Inquiry Project Design Plan

Teacher/Designer Names: Accardi, Granitto, Hassell, Ruperto, Worrell **School: MLKA**	
Name of Project: The Neighborhood - 10701 * 411	**Grade Level: 7**
Est Launch Date: October 2023	**Est Duration (in weeks): 12**
Disciplines Involved: Science, ELA, Math, Social Studies, Spanish, Art	
Problem Statement: There are various problems within communities that are often remain unnoticed when it does not immediately effect specific groups. The impacts of the issues can be positive, neutral, and not so positive.	

STAGE 1: DESIRED RESULTS

Big Idea: Impact/Change

Enduring Understandings:	**Essential Question(s):** (MEANT TO BE SHARED WITH STUDENTS)
● Problems can be found all over the world, in every community. We can use skills we learn across subjects to solve these problems. ● ●	How do humans impact our neighborhood? What is the impact of humans in our neighborhood?

Established Goals (Standards, Performance Indicators, Learning Goals):
*choose relevant standards to unit/project plan timing and learning goals; do not need to use all disciplines below.
** unpack into SWK and SWBAT under identified standards as this will lead to aligned assessment design

Science Standards (list if using, unpack under each standard into SWK and SWBAT)**:**
NGSS Standards Addressed:
- NGSS Standard for Scientific Inquiry: Use appropriate tools and techniques to gather, analyze, and interpret data (MS-LS1-5).
- NGSS Crosscutting Concept: Patterns (MS-LS1-2).
- NGSS Science and Engineering Practice: Developing and using models (MS-LS1-8)

SWBAT:
- ∉ Develop scientific questions related to our neighborhood.
- ∉ Design and conduct controlled experiments to investigate scientific phenomena.
- ∉ Collect, analyze, and interpret data using appropriate tools and techniques.
- ∉ Identify patterns in data and draw scientific conclusions.
- ∉ Communicate scientific findings using appropriate scientific language and visual representations.

Social Studies Standards (list if using, unpack under each standard into SWK and SWBAT)**:**

A. Gathering, Interpreting and Using Evidence
1. Define and frame questions about the United States that can be answered by gathering, interpreting, and using evidence.
2. Identify, select, and evaluate evidence about events from diverse sources (including written documents, works of art, photographs, charts and graphs, artifacts, oral traditions, and other primary and secondary sources).
3. Analyze evidence in terms of historical context, content, authorship, point of view, purpose, and format; identify bias; explain the role of bias and audience in presenting arguments or

Inquiry Project Design Plan

evidence.
4. Describe and analyze arguments of others, with support.
5. Make inferences and draw general conclusions from evidence.
6. Recognize an argument and identify supporting evidence related to a specific social studies topic. Examine arguments related to a specific social studies topic from multiple perspectives. Recognize that the perspective of the argument's author shapes the selection of evidence used to support it.

SWK:

- ∉ The definitions of culture and government
- ∉ How to manipulate primary and secondary sources
- ∉ The definitions of social studies key terms: historical context, content, point of view, purpose, bias, audience

SWBAT:

- ∉ Identify problems with the government
- ∉ Analyze different approaches to change – via laws, advocacy, etc
- ∉ Describe and detail plans for their "utopia" community

Mathematics Standards (list if using, unpack under each standard into SWK and SWBAT)**:**
7.SPA.A.1: Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.
7.SP.A.2 : Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

SWK:

- ∉
- ∉
- ∉

SWBAT:

- ∉
- ∉
- ∉

ELA Standards (list if using, unpack under each standard into SWK and SWBAT)**:**

Craft and Structure:
7R4: Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings. Analyze the impact of specific word choices on meaning, tone, and mood, including words with multiple meanings.

Writing:
7W1: Write arguments to support claims with clear reasons and relevant evidence.
7W1a: Introduce a precise claim, acknowledge and distinguish the claim from a counterclaim, and organize the reasons and evidence logically.
7W1b: Support claim(s) with logical reasoning and relevant evidence, using credible sources while demonstrating an understanding of the topic or text.
7W1c: Use precise language and content-specific vocabulary to argue a claim.
7W2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

Speaking and Learning:
7SL1: Engage effectively in a range of collaborative discussions with diverse partners; express ideas clearly and persuasively, and build on those of others.
7SL1a: Come to discussions prepared, having read or researched material under study; draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
7SL1b: Follow norms for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.

Inquiry Project Design Plan

SWK:

- ∉ The standard conventions of English writing including revisions, editing, etc.
- ∉ The basic undertanding of technology
- ∉

SWBAT:

- ∉ Write claims to identify problems in the community
- ∉ Work towards creating solutions to those problems through peer-led discussions
- ∉ Read and write informative texts to examine topics and explain ideas and concepts

Technology Standards:

- (MSLS1 1) Interdependence of Science, Engineering, and Technology. Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.

Social Justice Standards:

- DI.6-8.7 I can accurately and respectfully describe ways that people (including myself) are similar to and different from each other and others in their identity groups.
- DI.6-8.8 I am curious and want to know more about other people's histories and lived experiences, and I ask questions respectfully and listen carefully and nonjudgmentally.
- DI.6-8.9 I know I am connected to other people and can relate to them even when we are different or when we disagree.
- DI.6-8.10 I can explain how the way groups of people are treated today, and the way they have been treated in the past, shapes their group identity and culture.
- JU.6-8.12 I can recognize and describe unfairness and injustice in many forms including attitudes, speech, behaviors, practices and laws
- JU.6-8.13 I am aware that biased words and behaviors and unjust practices, laws and institutions limit the rights and freedoms of people based on their identity groups.
- JU.6-8.14 I know that all people (including myself) have certain advantages and disadvantages in society based on who they are and where they were born.
- JU.6-8.15 I know about some of the people, groups and events in social justice history and about the beliefs and ideas that influenced them.

Other (Art, SEL, etc):

Links to Standards/Reference Frameworks:
NYS NextGen ELA and Math, NGSS, NGSS by DCI Nat'l C3 SS Framework, NYS K-8 SS Standards, ISTE, Social Justice Standards, CASEL SEL Framework, NYS CS and Digital Fluency

Teaching/Learning Goal Notes for Stage 1:

Inquiry Project Design Plan

STAGE 2: EVIDENCE & ASSESSMENTS:

Performance Task Narrative

Goal: Students will conduct research on problems in the community that have been predetermined (by teachers) and what solutions they believe can be implemented to solve the problem. The goal is for students to utilize various means of technology and research to understand problems and challenges within a specified geographical area.

Role: Students will reasearch and collect data and develpo a strategy to solve the problem. Each student or group of students will be assigned a job that involves exploring south Yonkers using technology as well as collecting data from primary sources in their community.

Audience: *Identify the target audience within the context of the scenario.*

Students will invite local politicians and experts to hear their claims. Students will lead discussions with these experts to cultivate ideas on how to fix the issues they developed in their research.

Situation: *Set the context of the scenario. Define the narrative.*

Students will focus study in all core classes on our community. They will use each subject to develop ideas on what the community needs and different ways to accomodate each need.

Product(s): *Clarify what the students will create and why they will create it.*

- Various graphs to illustrate statistics for research
- 3D printing models – culminating project
- VR Infographic – social studies

Criteria for Success): *Provide students with a clear picture of success. Identify specific standards for success such as rubrics, checklists, quizzes, etc.*

- ❑ Rubrics
- ❑ VR Presentations
- ❑ Video Drone Presentation
- ❑ 3D Printer Product

Other Evidence/Assessments:

Inquiry Project Design Plan

STAGE 3: THE LEARNING PLAN:

Learning Activities

(potential layout below. Can be daily, divided by periods, or even using the Engineering Design Process to divide into stages such as Ask, Imagine, Plan, Create, Improve)

Week 1

Learning Goals:
Science:

Learning Events:
Science:
Week 1: Introduction to the Scientific Method
Lesson 1: Understanding the Scientific Method
- Introduce the scientific method and its importance in scientific investigations.
- Discuss the components of the scientific method: observation, question, hypothesis, experiment, data analysis, and conclusion.
- Engage students in a guided class discussion on how the scientific method is applied in everyday life situations.
- Provide examples of scientific investigations carried out in different fields not only science to illustrate the scientific method in action.

Lesson 2: Developing Scientific Questions
- Review different types of scientific questions (e.g., descriptive, comparative, causal).
- Explore the neighborhood as a source of scientific questions.
- Assign students the task of developing their own scientific questions relevant to our neighborhood.
- Discuss and provide feedback on the scientific questions developed by students.

Lesson 3: Formulating Hypotheses
- Review the concept of a hypothesis and its role in scientific investigations.
- Teach students how to write testable and falsifiable hypotheses.
- Engage students in a group activity where they generate hypotheses related to the scientific questions they developed in the previous lesson.
- Provide guidance and feedback as students develop their hypotheses.

ElA
Social Studies
Math

Formative Assessments:
Science
- Assess students' understanding of the scientific method through class discussions, group activities, and written reflections.
- Evaluate students' experimental design skills through their developed experiments and data collection techniques.

Inquiry Project Design Plan

ElA
Social Studies
Math

Notes/Resources:

Science
ElA
Social Studies
Math

Week 2

Learning Goals:
Science
Week 2: Applying the Scientific Method in Our Neighborhood
Lesson 4: Designing Experiments
- Review the importance of controlled experiments in scientific investigations.
- Introduce the concept of variables: independent, dependent, and controlled.
- Guide students in designing experiments to test their hypotheses related to the neighborhood.
- Emphasize the need for clear procedures and data collection methods.
- Provide students with materials and guidance for conducting their experiments.

Lesson 5: Collecting and Analyzing Data
- Teach students how to collect data using appropriate tools and techniques.
- Guide students in recording and organizing their data for analysis.
- Introduce different ways to visually represent and analyze data (e.g., tables, graphs).
- Allow students to analyze their collected data and identify any patterns or trends.

Lesson 6: Drawing Scientific Conclusions and Communicating Findings
- Assist students in drawing conclusions based on their data analysis.
- Discuss the importance of drawing valid conclusions supported by evidence.
- Guide students in presenting their findings using scientific language and visual representations.
- Provide opportunities for students to share their findings with the class through presentations or displays.

ElA

Social Studies

Math

Learning Events:
Science

ElA

Social Studies

Inquiry Project Design Plan

Math

Formative Assessments:
Science
- Assess students' ability to analyze data, identify patterns, and draw valid scientific conclusions.
- Evaluate students' scientific communication skills through their presentations or displays of their findings.

ElA
Social Studies
Math

Notes/Resources:

Week 3

Learning Goals:

Learning Events:

Formative Assessments:

Notes/Resources:

Week 4

Learning Goals:

Inquiry Project Design Plan

Learning Events:

Formative Assessments: