Asia Society | Center for Global Education

Project Planning Template

CAREER CLUSTER: Education & Training	DURATION: 20 Sessions (Session = 45 to 50 Minutes)	TEACHER:	UN SUSTAINABLE DEVELOPMENT GOAL: #4 - Quality Education

GLOBAL ISSUE OVERVIEW

Education is the foundation of a society's prosperity. The benefits of a quality education are far-reaching. When people are well educated, they increase the likelihood of breaking the poverty cycle, empowering themselves to live healthier lives of equality and increased affluence. Tolerant and peaceful societies are typically rooted in the quality of their educational systems

In regards to education and poverty in 2018, consider these facts from the Global Partnership for Education:

- If all children left school with basic reading skills, 171 million people could move out extreme poverty. That's equivalent to a 12% drop.
- Education increases earnings by roughly 10% per each additional year of schooling.
- Educational attainment explained about half of the difference in growth rates between East Asia and Sub-Saharan Africa from 1965 and 2010.
- In 2050, GDP per capita in low-income countries would be almost 70% lower if all children were learning in school.
- Increasing tertiary education attainment by one year on average would increase sub-Saharan Africa's long-term GDP by 16%.
- It is estimated that over 2 billion jobs will be lost to automation by the year 2030, requiring a more skilled and highly trained workforce.

Progress has been made toward ensuring quality education for the global population mostly in primary education, where enrollment has surpassed 90 percent. In addition, many developed countries' access to computers/the internet has reached 60 percent. Collectively, these improvements are outstanding, but they mask other challenges many underserved populations still face. Populations in sub-Saharan Africa and Southeast Asia make up a majority of the population not enrolled in school. Furthermore, gender equality persists. About one-third of women and girls in developing countries do not attend school. The data also demonstrates educational disparities between impoverished peoples, especially in rural areas, across all countries regardless of the country's economic prosperity.

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Given the importance and impact of education, the United Nations formed their fourth sustainable development goal: Quality Education. By 2030, the United Nations has set a goal to "Ensure inclusive and equitable quality education and promote lifelong learning for all." To achieve this goal, they have set forth ten targets. These targets focus efforts on improving educational access, gender equality, improving facilities, recruiting, training, and attaining quality educators, improving outcomes, and promoting global citizenship.

Global Competencies:

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** 2. Apply appropriate academic and technical skills. 4. Communicate clearly and effectively and with reason. 7. Employ valid and reliable research strategies. 8. Utilize critical thinking to make sense of problems and persevere in solving them. 9. Model integrity, ethical leadership and effective management. **Education & Training Career Cluster** • **ESS03.04.** Conduct technical research to gather information necessary for decision-making. • **ED 1.** Apply communication skills with students, parents and other	**Common Core Academic Standards** Mathematics Make inferences and justify conclusions from sample surveys, experiments, and observational studies. • **HSS.IC.B.3.** Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. • **HSS.IC.B.5.** Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. • **HSS.IC.B.6.** Evaluate reports based on data. 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	**Learning and Innovation Skills** Communication • *Communicate Clearly* ○ Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts. ○ Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade). Information, Media, and Technology Skills – Information Literacy • *Access and Evaluate Information*

groups to enhance learning and a commitment to learning. • **ED 2.** Demonstrate effective oral, written and multimedia communication in multiple formats and contexts.	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. • **RST.11-12.9.** Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. • **SL.11-12.4.** Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. • **SL.11-12.5.** Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, evidence and to add interest.	○ Access information efficiently (time) and effectively (sources) ○ Evaluate information critically and competently. • *Use and Manage Information* ○ Use information accurately and creatively for the issue or problem at hand. ○ Manage the flow of information from a wide variety of sources.

PROJECT DEFINITION & GOALS/OBJECTIVES

This project stems from the United Nations Sustainable Development Goals initiative (SDG). The SDG is a set of 17 goals that aim to end poverty, fight inequality, and stop climate change. Specifically, this project focuses on Global Goal #4: Quality Education with a focus on comparing elementary mathematics and pedagogy. This unit uses a design cycle based on the book *Launch,* by AJ Juliani and John Spencer.

In this project, teams of students investigate math readiness in elementary students within their community by comparing their data sets to that of Singaporean elementary students who consistently score higher on international comparisons of math knowledge. They then

compare the Singaporean math curriculum to that of elementary schools in their town, examining which is more effective. Student teams create an action plan to improve elementary math performance for their community based on their findings.

Goals

- The students will gain an understanding of the United Nations Sustainable Development Goals (UNSBG) initiative and develop empathy for other cultures.
- The students will acquire the skills necessary to research factors impacting global education.
- Students will develop solutions to a complex real-world problem.

Objectives

- Research math readiness and math performance of elementary students in your community.
- Research math readiness and math performance of elementary students in Singapore.
- Analyze and evaluate multiple data sets.
- Contextualize data by considering cultural norms, variables, and systemic differences.
- Draw conclusions based on thorough research.
- Develop action steps to improve math performance in your community based on data and research.
- Present findings and suggestions and convey reasoning to an authentic audience.

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

How can we improve math outcomes of all elementary students in our community? Your team has been tasked with investigating the differences and similarities between math curricula in your community's elementary schools to that of elementary students in Singapore. After analyzing the differences, you must create an action plan for elementary math readiness in your community and share your recommendations for effective math teaching strategies with district administrators, local school officials, and elementary teachers. Be sure your presentation includes both qualitative and quantitative data and uses a digital media platform to enhance the understanding and interest of the audience.

ESEENTIAL QUESTIONS	GRADE LEVEL ADAPTATIONS
• How could access to quality education improve the lives and well-being of the global population? • How do educational systems around the world compare to one another? • What does academic performance data tell us about instruction? What does it not tell us?	For upper-grade levels, you might consider requiring students to determine the statistical significance of several instructional approaches to justify any conclusions they have made.

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	
Preliminary Plans/Goals/Checklists of Progress		Other Product or Performance with Rubric	**X**
Journal/Learning Log		Self-Evaluation or Reflection	
Other:		Evaluation by Authentic Audience	**X**
		Other: 3D model	

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

Materials

- Computers with internet access
- Local elementary math data (standardized test results, curriculum overviews, etc.)
- Student journals

Internet Resources

- United Nations Sustainable Development Goals: https://www.globalgoals.org/
- Sustainable Development Goals Explained: Quality Education (YouTube video): https://www.youtube.com/watch?v=j65FEmRHTzk
- Sustainable Development Knowledge Platform, Quality Education: https://sustainabledevelopment.un.org/sdg4
- The Global Partnership for Education – 5 ways education can help end extreme poverty: https://www.globalpartnership.org/blog/5-ways-education-can-help-end-extreme-poverty
- Common Core Academic Standards: http://www.corestandards.org/
- PBS Parents: What's Singapore Math - http://www.pbs.org/parents/education/math/math-tips-for-parents/whats-singapore-math/

Constraints

- Ensure all student data privacy protections are known and adhered to.

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:

For students in need of support, provide templates for research and reflection. You might use any of the resources from the Buck Institute for Education (BIE). BIE is a nonprofit organization that creates, gathers, and shares high-quality problem/project-based learning instructional practices and products to support teachers and districts. BIE provides a wide range of resources for problem/project-based learning. You can access those resources here: http://www.bie.org/resources.

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
L – Look, Listen, & Learn Teacher (or guest) lead lesson and discussion focused on building awareness for SDG #4.	**L – Look, Listen, & Learn** Discussion on elementary mathematics comparing the local community's math curriculum to the Singaporean curriculum. How are they similar? How are they different? How might cultural differences and educational policy effect outcomes?	**A – Ask!** Discussion – students generate questions, and challenge assumptions. Teacher facilitates discussion and records questions for continued research.	**U – Understand** Invite local elementary teachers to attend a question and answer session with the class to better understand the community's elementary math curriculum.	**U – Understand** Host a video conference with math teachers from Singapore. Encourage students to ask questions that explore the similarities and differences between the curricula.
Week 2				
U – Understand Gather local elementary mathematics data from local sources as well as international data for Singaporean elementary students. Analyze the data	**U – Understand** Form teams of students and challenge the teams to create a visual display that compares and contrasts the local math curriculum and the Singaporean math curriculum. Displays should include data as well as observations. Have	**N – Navigate** Armed with research, data, and information, student teams brainstorm possible action steps to improve the local elementary math curriculum.	**N – Navigate** Students determine their finalized action plans; justifying their suggestions with data and anecdotal evidence. Students submit a brief summary of their recommendations and submit to the teacher.	**N – Navigate** Students strategize how to best share their action plan. Students consider digital media platforms (PowerPoint, Prezi, Video, etc.) and choose a means of communicating that enhances their message.

sources and make comparisons.	them share their visual with the class. *(formative assessment opportunity)*		*(formative assessment opportunity)*	Students plan out how best to deliver their message by considering their audience (teachers, administrators, school board, etc.).
Week 3				
C – Create Students are given work time to create their presentations.	**C – Create** Students are given work time to create their presentations.	**C – Create** Students are given work time to create their presentations.	**C – Create** Students are given work time to create their presentations.	**C – Create** Students are given work time to create their presentations.
Week 4				
H – Highlight & Fix Students deliver their presentation for the classroom as a practice round. Teacher and students provide feedback highlighting positives and making suggestions for improvement.Student teams consider feedback and make improvements. *(formative assessment opportunity)*	**H – Highlight & Fix** Students deliver their presentation for the classroom as a practice round. Teacher and students provide feedback highlighting positives and making suggestions for improvement. Student teams consider feedback and make improvements. *(formative assessment opportunity)*	**H – Highlight & Fix** Students deliver their presentation for the classroom as a practice round. Teacher and students provide feedback highlighting positives and making suggestions for improvement. Student teams consider feedback and make improvements. *(formative assessment opportunity)*	**LAUNCH!** Students deliver action plan presentations to their authentic audience. *(Summative Assessment)*	**LAUNCH!** Students deliver action plan presentations to their authentic audience. *(Summative Assessment)*

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

Student Reflection Questions/Stems

- Edutopia – Sample Reflection Questions: https://backend.edutopia.org/sites/default/files/pdfs/stw/edutopia-stw-replicatingPBL-21stCAcad-reflection-questions.pdf

- Buck Institute for Education – My Thoughts about the Project: http://www.bie.org/object/document/my_thoughts_about_the_project

Reflection Activities

- Using a site like Flipgrid, allow students to post video reflections of their work and development.
- Guide summary activities at the end of research days such as:
    - Two Dollar Summary: Students write summaries of what they learned, but each word is worth ten cents.
    - Gallery Walk: Students write or draw what they learned on large sheets of paper then walk through the "Gallery," reading each other's charts.

Adapted from: Southern Regional Education Board, Unit Planning Template, 592 10th St. N.W., Atlanta, GA 30318-5776