - To what extent do beauty products/services affect our health and well-being? - What ingredients should our beauty, grooming, health, wellness, etc. products contain (or omit) in a world of constantly changing advice from the experts?	For younger students, begin by introducing the concept of climate change and how humans contribute to the phenomena. Then, share that we can have a positive impact on the environment and climate change through the practice of reduce, reuse, and recycle. Focus a project on addressing waste and refuse at your school. Challenge the students to find ways to reduce or eliminate waste. Some examples might include: - A school compost pile - A makerspace with all reusable objects collected from the trash - Lead "A Day Without Paper" or a "Day Without Plastic" campaign - Increase knowledge of recycling practices - Start a school garden - Investigate common school chemicals (e.g., hand soap, hand sanitizer, whiteboard cleansers, etc.) and propose more eco-friendly alternatives

ASSESSMENT: How will you determine what students have learned? (Check all that apply.)			
FORMATIVE		**SUMMATIVE**	
Quizzes/Tests		Multiple Choice/Short Answer Test	
Notes/Graphic Representations	X	Essay Test	
Rough Draft		Written Product with Rubric	
Practice Presentation	X	Oral Presentation with Rubric	X
Preliminary Plans/Goals/Checklists of Progress	X	Other Product or Performance with Rubric	X
Journal/Learning Log	X	Self-Evaluation or Reflection	X
Other:		Evaluation by Authentic Audience	X
		Other:	

MATERIALS, RESOURCES, or CONSTRAINTS: What materials and resources will be needed? Are there any perceived challenges?

Materials:
- Computers with internet access
- Projectors/smart boards to deliver presentations
- Presentation rubrics (team and individual)

Internet Resources:
- U.N. Sustainable Development Goals
  - Goal #13: Climate Change
- NASA Global Climate Change: Vital Signs of the Planet
- EPA A Student's Guide to Global Climate Change
- Greencircle Salons
- Sustainable Salons
- Video Resources
  - United Nations Foundation's video, "A Look at the Sustainable Development Goals" (1:00). An introduction to the 17 Sustainable Development Goals from the United Nations Foundation.
  - PBS ReInventors' video, "Meet the Climate Game Changer" (5:02) A 17-year-old turns fighting climate change into a game.
  - Bill Nye's video, "Bill Nye Explains Climate Change with Emoji" (1:09) Bill Nye explains climate change using a language everyone can understand.
- Alejandra Borunda's article, "The Beauty Industry Generates a lot of Plastic Waste. Can it Change?" (*National Geographic*)

SUPPORT, MODIFICATIONS, AND EXTENSIONS: What is needed to provide support for students who have difficulty learning the content, modify for students with special learning needs, or to provide enrichment for advanced students?

Support & Modifications:

- Provide extra assistance to students in the form of a research workshop for those that need assistance in their research.
- Hold writing conferences with teams and individuals to assist in drafting their business plans.
- Allow students to interview (face-to-face or online through services like Skype or Google Hangouts) salon owners that practice sustainability.

Extensions:

- Students can create a blog that highlights current environmentally-friendly products on the market. They can rate the products based on ease of use, environmental impact, etc.
- Students can visit a place of business that is centered around making a positive environmental impact, such as a recycling facility, vegan restaurant, or hair salon that uses only environmentally friendly products.
- Students can create an educational campaign for the general public and a communication plan that helps the general public learn about climate change.
- Students can visit a facility where salon products are produced.

CALENDAR OF MAJOR LEARNING ACTIVITIES: What are the learning activities or tasks for each day? Are there any project milestones? When will formal assessment activities occur?

Week 1				
Monday	Tuesday	Wednesday	Thursday	Friday
Initiating: Lead a lesson and discussion focused on building awareness for SDG #13. Watch YouTube video on SDG#13.	**Initiating:** Continue the discussion on SDG #13 and its targets. Watch YouTube video by Bill Nye on climate change. Discuss how climate change affects individuals, communities, and the world.	**Initiating:** After context has been established, launch the scenario and lead a discussion focused on possible solutions allowing students to generate questions for further research.	**Planning:** Host a guest speaker from a local school of cosmetology to discuss sustainable products and practices employed in the salon industry or invite a local salon owner that employs a sustainable business model.	**Planning:** Individuals or in small teams, begin brainstorming ways salons can improve their sustainability practices.

Week 2				
Planning: Individually, or in small teams, students work together to gather data on salons and current practices. This data should include the science behind the production of products used in salons and how they are affecting the environment.	**Executing:** Students create a presentation for the rest of the class regarding the research they have found. Their presentation should include salon products and current practices and environmental impact.	**Executing:** Students create a presentation for the rest of the class regarding the research they have found. Their presentation should include salon products and current practices and environmental impact.	**Executing:** Students present their presentations and teacher facilitates a question and answer period for each of the presentations. *Formative assessment opportunity*	**Executing:** Students present their presentations and teacher facilitates a question and answer period for each of the presentations. *Formative assessment opportunity*
Week 3				
Executing: Watch "Sustainable Salons" (YouTube video). Lead a discussion on products that are environmentally friendly, and guide students to research products that might reduce greenhouse gases.	**Executing:** Students use their research and data collected regarding products and practices that reduce greenhouse gases to develop a business plan for a sustainable salon that uses sustainable products.	**Executing:** Students use their research and data collected regarding products and practices that reduce greenhouse gases to develop a business plan for a sustainable salon that uses sustainable products.	**Executing:** Students use their research and data collected regarding products and practices that reduce greenhouse gases to develop a business plan for a sustainable salon that uses sustainable products.	**Executing:** Students create a business plan and presentation for a salon that uses only sustainable products and practices and provide data on how it will have a positive effect on the environment.
Week 4				
Executing: Students create a business plan and presentation for a salon that uses only sustainable products and practices and provide data on how it will have a positive effect on the environment	**Executing:** Students share business plan and presentation with teacher. Offer suggestions on how to improve the business plan or the presentation, and give students a chance to revise and polish. *Formative assessment opportunity*	**Executing:** Students share business plan and presentation with you. Offer suggestions on how to improve the business plan or the presentation, and give students a chance to revise and polish. *Formative assessment opportunity*	**Closing:** Students present their business plan and presentation to authentic audience of local salon owners and mock investors in the school auditorium. Local salon owners and mock investors are able to ask questions of the presenters.	**Closing:** Students present their business plan and presentation to authentic audience of local salon owners and mock investors in the school auditorium. Local salon owners and mock investors are able to ask questions of the presenters.

				Summative assessment opportunity	*Summative assessment opportunity*

STUDENT REFLECTION ACTIVITIES: How will students reflect on their work? Add reflection questions and/or activities here.

- Allow time at the end of each day for students to journal on their progress with the project and list at least two insights learned.
- Require each student to complete an "Exit Ticket" where, at the end of each day, students provide a quick answer to a prompt you provide.
- Students can have a recap session lead by the teacher after the presentations to discuss some of the questions asked and share how they answered. Were they able to answer the questions asked? If not, what additional research is needed to answer that question? Would they modify their product based on the questions/suggestions from the presentation? What would they do differently next time?

Adapted from:
- "Sustainable Development Goals: Goal 1: Take Urgent Action to Combat Climate Change and its Impacts," 2018, New York: The United Nations. Retrieved from https://sustainabledevelopment.un.org/sdg13
- "Unit Planning Template" by the Southern Regional Education Board, n.d., Atlanta: Southern Regional Education Board.

Works Cited:
- BBC. (2019). *Climate change: Where we are in seven charts and what you can do to help*. Retrieved from https://www.bbc.com/news/science-environment-46384067