Individuals and Their Impact on Community
An Integrated Thematic Unit

Created By:

Talley Clyde
Sarah Frisina
Jen Bourdeau
Justine Orzel

December 13, 2006
EEDUC 6137.01

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Introduction

Middle school students are at an age where they are capable and ready to begin taking responsibility for their actions as individuals and as members of various types of communities. However, in order for them to head in this direction they must first have an understanding of what a community is and how one is able, if they so choose, to make an impact on his or her community. Individuals and their Impact on Community is a ten week integrated thematic unit that will provide eighth grade students with the tools that they need to enter into the communities that make up their lives (such communities may include but are not limited to school, sports teams, religious groups, and town) as responsible, aware, and motivated citizens. By the end of this unit the participating students will be able to understand how they can stimulate social change and consciousness within their communities by taking the initiative to become well-informed individuals.

The unit will kick off with two days of activities that will introduce the students to the idea of community and how people can work together to achieve a common goal. Day one will consist of group building activities in the gymnasium in which the entire team will participate. Games such as the human knot, trust falls, and name-games will allow students to work together and to understand that certain things are impossible to do without the cooperation of those around you. The second day will revolve around a team wide field trip into the city of Boston in which we will take part in a community service project with CityYear. The actual service project will be followed by a debriefing/lunch session in the Boston Commons in which students will break into small groups with teachers and CityYear representatives to discuss how they feel about the importance of playing a part in their communities.

Prior to the start of this entire unit the four core teachers will have worked to uncover the most pressing issues presently affecting the local town community. The students will move from their CityYear field trip to learning and researching about these four topics (funding for extra curricular activities, energy efficiency, littering, and literacy) in order to create a town wide survey to discover which of the four issues the local citizens feel is the most urgent and should be addressed. While creating the survey and surveying the local community the students will simultaneously be learning about various aspects of community in Math, English, History, Science, Technology, and Physical Education with the intention of presenting their findings about the winning issue at a town meeting that will take place during the tenth, and last, week of this integrated thematic unit. Preceding the town meeting students will partake in a week and a half of enrichment activities in the four main content areas and the two unified arts. During this enrichment period students will be able to choose the subject area that they want to concentrate on in order to prepare for various components of the town meeting.

Finally, we will conclude with a celebration for all who contributed to the unit and the town meeting (community members, guest speakers, newspaper reporters, families, etc.) that will include an affirmation activity and open mic session. As people arrive to the party they will write their name on a slip of paper and place it in a bowl. Once everyone has arrived they will draw names from the bowl and write letters to the person they chose thanking them for the contributions they made to the ten-week unit. Attendees at the party will also have an opportunity to talk to the group as a whole about

what they took away from this unit in an open mic session. This final gathering will allow students, teachers, and others who participated to show their appreciation for each other and to feel closure with the unit as a whole.

It is our intention as educators that the students involved in the unit Individuals and their Impact on Community take away a good sense of self as well as an understanding of the importance of being socially aware and active. Students will be able to demonstrate an understanding of what it means to be a part of a community, whether it be a small community such as an after school group or a large community such as a town, and how one can make a difference within those groups. This unit will fittingly take place at the beginning of the school year in order to create an atmosphere of camaraderie and instill in our students the values that are needed to work together as a team for an entire school year.

Affective Goals

Asking good questions/Being Attentive – guest speaker, statistician
Cooperating and Collaborating – with each other, across disciplines
Finding Eloquent Solutions – knowing where to look for answers
Searching for Patterns – looking for "big ideas"

Content Goals

See individual sections for frameworks

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Social Studies

History Curriculum Frameworks Addressed

During this unit students will draw upon prior knowledge and obtain new knowledge based on the following curriculum frameworks:

US1.15 Explain the varying roles and responsibilities of federal, state, and local governments in the United States.

US1.17 Explain the major components of Massachusetts' state government, including the roles and functions of the governor, state legislature, and other constitutional officers.

US1.18 Explain the major components of local government in Massachusetts, including the roles and functions of school committees, town meetings, boards of selectman, mayors, and city councils.

US1.19 Explain the rights and responsibilities of citizenship and describe how a democracy provides opportunities for citizens to participate in the political process through elections, political parties, and interest groups.

Resources Use

- Non-fiction magazine and newspaper articles
- Examples of various types of surveys
- Internet
- Town website
- Social Studies textbook

History Lesson Plans

Week 1

Day 1 - Launch

Includes Group Building Activities and get-to-know-yous. As this unit commences at the initial phase of an academic year, it is extremely important the kids be encouraged to interact from the get-go.

Day 2 - Kick-Off Activity/Definition of Theme and ITU

This day will involve a community service project, coordinated with our local CityYear affiliate. The important part of the day will be the debriefing process that follows the service project, as we want the students to think about their local community and the types of issues that impact that community.

Days 3-5 - Introduction to Community

History lesson plans during these three days will be focused around the various types of communities that exist in our world today, both locally and globally. Students will brainstorm and discuss communities such as schools, towns, sports teams, religious groups, countries, cultures, and so on in order to develop a basic understanding of what qualities and characteristics make up certain communities.

Students will also engage in a simple interviewing process in which they ask their family members what kinds of communities they identify with and why. Findings will be shared and discussed in class.

Week 2

Days 6-10 - Issue Overview

History classes will spend the week learning about littering as a topic in general and how it affects their local town community. As a means of providing them with background knowledge students will be provided with articles that explain what littering is and the means that are taken to reduce it. Information will be read and discussed in class. Discussions will also revolve around what the students have observed in terms of littering in their town, the effects that it may have or not had on their town, as well as what they do in their own lives to either add to or curtail littering.

Once students have gained a general understanding of the issue they will be provided with time to use the Internet in order to further research the effects of littering on our global community as well as various anti-littering campaigns and programs that exist throughout our country.

Week 3

Day 11 - Guest Speaker – Math Content (Statistician)

As a precursor to creating our community survey the entire team will be visited by a statistician in order to learn more about what surveys consist of, what makes a survey valuable, and how they are used to synthesize data and information.

Days 12-15

Students will learn about different social research methods such as mail surveys, group administered surveys, household drop-offs, personal interviewing, phone interviewing, Internet surveys, and surveys found in newspapers or magazines. The class will then discuss and create lists of the various advantages and disadvantages of each type of survey.

Week 4 and Week 5

Days 16-25 - Collaboration between Social Studies and English

Interviewing Skills and the Functions of Local Government

In preparation for the town meeting it is imperative that students are able to identify, recognize, and explain the functions of the different components and people that make up their local government. Students will start big by briefly reviewing the ways in which their state government works and who are the central figures within it. From there they will move to their own town government and spend the majority of the two weeks focused on the “what”, “who”, “how”, “when”, and “where” of their local town government. This will include, but is not limited to, discovering the answers to questions such as: What committees and roles make up our town government and what do they do for our community?;

Who are the elected officers of our town government?; Who is able to participate in things such as town meetings and school committees?; How do people get involved or run for office?; When and where do meetings, elections, etc. take place?

These two weeks will result in a visit by a town selectman who will be able to provide the students with some insight into their local government and will be able to discuss what his or her job entails. Students will be prepared with thoughtful, provoking, and intelligent questions for our visitor based on the work they have been doing in English class during these same two weeks.

Week 6

Days 26-30

Each of the four History classes will spend some time this week nominating and voting on class officers based on the things they have learned thus far. If those that are recommended accept their nomination they will prepare and give a speech as to why they think they are the best person for the job and will excel in leading their classroom community. The class will hold vote that simulates a real vote as much as possible and the winners will hold their positions for the remainder of the year unless they cannot fulfill their duties.

Each section will choose what kinds of positions should exist in their class. They may include, but are not limited to, class mayor, class committee, class secretary, and class treasurer.

Week 7and Week 8

Days 31-40 - Class Debate "The Rights and Responsibilities of Citizens"

These two weeks will focus on the rights and responsibilities that citizens have within government. Students will discuss the ways in which citizens can participate in government and whether or not they have a responsibility to participate in government through elections, town meetings, editorials, etc. Students will research percentages of people that participate in national elections, state elections, and local elections. They will also search out specific elections and occurrences that can help demonstrate the ideas being discussed (for example, the 2000 Presidential election).

Once students have obtained a knowledge base on this particular concept they will be broken into two groups for a class debate. One group will take the stance that citizens have a responsibility to be educated on and participate in the government, both locally and nationally. The other group will take the stance that citizens do not have a responsibility to be involved in local and national government. Each group will have at least one class period to convene and come up with major points, issues, and concrete examples to support their “opinion”. The debate will then be followed by a debriefing session in which students can discuss what they learned and how it has shaped their view of how an individual can impact his or her community, not only from the debate but from the past eight weeks as well.

Week 9 and Week 10

Days 41-48 - 2-Week Enrichment Soliciting Community Involvement

Students who choose the history component for the two weeks of enrichment will become the "public relations" experts. Students will use skills learned in all subject areas to draw up professional fliers, letters, and newspaper ads that can be passed out in the school, in the town, and run in the local newspaper explaining what they have learned during this unit and why they think it is important. The ultimate goal is to get as much support from the local community at the town meeting as well as to have their accomplishments covered by the local newspaper or television station.

Day 49 - Culminating Event – Town Meeting

Students will address the members of the town government and other attendants with a speech and accompanying graphics that support their claims for energy efficiency. They will have learned the function of local government to be able to explain why they chose to present the information in such a manner.

Day 50 - Party – "Thank You Notes"

Students will enjoy a day to appreciate each other and the people who had a successful impact on their understanding of the unit. We will look for students to express their thoughts regarding "community" and whether or not their understanding of community has changed for them over the past ten weeks. We will also ask that every student pick a name to write a "thank you note" that expresses their thoughts about the other's contributions to the unit. It should be a time of affirmation, affection, and adjournment.

English

<u>English Framework Standards Addressed</u>

LANGUAGE

General STANDARD 1: Discussion

Students will use agreed-upon rules for informal and formal discussions in small and large groups.

1.4 : Know and apply rules for formal discussions (classroom, parliamentary debate, town meeting rules).

GENERAL STANDARD 3: Oral Presentation

Students will make oral presentations that demonstrate appropriate consideration of audience, purpose, and the information to be conveyed.

3.12: Give oral presentations to different audiences for various purposes, showing appropriate changes in delivery (gestures, vocabulary, pace, visuals) and using language for dramatic effect.

3.13: Create a scoring guide based on categories supplied by the teacher (content, presentation style) to prepare and assess their presentations.

READING AND LITERATURE

GENERAL STANDARD 8: Understanding a Text

Students will identify the basic facts and main ideas in a text and use them as the basis for interpretation.

For informational/expository texts:

8.26: Recognize organizational structures and use of arguments for and against an issue.

8.27: Identify evidence used to support an argument.

8.28: Distinguish between the concepts of theme in a literary work and author's purpose in an expository text.

COMPOSITION

GENERAL STANDARD 19: Writing

Students will write with a clear focus, coherent organization, and sufficient detail.

For informational/expository writing:

19.21: Write reports based on research that include quotations, footnotes or endnotes, and a bibliography.

19.22: Write and justify a personal interpretation of literary, informational, or expository reading that includes a topic statement, supporting details from the literature, and a conclusion.

GENERAL STANDARD 21: Revising

Students will demonstrate improvement in organization, content, paragraph development, level of detail, style, tone, and word choice (diction) in their compositions after revising them.

21.6: Revise writing to improve organization and diction after checking the logic underlying the order of ideas, the precision of vocabulary used, and the economy of writing.

GENERAL STANDARD 24: Research
Students will gather information from a variety of sources, analyze and evaluate the quality of the information they obtain, and use it to answer their own questions.
24.4: Apply steps for obtaining information from a variety of sources, organizing information, documenting sources, and presenting research in individual projects:
- differentiate between primary and secondary source materials;
- differentiate between paraphrasing and using direct quotes in a report;
- organize and present research using the grade 7–8 Learning Standards in the Composition Strand as a guide for writing;
- document information and quotations and use a consistent format for footnotes or endnotes; and
- use standard bibliographic format to document sources.

GENERAL STANDARD 25: Evaluating Writing and Presentations
Students will develop and use appropriate rhetorical, logical, and stylistic criteria for assessing final versions of their compositions or research projects before presenting them to varied audiences.
25.4: As a group, develop and use scoring guides or rubrics to improve organization and presentation of written and oral projects.

Resources Used

Text
Seed folks, Paul Fleischman

Other Sources
Newspaper articles
Literacy
"Community"
Survey data and examples
Interviews, misc.

Interactions with librarians to learn:
Primary sources (what they are and how to use them)
Secondary sources (what they are and how to use them)
Research methods
How to conduct a search of the library catalog
How to conduct a search on the Internet
What sources are "legitimate" on the Internet?

Week-to-Week Layout of English Lessons

Week 1
Day 1 - Launch

Includes Group Building Activities and get-to-know-yous. As this unit commences at the initial phase of an academic year, it is extremely important the kids be encouraged to interact from the get-go.

Day 2 - Kick-Off Activity/Definition of Theme and ITU

This day will involve a community service project, coordinated with our local CityYear affiliate. The important part of the day will be the debriefing process that follows the service project, as we want the students to think about their local community and the types of issues that impact that community.

Days 3-5

This time will be spent discussing and learning about the major questions we will ask ourselves throughout the unit: What is community?; What makes a healthy community?; What makes an unhealthy community?; and What do people do to make their communities healthy? English lesson plans during these three days will be focused around those questions and excerpts from Seed folks, which will lend a literary sense of "community" to the discussions. Students will also engage in Treasure Hunts to learn about each other's interests, Think-Pair-Shares to share and synthesize information from each other, and informal oral presentations to share their new knowledge.

Week 2

Days 6-10

Issue Overview – Literacy. English classes will spend the week learning about literacy in their community. As a political issue of interest, the students will learn about statistics and incidence of literacy and will be introduced to the school library as a resource for research and information. They will be split into small groups of 3-4 to investigate the causes of illiteracy and what they might do to help alleviate the problem in their community. Students will use information they learned from the week before in all content areas to address the concept/definition of their community and be expected to deliver strategies and ideas for how they might impact the problem of illiteracy in their community. The week will end with oral presentations to the rest of the class to suggest such strategies.

Week 3

Day 11 - Guest Speaker – Math Content (Statistician)

See Math Plan

Days 12 –15

Collaboration between Math and English - Language and Function of Surveys: Intent and Representation. English students will study the questions asked in surveys to determine "intention." Students will focus in particular on the power and meaning of language and be encouraged to discover the power of word choice. The week will culminate in a written survey that will be distributed to the community. Using the strategies they decide upon in Math class, students will choose the language and words of the survey based on the data they wish to

collect. Resources will include Internet-based research to learn about the Gallup poll and examples of newspaper surveys. The Math and English teacher will collaborate to determine other resources as necessary.

Weeks 4 and 5

Days 16-25 - Content Area

Collaboration between Social Studies and English: Interviewing Skills and the functions of local government (and people). English students will learn the orally interactive techniques, skills, and objectives of the "oral interview." Students will start by interviewing each other to learn the basic techniques of interviewing. They will also watch films of other interviews to discuss and determine the outcomes of different kinds of interviews. They will ultimately build to preparing for an interview with a member of the local government. Their goals should include the desire to learn more about such a person's role and purpose in local government. Explicit connections to the questions from the start of the unit (What is community?; What makes a healthy community?; What makes an unhealthy community?; What do people do to make their communities healthy?) are needed at this critical phase of the unit. Students will be deeply imbedded into the content and purpose of the unit and they will be encouraged to be answering the questions in an explicit effort to make connections also all disciplines.

Week 6

Days 26-30

Results of survey to Math Department and tally – Announcement of major issue to team.

Content Area: Persuasive Writing/Public Speaking. Students will begin to focus on essential skills of language and communication by learning about nonfiction/expository writing and the communication of such material.

Weeks 7-8

Days 31-40

Content Area: Persuasive Writing/Public Speaking; Nonfiction Writing/Expository Writing. Students will work in small groups of 3-4 to research one the 4 original "major issues" and prepare an outline of key facts and notable information. The outline will be used to prepare a small speech to be delivered to the class that highlights information and meets the state framework Language standard for oral presentation: "…use appropriate techniques for oral persuasion" and "…present an organized interpretation" of factual data.

*At this point, it may become evident that students decide they feel strongly about an issue that was not chosen by the community at-large to be addressed. If they are willing to research, prepare, address, and defend an alternative issue, they will be supported in such an endeavor. For more information, read the summation in the conclusion of this document.

Weeks 9-10

Days 4 1-48 - 2 Week Enrichment – Preparation of Speech and Practice of Delivery

Data is provided from work in Science class; Decision is reached about what information needs to be delivered and the information is structured about a public presentation

The English class will be the center for speech preparation. Students will use information gained in Social Studies, Math, Science, and English to organize and prepare information for presentation. Students will ultimately present their information to members of local government and other members of the local community.

Day 49 - Culminating Event – Town Meeting

Students will address the members of the town government and other attendants with a speech and accompanying graphics that support their claims for energy efficiency. They will have learned the function of local government to be able to explain why they chose to present the information in such a manner.

Day 50 - Party – "Thank You Notes"

Students will enjoy a day to appreciate each other and the people who had a successful impact on their understanding of the unit. We will look for students to express their thoughts regarding "community" and whether or not their understanding of community has changed for them over the past ten weeks. We will also ask that every student pick a name to write a "thank you note" that expresses their thoughts about the other's contributions to the unit. It should be a time of affirmation, affection, and adjournment.

Math

Massachusetts Mathematics Curriculum Frameworks Addressed

Number Sense and Operations

8.N.3 Use ratios and proportions in the solution of problems, in particular, problems involving unit rates, scale factors, and rate of change.

8.N.11 Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.

Patterns, Relations, and Algebra

8.P.1 Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions. Include arithmetic and geometric progressions, e.g., compounding.

8.P.5 Identify the slope of a line as a measure of its steepness and as a constant rate of change from its table of values, equation, or graph. Apply the concept of slope to the solution of problems.

Measurement

8.M.1 Select, convert (within the same system of measurement), and use appropriate units of measurement or scale.

8.M.2 Given the formulas, convert from one system of measurement to another. Use technology as appropriate.

8.M.4 Use ratio and proportion (including scale factors) in the solution of problems involving similar plane figures and indirect measurement.

Data analysis, Statistics, and Probability

8.D.1 Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample, e.g., convenience sampling, responses to a survey, random sampling.

8.D.2 Select, create, interpret, and utilize various tabular and graphical representations of data, e.g., circle graphs, Venn diagrams, scatterplots, stem-and-leaf plots, box-and-whisker plots, histograms, tables, and charts. Differentiate between continuous and discrete data and ways to represent them.

8.D.3 Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data. Use these notions to compare different sets of data.

Resources

Internet
Parents and family members
Newspapers
Energy bills from science class
Guest speaker
Math Text

Week-to-Week Layout of Math Lessons

Week 1

Day 1 - Launch

Includes Group Building Activities and get-to-know-you games. As this unit commences at the initial phase of an academic year, it is extremely important the kids be encouraged to interact from the get-go.

Day 2 - Kick-Off Activity/Definition of Theme and ITU

This day will involve a community service project, coordinated with our local CityYear affiliate. The important part of the day will be the debriefing process that follows the service project, as we want the students to think about their local community and the types of issues that impact that community.

Days 3-5 - Introduction to Community

This time will be spent discussing and learning about the major questions we will ask ourselves throughout the unit: What is community?; What makes a healthy community?; What makes an unhealthy community?; and What do people do to make their communities healthy?

The lesson plans for math during these three days will be focused around the various types of jobs in our community, state, country, and the world, the deal with math – both the importance of math and the opportunities for a rewarding and successful career. Students will brainstorm and discuss before we go to the computer lab to research the jobs and opportunities. Students will be asked to go home and ask their families how they use math in their everyday lives – both in a job and at home. In class we will share our findings.

Week 2

Days 6-10 - Issue Overview

The focus in math during these days will be the amount of money the town allocates for art and sport programs.

To gain some background knowledge, students will be provided with articles that explain what funding is currently available and how it affects the community. Information will be read and discussed in class. Discussions will also revolve around what the students have observed in terms of funding the arts and sports, the effects that it may have or not had on their town, as well as what they can do.

Once students have gained a general understanding of the issue they will be provided with time to use the Internet in order to further research the reasoning for the money or lack of in the community. They will also research surrounding communities and compare the figures.

Week 3

Day 11 - Guest Speaker

As a precursor to creating our community survey the entire team will be visited by a statistician in order to learn more about what surveys consist of, what makes a survey valuable, and how they are used to synthesize data and information. Students will take notes and be encouraged to ask him/her questions about their role and how it positively affects the community.

Days 12-15 - Collaboration between Math and English

During these three days, there will be a lot of collaboration between Math and English. We will discuss the language and function of surveys and the intent of results. We will ask questions such as what are we ultimately going to do with our data and how do we want to form the survey to get the most accurate results? Students will practice making surveys on a topic of their choice and we will share and analyze our surveys with the class. Feedback will be given on slips of paper to the student from other students in the class. A final survey for the community will be created on day 15.

Week 4 and Week 5

Days 16-25 - Collecting Results

Each day in the beginning of math class, students will tally the results that were collected from the day before. Results will be posted on the bulletin board dedicated to this project.

During these weeks, math students will focus on slope (8.P.5). This skill will help us interpret the charts and graphs we make next week with our community poll results. For the rest of the time we will be focusing on other standards and devoting two full class periods to open-response MCAS questions.

Friday will be our last day of collecting and tallying results. We will announce the final results on Monday.

Week 6

Days 26-30

On Monday, the math classes will announce the results of the community survey. We will spend the rest of the week deciding how to best display the results visually using charts and graphs, both drawn by hand, and using computer software. We will work hard to decide how to best interpret the data and a big part of this will be to analyze old newspapers, charts, and graphs to study the misinterpretation of data.

Week 7and Week 8

Days 31-40 - Collaboration with science classes on energy efficiency

In Math, students will study central tendency and percentages and ratios using information gathered in science class from personal family energy bills. We will collect information on how much money each family spends on different forms of

energy and use central tendencies to organize the data. We will use percentages and ratios to conclude what percent of each energy bill is spent on what (example, what % is spent on appliances, heat, etc.). We will synthesize the information and put into graphs and charts.

Week 9 and Week 10

Days 41-48 - Preparation of materials to present at the Town Meeting

During this time, the math students will prepare visuals, charts, graphs, and tables to present at the town meeting. We may also prepare facts and figures on Microsoft excel and photocopy handouts to distribute at the meeting. We will also learn to use PowerPoint to display our data and graphs.

Day 49 Culminating Event – Town Meeting

Students will address the members of the town government and other attendants with a speech and accompanying graphics that support their claims for energy efficiency. They will have learned the function of local government to be able to explain why they chose to present the information in such a manner, as well as perfected their public speaking skills, chosen authorities from science to back up the research findings, and created visuals to represent the information.

Day 50 Party – "Thank You Notes"

Students will enjoy a day to appreciate each other and the people who had a successful impact on their understanding of the unit. We will look for students to express their thoughts regarding "community" and whether or not their understanding of community has changed for them over the past ten weeks. We will also ask that every student pick a name to write a "thank you note" that expresses their thoughts about the other's contributions to the unit. It should be a time of affirmation, affection, and adjournment.

Science

Massachusetts Science Curriculum Frameworks Addressed

Recognize that heat is a form of energy and that temperature change results from adding or taking away heat from a system

Give examples of how heat moves in predictable ways, moving from warmer objects to cooler ones until they reach equilibrium.

Differentiate among radiation, conduction, and convection, the three mechanisms by which heat is transferred through the earth's system.

Explain the relationship among the energy provided by the sun, the global patterns of atmospheric movement, and the temperature differences among water, land, and atmosphere.

Resources

http://hes.lbl.gov/
Parents and family members
Newspapers
Science journals
Energy bills
Guest speaker
Science Text

Week-to-Week Layout of Science Lessons

Week 1

Day 1 - Launch

Includes Group Building Activities and get-to-know-you games. As this unit commences at the initial phase of an academic year, it is extremely important the kids be encouraged to interact from the get-go.

Day 2 - Kick-Off Activity/Definition of Theme and ITU

This day will involve a community service project, coordinated with our local City Year affiliate. The important part of the day will be the debriefing process that follows the service project, as we want the students to think about their local community and the types of issues that impact that community.

Days 3-5 - Introduction to Community

In science class we will be having some discussions of what the science" community is and how we are a part of it. This will include looking at different science journals and historic figures and discussing their contribution to the science community. We will have a speaker come from a local science organization (research institution, social groups, publishing company.) One day will relate to the discussions in the social studies class talking about the impact

the science community has had in communities all over the world. This will also be an introduction to the concepts of energy and the uses of energy.

Week 2

Days 6-10 - Issue Overview

The class will be looking at the issues around energy use and energy efficiency. They will look at local, state, country, and worldwide efforts to reduce the use of non-renewable fuel sources. Students will take an inventory of the sources of energy they use in an average day (batteries, gas, oil, exc.) Students will also be linking all these sources of energy with the input and output

Students will be introduced to the home energy saver (HES). This is a program where anyone can plug in information about his or her own home and receive a print out of the average yearly energy costs as well as the impact that it has on the environment (CO_2 emissions). This activity uses the work sheet called getting started. Students are given figures and facts to plug into the home energy saver and as a class they create graphs showing the effects of different variables (house size, number of occupants, and location) on the average energy costs.

Week 3

Day 11 - Guest Speaker

See math section

Days 12-15 - Collaboration between Social Studies and Science

Students will investigate different methods of publishing the surveys created in the Math and Language arts class. It will be their responsibility to contact different publications and prepare the survey in the correct format (Web, print, or phone) for the different producers to publish. This will include discussions of population we wish to survey as well as the type of data we will get in return.

Week 4 and Week 5

Days 16-25 - Collecting Results

See Tech section.

Week 6

Days 26-30

On Monday, the math classes will announce the initial results of the community survey.

Students will also begin to investigate heat as energy. This will include use of temperature guns so students can determine the hottest and coldest parts of their own bodies as well as the classroom or even the school as a hole. All the investigations of heat will be used when they are planning their houses for the home energy challenge.

Week 7and Week 8

Days 31-40 - Collaboration with math classes on energy efficiency

The first week students will be going deeper with the home energy saver. Students will bring in information about their own homes and plug that information into the home energy saver. They will compare the results from the HES with information from their energy bills from home and discuss the reasons behind any discrepancies. With the information they get from the HES they will write a proposal to their own parents as to improvements that can be made to lower their energy costs as well as CO_2 emissions. This will be practice for their proposal at the town meeting of improvements the city can make. During this time students will be keeping lab notebooks that will both be a place to record data as well as respond to the work being done. Journal entries will include an assignment where students must pick one appliance and write about where the energy comes from how it is brought into the home and how it is used in the home. Students will know more about the processes of energy from the Tech lessons in weeks 4 and 5.

In the second week students will be starting on their Home Energy Challenge. This requires each group of students to design and build a house that scores the highest on the grading scale that takes into according annual energy costs, CO2 emissions, and quality of living. Students will use the home energy saver and their knowledge of Heat and heat transfer to build the houses. This project will continue through weeks 9 and 10.

Week 9 and Week 10

Days 41-48 - Preparation of materials to present at the Town Meeting

The 20 students working with me will be responsible for two portions of the presentation. Some students will spend this time researching and learning about energy issues around the country. The Language arts class will be asking them for information and statistics to write the proposals. At the end of the community meeting presentation community members will have some questions to ask the students. These students will be the "panel of experts" that can answer the questions that people have. They will have information gathered on both sides of the issue from different cases around the country to site. Students will not be expected to recall all this information, but they will have to develop a system so that they can retrieve the materials quickly to answer questions. There will be practice sessions with these students where other students can ask them possible questions and students will have to respond based on the information they can quickly find. Some of the students who do not feel comfortable talking in front of the group will be there to retrieve the information as well as be responsible for the videotaping/ editing of the community meeting.

In the regular science classes students will be working on their home energy challenge. The final houses can be used as models at the community meeting. They will also be investigating more into heat as energy and how heat moves. There will be an experiment set up where students can use dialysis tubing to see the diffusion of hot water into cold water to learn how heat transfer works. They

will also begin to apply the ideas of how energy is stored used on the planet and begin to understand that heat effect not only our local climates (one room) but also climate and weather changes. This is how the students will transfer into the next meteorology unit.

Day 49 Culminating Event – Town Meeting

Students will address the members of the town government and other attendants with a speech and accompanying graphics that support their claims for energy efficiency. They will have learned the function of local government to be able to explain why they chose to present the information in such a manner, as well as perfected their public speaking skills, chosen authorities from science to back up the research findings, and created visuals to represent the information.

Day 50 Party – "Thank You Notes"

Students will enjoy a day to appreciate each other and the people who had a successful impact on their understanding of the unit. We will look for students to express their thoughts regarding "community" and whether or not their understanding of community has changed for them over the past ten weeks. We will also ask that every student pick a name to write a "thank you note" that expresses their thoughts about the other's contributions to the unit. It should be a time of affirmation, affection, and adjournment.

Integrated Arts

Technology

2.1 Identify and explain the steps of the engineering design process, i.e., identify the need or problem, research the problem, develop possible solutions, select the best possible solution(s), construct a prototype, test and evaluate, communicate the solution(s), and redesign.
2.2 Demonstrate methods of representing solutions to a design problem, e.g., sketches, orthographic projections, multiview drawings.
2.3 Describe and explain the purpose of a given prototype.
2.4 Identify appropriate materials, tools, and machines needed to construct a prototype of a given engineering design.
2.5 Explain how such design features as size, shape, weight, function, and cost limitations would affect the construction of a given prototype.
2.6 Identify the five elements of a universal systems model: goal, inputs, processes, outputs, and feedback.

Students will be engaging in a two-week unit that will introduce the standards. They will be designing basic circuits and learning about electricity flow. This knowledge will help supplement the students understanding of energy in the home. By being introduced to the above ideas students will be better equip when they start their Home Energy Challenge. Students will not be expected to know these ideas in depth because they will be applied in most of the units they will be working on during the year.

Physical Education

In their physical education classes, students will be engaged in group-building activities that remove the traditional emphasis on competition and a "winner-takes-all" mentality. Instead, students will participate in activities that require teamwork and communication for success. Such activities may include:

- The Human Knot
- Line-Ups
- Blindfolded Squares
- Stand Up
- Cooperative Juggle
- Keep It Going
- Finger Lifts
- Alley Oop!
- The Human Machine

The classes will also organize a town “Fun Run” which will consist of a 5K run and walk to urge the community to get in shape. Technology education classes will help make posters to advertise as well as posting an advertisement on the public access channel.

Self-Evaluation of Community Unit

Teacher Name: Ms. Orzel, Ms. Frisina, Ms. Bourdeau, Ms. Clyde

Student Name: _____

CATEGORY	2 Points	1 Point	0 Points
Discussion	I always participated in discussion without shouting, listened to others speak, paid attention to teacher/presenter	I sometimes participated in discussion or shouts during discussion, sometimes listened and paid attention	I usually did not participate in discussion, listen to others or pay attention to teacher/presenter
Preparation	I was on time for class, had book, folder, pencil, planner, and had taken restroom/drink break.	I was usually on time for class, had most supplies needed for class	I was almost always late for class, not prepared, and frequently left the classroom.
Cooperation	I always respected others' ideas and worked well with others in the group.	I usually respected others' ideas and worked well with others in the group.	I sometimes respected others' ideas and worked well with others in the group.
Creativity	I always actively offered creative ideas to group on projects and presentations.	I sometimes offered creative ideas to group on projects and presentations.	I almost never offered creative ideas to group on projects and presentations.
Effort	I always did the best I could for myself and for my group.	I sometimes did the best I could for myself and for my group.	I rarely did the best I could for myself and for my group.

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Teacher Evaluation of Community Unit

Teacher Name: Ms. Orzel, Ms. Frisina, Ms. Bourdeau, Ms. Clyde

Student Name: _____

CATEGORY	2 Points	1 Point	0 Points
Discussion	Always participates in discussion without shouting, listens to others speak, pays attention to teacher/presenter	Sometimes participates in discussions, shouts during discussion, sometimes listens and pays attention	Usually does not participate in discussions, listens to others or pays attention to teacher/presenter infrequently
Preparation	Always on time for class, with book, folder, pencil, planner, and had taken restroom/drink break.	Usually on time for class, with most supplies needed for class	Almost always late for class, not prepared, and frequently left the classroom.
Cooperation	Always respects others' ideas and works well with others in the group.	Usually respects others' ideas and works well with others in the group.	Sometimes respects others' ideas and works well with others in the group.
Creativity	Always actively offers creative ideas to group on projects and presentations.	Sometimes offers creative ideas to group on projects and presentations.	Almost never offers creative ideas to group on projects and presentations.
Effort	Always did the best possible job for self and for group.	Sometimes did the best job possible for self and for group.	Rarely did the best job possible for self and for group.

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Conclusion

Interdisciplinary inquiry in teaching makes room for exciting new ways of thinking about how children learn. As teachers, our responsibility is to educate thinking persons – those who inquire, explore, question, investigate, conclude, and use those conclusions to develop new questions. This thematic unit, built around a concept of community, is meant to provide meaningful opportunities for students to consider who they are as members of a community and how their actions and behavior impact that community.

The students will have harnessed essential communicative skills through the unit (interviewing and public speaking) in an effort to engage students in meaningful interaction with others. They will have been introduced to critical ways they can research and evaluate issues in their community in the physical sciences and mathematics, and they will have investigated models of community leaders in social studies. They will have integrated these understandings in the most kinesthetic of ways – through an extended unit in physical education class that removes emphasis from competition and helps the students "act out" the essential concepts of support and teamwork. Lastly, they will have learned cutting-edge technological skills to help them present their ideas and arguments in a professional and organized manner in Technology.

This unit is organized to run for ten weeks at the outset of an academic school year, or from September to mid-November. This decision was made for several reasons, enumerated below:

Content Areas – The Content areas needed plenty of time to introduce new skills and concepts and provide every student with enough time to synthesize new ideas and understandings with background knowledge. A major goal of the unit is to encourage each student to form an independent definition of community and be able to articulate how they are a part of that community. We want the students to spend a lot of time thinking about all the ways they may impact their community, from all options in any of the content areas.

Flexibility – The need for flexibility is critical in this unit. The students meet in their core subjects every day, but there is high possibility that students will come to different conclusions about the 'major' issue decided on by the rest of the class through survey and data analysis. We want to support any students who choose to try other methods of research and come to different conclusions. We have built "flex time" into weeks 7 and 8 so that students who dissent from the group may have the option to gather data to make their own arguments for essential needs or changes in their community.

Assessment – Both formative and summative assessments will be administered to the students to check for development of inquiry and understanding. Each content area teacher will meet periodically to discuss students' ongoing development and understanding of course material and expectations. Students will be evaluated based on the rubrics that address discussion, preparation, cooperation, creativity, and effort. The major goal at the end of the culminating event will be that students can articulate both a personal definition of 'community' and ways they can make a meaningful personal

impact that will be presented at the party the following day. This wrap-up will be assessed with the rubrics as well.

Overall, this Interdisciplinary Thematic Unit has addressed core curriculum in a creative and challenging manner. We expect that students will benefit greatly from extended interaction among the disciplines as they uncover the patterns that weave through learning and living. We will do our best as educators to assist them in their learning to arrive at those understandings independently and confidently.