EPICS and Service-Learning

At a Glance

Lesson 4- Community Demographics

Essential Question: What are the demographics of my community? How will this information help me determine the needs of my neighborhood?

Standards

NGSS HS. Engineering Design
Students who demonstrate understanding can:
HS-ETS1-1. Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

Common Core State Standards Connections:
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. (HS-ETS1-1),(HS-ETS1-3)

Mathematical Practices– MP.2 Reason abstractly and quantitatively.

Materials

- Video- Cycle of Service- Montgomery County, MD
- Multimedia presentation
- Student Sheets
- Student notebooks
- Student debrief slips

Activities

Activity	Name of the Activity	Photocopies	Materials
1	Preparation for Class - 1.3 and 1.8- Teacher Toolbox. Assigning Team rolls- 1.13 Teacher Toolbox- Roles and Responsibilities.		Student page Video- Cycle of Service- Montgomery County, MD
2	Standards Statement (Option: Unpacking the standards Teacher toolbox 1.12- Unpacking the standards)	4Student Sheet	PowerPoint Presentation 4 Student Sheet
3	Video- Cycle of Service- Montgomery County, MD Understanding community demographics.		Video embedded in PowerPoint 4 Student Sheet
4	Investigating community demographics		PowerPoint Presentation 4 Student Sheet 4 Community demographic data sheet
5	Reflection and Formative Assessment	Student exit Slips	PowerPoint Presentation Notebook Formative Assessment Sheet

Overview

Many times, the demographics of a community dictate the resources that are available for its members, so it is an important part of the needs assessment to determine the socio-economics of a neighborhood. Students will be exploring this information to determine if there is data that can be used to determine a need in the community that can be addressed through an engineering project.

EPICS HIGH

1

Major Concepts
- Identify demographic factors that can determine needs
- Building Self-Efficacy through cooperative learning strategies.
- Notebook and team building.

Objectives
Students will:
- Identification of possible needs in the community based on demographics.
- Identify socio-economic factors that impact the standard of living in the community.
- Continue to build notebooking reflection and teaming skills.

Lesson Preparation

Preparation
- **Lesson Preparation**: For specific directions on preparing lesson materials, see 1.3 and 1.8 documents in the Teacher Toolbox

- **Instructional Resource:** Make sure that you have the *PowerPoint presentation* and the *video*- Cycle of Service- Montgomery County, MD ready for class viewing.

• Procedure

Activity 1: Preparation for the Class

Multimedia Presentation: This lesson will have a multimedia presentation that will help to get the students thinking about the lesson and walking them through the information. Download the presentation in the folder to have the videos attached.
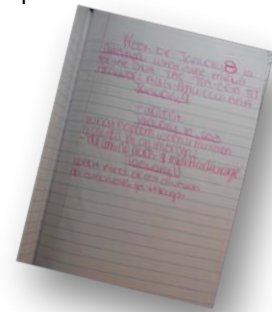
Preparing the notebooks- see document 1.3 in the Teacher Toolbox for specific instructions concerning notebooking.

Line of Learning. Have the students reflect on the following question.

4 Reflecting on the demographics of our community
Question: How do you think the demographics of your community will impact potential projects? Be sure to date your entry.

Team Roles and Responsibilities- For more detailed information about team roles; use 1.13 Teacher Toolbox Team Roles and Responsibilities.

Activity 2: Unpacking the Standards

Class Explanation: The students will be exploring how culture and traditions help to determine the needs of a community and identify sections of the populations that are under served. Because identifying needs in a community are based on exemplary listening skills, the standards that are used in this lesson revolve around the Common Core ELA reading skills and being able to draw conclusions from data.

Note to Teacher: Look above to see the standards that will be addressed through this lesson. The students need to understand the focus of the lesson, so an examination of the standards is a way of addressing this lesson essential.

Here is a possible Standard Statement which incorporates the standards used in this lesson:

> *Students will be using mathematical practices along with reading and writing skills to explore demographic information to determine if there is data that can be used to determine a need in the community that can be addressed through an engineering project.*

Optional Lesson Component: As an additional component for this lesson, you may use Teacher toolbox 1.12- *Unpacking the standards in a Student Centered Classroom.* This gives procedures to help your students create their own standards statement.

- Pass out the student sheets

Activity 3: *Understanding Demographics and how that information can be used to identify needs.*

Note to teachers: In this first activity, the students will be watching a short video entitled *Cycle of Service from Montgomery County Maryland.* This video gives a short glimpse into the partnership that has developed in the community to meet the needs of its citizens. The city council was examining demographic data and trends to identify those citizens who are most in need and potential projects that would serve this portion of the population.

1. **Engaging prior knowledge-** Think about your community and neighborhood.
   - **Discussion:** Can you think of one need that you have noticed? Can you think of one section of the population that is in need?
   - This video is an example of a community looking at their demographics and the trends that they see to determine how they might be able to serve the needs of their citizens who are most in need.

1. **Watch the video- Cycle of Service- Montgomery County, MD.**
   Essential Question: What needs were discussed in this video that might also be a need in your community?

In Groups Discussion:
   What needs did this video bring to light for this community?
   Discussion:
   - Students will discuss and defend their answers.
   - Remind the students the difference between service-learning and volunteerism. In service-learning, the student is also learning academic skills while serving.
   - What would be a service-learning component of this service?
     (An example might be students developing a data base for the food bank to keep track of items coming in and out of the pantry. Or students creating web pages for a community organization)

Note to teachers: Circulate among the teams as they discuss what needs based on demographics that are happening within this context of this video. This is just a short introduction but there are hints about the demographics and the needs of the underserved within the community.

2. **Whole Group: Share out:** Have the groups share out examples of needs and the demographic component that would influence that need within the community.
   (Example- low income would relate to needs within a food bank. High ESL population might mean a need for English classes to mentor the population)

   - Have your class scribe create a list for the class.

Activity 4: *Investigating Community Demographics*

Note to teachers: In this next section you will need to find demographic information for your community.
Here are some very cool sites that might be able to help:
http://www.city-data.com/- This site gives information based on zip code.
Additional resources:

EPICS/HIGH

School web site- this will give you demographics about free and reduced lunch statistics which will give information about poverty rates.

County web sites- This will give you information about service organizations which might be able to help with finding a partner for your service-learning.

City web sites- this will also give you important statistics about crime in the neighborhoods.

Introduction: You can see where demographic information is a great tool for identifying needs within a community. In this next activity we are going to explore the demographics of our own community by using Internet resources.

Instructions:
- Look at your Demographic information sheet. Divide your group to gather information.
- You are going to use the demographic information form to gather information about the demographics in your community and how it would impact needs.
- You will also need to make inferences about how that information would impact the standard of living for different citizens in your community and how that need might be a starting point for a service-learning project.

In Groups: Compiling information:

Within the groups have the students discuss some of the important demographic information for the community.
- Did these statistics raise questions that you had never thought about?
- How can you use that information to identify possible stakeholders for projects?
- What do you think you could learn from these questions and serving the stakeholders through a project?
- How can answering these questions about ourselves help our team in our service-learning project?

Note to Teacher: Circulate among the teams as they discuss the information. Make sure that the students are reflecting and writing information in their notebooks and on the demographic sheets. This will be an important artifact as they begin to develop a plan for a service-learning project.

Students will compile the information from the data in their group to determine if there are any similarities within their groups.

Whole Group:
Community demographic information:
- After looking at this initial data, are their underrepresented sections of the community that are not having a voice through this activity?
- An example: A community might have a portion of the population that is homeless. This would represent an underrepresented section of the community. Another example might be disabled Veterans who live in the community. They might not have their needs voiced as a community concern.

Group Assignment:
- Create a narrative explaining the demographic needs within the community that you have discovered through reviewing information.
- Discuss your findings with other members of your team and create a team document for your group with the following information to be sure to address:
  o Demographic characteristics
  o Economic characteristics
  o Housing information
  o Potential community partners

Each member of the team will be responsible for the narrative so it would be advisable to divide the work load and compile the information.

Students must examine document 4 Reflection: community demographics to determine the criteria for the reflection.

Activity 5: Wrap-Up: *Reflection and Formative Assessment*

1) **Back to the Standards:**
   Go back to the original class document about the standards.

EPICS/HIGH

Ask the students did they:

- o Examine the demographic and economic information for their community?
- o Did this investigation give a beginning glimpse into possibly underserved members of the community?
- o Use researching skills and critical thinking skills to be able to synthesize the information from the data into a reflective document?

2) Formative Assessment and student reflection: Last 5 minutes of class

- Pass out the *student exit slips*. This will give you an idea of what they have learned in the lesson.
- Make sure that they students have their *notebooks open* with their sheets taped in their books.

Notebook check:

As the students are filling out the slips, walk around the room and check to make sure that the student have the following information in their notebook:

- ✓ Completed 4 student sheet.
- ✓ Completed the group reflection of the demographics of their community.
- ✓ Have the students turn in the student exit slip.

3) Teacher Reflection: Look at the student's debrief, the reflective document about the demographics of the community and the student notebook. Have the students accomplished the objectives for the lessons?

Questions:

- ✓ Have the students expressed an understanding of the basic demographics and economic trends of the community that will be used as a beginning document for the needs assessment?
- ✓ How are the students reflecting in their notebook?
- ✓ Are the students able to work effectively and efficiently in their groups?
- ✓ Are there any interventions that may need to happen to improve these skills?
- ✓ Are the students showing self-efficacy when reflecting on their own learning in the class?

Resources:

- Montgomery Community Media- Montgomery County, MD*.*
- *Cycle of Service video-* http://www.youtube.com/watch?v=4Yx0XZBMq4k
- NGSS Lead States. (2013). Next Generation Science Standards: For States, By States. Washington, DC: The National Academies Press. For more information see http://www.nap.edu/NGSS/
- National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts and literacy in history/social studies, science, and technical subjects.* Washington, DC: Authors.

EPICS/HIGH