Blackstone Valley Superintendents' Consortium

2016 Promising Practices Award Breakfast

May 13, 2016 8:00 a.m.

Asa Waters Mansion 123 Elm St., Millbury, MA 01527

Table of Contents

Letter from Dr. Joseph P. Maruszczak, Chairperson,
Blackstone Valley Superintendents' Consortium1
Letter from Cindy Socha, Chairperson, Curriculum Directors
2016 Recipients
Bellingham
Blackstone-Millville Regional
Blackstone Valley Regional Vocational Technical High School
Douglas
Grafton
Hopedale
Mendon-Upton Regional
Milford
Millbury
Northbridge
Sutton
Uxbridge

Promising Practices in Education Blackstone Valley Consortium

The lesson plans that follow represent the hallmark of innovation and best practices from some of the finest educators in the Blackstone Valley. Nominated by curriculum directors and endorsed by principals, these lessons have been selected because they have been shown to both motivate and inspire students. They are snapshots of instruction that are truly engaging.

Please take the time to review what your colleagues have created to share with you. These lessons truly serve as exemplars in addressing higher order thinking in curriculum, instruction, and assessment practices. Project descriptions and contact information are shared to facilitate interaction with the growing list of award winners.

While only nominations selected for 2016 recognition are shared within this booklet, the compilation of award-winning lesson plans identified since the creation of this award is available electronically on each member district's website. Whether you discover a multitude of new activities to incorporate into your classroom, or come across just one idea to spark your own creativity, we hope this venture into new teaching methodologies will be the spark for a life-long pursuit of educational excellence.

Cordially,

Dr. Joseph P. Maruszczak, Chair

Blackstone Valley Superintendents' Consortium



Blackstone Valley Curriculum Consortium

* Bellingham * Blackstone-Millville * Blackstone Valley Vocational Regional *

* Douglas * Grafton * Hopedale * Mendon-Upton * Milford *

* Millbury * Northbridge * Sutton * Uxbridge *

Promising Practices in Education Blackstone Valley Curriculum Consortium

On behalf of the Blackstone Valley Curriculum Consortium, I would like to congratulate this year's recipients of the *Promising Practices in Education Award*. As an educator, your district recognizes your outstanding contributions to the profession of teaching.

Over the past years, you and your fellow educators have been sharing best practices in instruction, which have enriched all of our districts. The exemplary teaching that has been brought forward by this program celebrates and promotes creative and innovative teaching practices that inspire students to grow academically, and inspires other teachers to grow professionally.

I applaud your work in bringing curriculum alive for students. The lessons, units, and projects you provide serve as a tangible resource for your fellow teachers throughout the Blackstone Valley.

Your work in this booklet will be shared and used by others for many years to come. Thank you and congratulations again for your commitment to our profession and our students.

Cindy Socha, Chair Blackstone Valley Curriculum Consortium

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School District and Address: Bellingham Public Schools

School Administration Building

4 Mechanic Street / Bellingham, MA 02019

Superintendent: Peter D. Marano

School Name and Address: Paul J. Primavera Jr./Sr. High School

80 Harpin St.

Bellingham, MA 02019

Principal: David S. Cutler

Curriculum Director/Coordinator and Address:

Matt Bolduc

School Administration Building

4 Mechanic Street / Bellingham, MA 02019

Subject Area: ELA, Visual Arts & Technology

Grade Level: 9-12

Target Audience: High School

Number of Days of Unit/Activity: Full Term

Project Title

Multi-Media Interpretations of Universal Themes in Literature

Project/Unit/Program - Focus/Goal

The focus/goal of this unit is for students to first be exposed to literary works that are exemplars of a specific genre. While reading and comprehending the selections, "archetypal criticism" will be introduced to identify the mythic resonance. Furthermore, students will briefly be introduced to cultural anthropology and psychoanalysis – specifically the works of Carl Jung and the idea of the collective unconscious. They will discuss the cultural function of literature, and how in many ways the characters and events they read about provide guidance for their own lives.

In addition to identifying the universal themes found in these selections, students will then draw connections to other works that they are more familiar with. They will be able to compare these works across a variety of mediums, infusing technology with literacy and visual arts, and making connections between otherwise unlikely genres, such as renaissance painting and film noir.

Standard Strands Being Assessed

ELA:

CCSS.ELA-LITERACY.RL.9-10.9

Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).

CCSS.ELA-LITERACY.RL.11-12.2

Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

CCSS.ELA-LITERACY.RL.11-12.3

Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).

CCSS.ELA-LITERACY.W.11-12.1

Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

CCSS.ELA-LITERACY.W.11-12.3

Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

CCSS.ELA-LITERACY.W.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. CCSS.ELA-LITERACY.W.11-12.8

Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.

CCSS.ELA-LITERACY.W.11-12.9

Draw evidence from literary or informational texts to support analysis, reflection, and research.

Visual Arts:

Anchor Standard #1. Generate and conceptualize artistic ideas and work.

Anchor Standard #6. Convey meaning through the presentation of artistic work.

Anchor Standard #7. Perceive and analyze artistic work.

Anchor Standard #10. Synthesize and relate knowledge and personal experiences to make art.

Anchor Standard #11. Relate artistic ideas and works with societal, cultural and historical context to deepen understanding.

Technology ISTE Standards (Referenced)

- 1. Creativity and innovation Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.
- a. Apply existing knowledge to generate new ideas, products, or processes
- b. Create original works as a means of personal or group expression
- c. Use models and simulations to explore complex systems and issues
- d. Identify trends and forecast possibilities
- 2. Communication and collaboration Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.
- a. Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media
- b. Communicate information and ideas effectively to multiple audiences using a variety of media and formats
- c. Develop cultural understanding and global awareness by engaging with learners of other cultures
- d. Contribute to project teams to produce original works or solve problems

Materials

iPad Cart, SmartBoard, Microsoft Office/OneDrive-Bellingham Public Schools, iTunes, iMovie, Sony HDR-CX240 HandyCam, *The Odyssey* by Homer, *The Postman Always Rings Twice* by James M. Cain, *Anthem* by Ayn Rand, art supplies, props and costumes.

Description

Students will participate in the following units, and complete several of the suggested activities. The purpose is not merely to recall information from the text, but to synthesize that with their prior knowledge, and to create artifacts that effectively convey that understanding. Throughout this process, they will be provided with the support necessary to construct submissions from several different mediums, exploring multiple pathways to success and strengthening 21st century skills.

- 1. The Hero's Journey and The Universal Myth: Using the Odyssey as the model for epic heroism, students will breakdown and identify the key elements of the genre. Focusing specifically on what each character and event represents to the protagonist, students will apply this formula to more contemporary works of literature. Selected writings of Karl Jung and Joseph Campbell will be provided to further enhance this method of analysis.
- 2. Noir and The Antihero: Students will read examples of American "hardboiled" fiction, focusing specifically on the use of imagery when referencing dark or light, and how this particular genre creates a reversal of the traditional hero in literature. Students will also cover how the writings of Cain and Marlowe transcended literature to become staples of film, and how the metaphoric use of dark and light relates to the visual contrast of the renaissance painting method, chiaroscuro.

3. **Dystopian fiction and contemporary connections:** Students will survey several key components of major world philosophies prior to being introduced to Ayn Rand's theory of Objectivism. They will read her novella, *Anthem*, and identify specifics of this future society, and how it was intended as a warning. They will then compare and contrast this particular work with another title of their choice that they are more familiar with. The current trend in young adult fiction has addressed similar themes with titles like *Divergent*, and *The Hunger Games*, as well as perennial favorites like *The Giver*.

Upon completion of the literary analysis, students will begin constructing their finished products. Their artifacts will be done with a liberal amount of autonomy, and must include a component of technology. Possible formats could be but are not limited to: PowerPoint presentations, video presentations, student films or documentary analysis. Students are encouraged to suggest other formats pending teacher approval.

Some examples include:

What Is Art

https://www.youtube.com/watch?v=LCM2EDZS48E

Revenge of the Mag-Light's Return https://www.youtube.com/watch?v=iOkHArstllc

Assessment Design

Multi-Media Rubric

	Chosen Media	Content	Writing/ Mechanics	Oral Presentation
Score Levels	The organization and integration of media objects such as text and graphics to represent and convey information. Electronic media also may include video, animation, and	The topics, ideas, concepts, knowledge, and opinions that constitute the substance of the presentation.	The language, organization, punctuation, spelling, grammar and capitalization	The clarity, and ability to articulate content while speaking
5	Students have used media in exemplary, creative and effective ways that exploit the particular strengths of the chosen format. All elements make a contribution. With electronic media, there are few minor technical problems	The content presented is superior and clearly demonstrates a solid understanding of the topic. It reflects broad research and application of critical thinking skills; shows notable insight or understanding of the topic; compels	All elements of writing and language are superior. There are no mistakes.	Presentation was well organized and captivating. Information was presented clearly and succinctly.

		the audience's attention.		
4	Presentation blends media elements in a balanced, attractive, easy-to-follow format. With minor exceptions, all elements contribute rather than detract from the presentation's overall effectiveness.	The project has a clear goal related to a significant topic or issue. Information included has been compiled from several relevant sources. The project is useful to an audience beyond the students who created it.	All elements of writing and language are very good. There are only a 1-2 mistakes.	Presentation was very well organized and kept the audience attention. Information was presented clearly and succinctly most of the time.
3	Presentation uses media elements adequately. With electronic media there are some technical problems, but the viewer is able to follow the presentation with few difficulties.	The project presents information in an accurate and organized manner that can be understood by the intended audience. There is a focus that is maintained throughout the piece.	Most elements of writing and language are good. There are 3-4 mistakes.	Presentation was well organized and kept the audience attention most of the time. Information was a little confusing at times.
2	Presentation uses a limited amount of media objects and the organization confusing. With electronic media there are technical difficulties seriously interfere with the viewer's ability to see, hear, or understand content.	The project has a focus but may stray from it at times. There is an organizational structure, though it may not be carried through consistently. There may be factual errors or inconsistencies, but they are relatively minor.	Writing and language elements are fair. There are 5-7 mistakes.	Presentation was not very well organized and difficult to follow at times. Information was confusing at times.
1	The presentation is of poor quality and is disorganized and difficult to follow.	Project seems haphazard, hurried or unfinished. There are significant factual errors, misconceptions, or misunderstandings.	Writing is poor. There are more than 7 mistakes throughout.	Presentation poor and disorganized.







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School District and Address: Blackstone-Millville Regional School District

175 Lincoln St.

Blackstone, MA 01504

(508) 883-4400

Superintendent: Allen Himmelberger

School Name and Address: Millville Elementary School

122 Berthelette Way Millville, MA 01529 (508) 883-0177

Principal: Dr. Paul Haughey

Curriculum Director/Coordinator and Address:

Dr. David Thomson

Blackstone-Millville Regional School

District Office 175 Lincoln St.

Blackstone, MA 01504

(508) 883-4400

Subject Area: ELA - Speaking and Listening

Grade Level: Pre-K

Target Audience: 3-5 year-olds with and without disabling conditions

Number of Days of Unit/Activity: 5

Project Title: ELA Unit – Story Time (Eric Carle Stories/Brown Bear)

<u>Project/Unit/Program – Focus/Goal</u>: Students will be able to participate in story time and answer simple WH questions, as well as begin to match/label the color words presented in "Brown Bear," while listening to others and taking turns speaking.

<u>Standard Strands Being Assessed</u>: Speaking and Listening Standards Pre-K–5 (Story: Brown Bear, Brown Bear) *Comprehension and Collaboration Standard* can be found at: http://www.doe.mass.edu/frameworks/current.html

Materials (links to resources)

SMART Exchange – Smartboard Notebook Lessons found at http://exchange.smarttech.com/search.html?q=Brown%20Bear%20Brown%20Bear%20%20sequencing

PictureSET Database: Visuals for the classroom and home support https://w3.setbc.org/students/Pages/PictureSET.aspx

Lesson Description/Overview

Gain attention/Ask probing questions:

Have you ever seen a bear?

Do you think a bear would be BIGGER or SMALLER than you?

Do you think you would want a bear as a pet? Why or why not?

Inform students of the standard and objectives:

Review Circle Time Rules

Explain the story time activities and current theme – Eric Carle Stories Interpret the visually presented information on book cover – talk about author and illustrator (preview visuals of animals and color words in story)

Stimulate recall of prior learning:

Does anyone know the color of a duck? A frog? (Have a copy of the visuals on counter so that children can see it and refer to it as needed)

What is your favorite color? Can you tell me something that is your favorite color?

Present the Content:

Begin the lesson by previewing the color words on a white board so that the children can anticipate what the focus of the story will be and this will also provide the students a framework of understanding as they listen to the story "Brown Bear, Brown Bear."

As the story is being read, focus on and repeat the key terms for this story which are the following color words: red, yellow, brown, black, blue, green, orange, purple and white. I would also have pictures of the animals from the story for the children to refer to throughout circle time.

Elicit performance (opportunities to practice):

- Challenge students to match the key terms during a craft activity where they create their own Brown Bear books (also provide opportunities to match words in a variety of tasks)
- Focus on including EVERY child by offering a visual model, a choice of only two words at a time, having the children work together to offer peer support, as well as using the story and visuals as a guide.
- Provide every child a successful opportunity to participate by modifying the activity as necessary with the use of visuals for support and/or creating more challenging activities.

Additional activities:

Continue color recognition through a variety of classroom activities such as games and sorting tasks because these types of activities focus on color recognition, as well as provide an opportunity to reinforce understanding for the learners who may be having some difficulty. Sorting tasks and games are wonderful for reviewing colors because they are hands-on task.

Provide more than one opportunity to focus on the identification or colors and color words. The use of visuals will also support students who need more assistance to identify colors with greater accurately but increased independence.

Provide feedback:

- Offer feedback after every comment and support each child who is demonstrating difficulty by saying, "I like how you tried but let's try that again..." if the child makes a mistake and offer visual and/or verbal supports to scaffold your instruction and therefore allowing the child to work through the problem with greater success.
- Talk struggling students through the activities with the use of visual and verbal prompts to support their efforts, as well as token boards with clear reinforcements.

Enhance retention and transfer:

- Ask probing questions throughout the story about colors
- Monitor each child's progress and knowledge base (with a checklist)
- Preview/review the story

Assessment

- Anecdotal Records:
 - Focus on a specific language based milestones and take data during circle time and note observations about the child's ability to label and/or match color words.
- Classroom Observations/Ongoing Assessment:
 - I would want to note if each child was able to confirm understanding of a text read aloud, continue a conversation through multiple exchanges, as well as ask and answer simple open ended questions. I would use a simplified version the speaking skills checklist.
- Language Skills Rubrics:
 - Assessment of Speaking Skills Checklist from Multilingual Matters (Carrasquillo, 2004).
- Individualized Assessment:
 - The students will be asked specific questions throughout the story and also reviewed throughout the week so that the teacher can collect data and document their current level of performance. The questions can include:

What color is on this card? What color is this animal?

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School District and Address: Blackstone Valley Regional Vocational Technical High School

65 Pleasant Street Upton, MA 01568

Superintendent: Dr. Michael F. Fitzpatrick

School Name and Address: Blackstone Valley Regional Vocational Technical High School

65 Pleasant Street Upton, MA 01568

Principal: Anthony E. Steele

Curriculum Director/Coordinator and Address:

Thomas Belland 65 Pleasant Street Upton, MA 01568

Subject Area: Cosmetology

Grade Level: 9-12

Target Audience: Seniors majoring in Cosmetology Arts and Sciences

Number of Days of Unit/Activity: 4 week project

Project Title:

Salon Business Entrepreneurship and Integration Project

Project/Unit/Program – Focus/Goal:

Students will be able to:

- Describe salon owner-ship types, structure, operations and requirements for the practice of good business.
- List and research the basic factors to be considered when opening a salon
- Distinguish between the types of salon ownership
- Identify and document all information that should be included in a business plan
- Recognize the elements of successful salon operations
- Describe, research and demonstrate space requirements and floor plans
- Define, investigate and exhibit all requirements of designing and opening a salon

Standard Strands Being Assessed:

2.A Marketing Products and Services

2.A.01 Demonstrate techniques to market products and services.

2.B Professional Salon Business

- 2.B.01 Establish a salon's business plan.
- 2.B.02 Explain the management operations of a successful salon.

4.A Communication in the Workplace

4.A.01 Demonstrate appropriate oral and written communication skills in the workplace.

5.A Starting a Business

5.A.01 Demonstrate an understanding of the practices required to start a business.

5.B Marketing a Business

5.B.01 Demonstrate an understanding of marketing and promoting a business. 5.B.01.01 Markets.

5.C Financial Concepts and Applications in Business

5.D Legal/Ethical/Social Responsibilities

6.A Technology Literacy Knowledge and Skills (Grades 9 through 12)

6.A.01 Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity.

Materials

- Milady Standard Text Book, Milady Course Management Guide, Milady Softskills DVD, Milady Study Guide
- Board of Registration of Cosmetology and Barbering- Rules and Regulations
- zipskinny.com for Demographics
- Multimedia Communications Department
- Drafting and Engineering Technology Department

Description

Cosmetology students will complete an entrepreneurship project their senior year. Students will have the opportunity to complete a project that follows all the components of a business plan to open a mock salon that incorporates employability, entrepreneurship and technology skills that connect to Massachusetts DESE Framework Standards. Projects also involve collaborating with other shops and the integration of academic subjects. Their end result will be a binder with all plans, paperwork, and salon model. This project involves the following:

Senior Related

1st Week- Chapter- The Salon Business, Milady Standard Text Book. Including Class Work, Home Work, Vocabulary Quiz, and Chapter Test.

2nd Week – Pass out, explanation, and research of all supporting documents, Components of a Business Plan to be included in a binder with time lines.

- Components of a Business Plan
 - ✓ Title Page- The Title page provides the name, address, and phone number of the company and the Owner or CEO
 - ✓ Table of Content- Includes a sequential listing with page numbers for the different sections of the business plan.
 - ✓ Business Description-Write a general description of your business plan Find and print out your state board of registration of cosmetologist, rules and regulations governing cosmetology profession, how to open a salon
 - ✓ Mission/Vison Statement-This is a statement of your mission as a salon. What are your goals and objectives and how do you plan to attain them? What is your vision for the future of your salon?
 - ✓ Company Overview-Staffing would include a list of personnel to be hired and which area of cosmetology they will be practicing.
 - ✓ Product/Service Strategy-This section will review the current products and services offered that make your salon unique and competitive
 - ✓ Market Analysis-This section describes your market. What are the demographics in the area where your salon is located?
 - ✓ Marketing Plan- This section will explain your sales strategy, advertising, promotion, and public relations plans.
 - ✓ Support Documents-This section will include a variety of additional documents to support your business plan.

Business Plan with Multimedia Communications Department

Students will devise a complete plan to open a fictitious hair/salon/spa. They will work with senior students in the Multimedia Communications Department to create business cards, brochures, menu of services and prices, and an advertisement. Each student will research and decide where they would like their business to be located. Using the internet to locate the State Board of Cosmetology website for that state, they will use and obey those state and local laws in their planning. They also decide which services they will have, pricing, salon type and style.

Business Plan with Drafting and Engineering Technology Department

Students will work with senior students in this department to create an actual blueprint to design and build a salon. In doing this they will be working with the Drafting students using the CAD system. They have to follow all of the state and local requirements.

Senior Practical

Business Plan with Drafting and Engineering Technology Department

Students will work with this department using their blueprint, the students will build a 3D model, scaled to size of the salon they have designed. Students will then bring the model home and use

their imagination and creative materials to add details to their models and bring the salon "to life".

Assessment Design

- Written and practical projects will be graded according to teacher rubrics
- Creativity, uniqueness and imagination are considered in the end results of the salon models.
- Salon models will be judged by our Cosmetology advisory committee during our Local SkillsUSA competition.
- Peer review
- Oral review assessment
- Self-assessment utilizing student rubric

Student Sample Part 1



Student Sample part 2 and Lesson Plan Participants





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Heidi Helstrom, Karen Cristian

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School District and Address: Douglas Public Schools

Superintendent: Norman Yvon

School Name and Address: Douglas Middle School

21 Davis Street Douglas, MA 01516

Principal: Beverly Bachelder

Curriculum Director/Coordinator and Address:

Cindy Socha

Douglas Primary School

17 Gleason Court Douglas, MA 01516

Subject Area: English, World History, Math, Science, Technology

Grade Level: 7th grade

Target Audience: 7th grade

Number of Days of Unit/Activity: 5 Days (including STEM Survival Day and shelter testing)

Project Title - "STEM Survival Day – The River"

Project/Unit/Program - Focus/Goal

The overall goal in creating this STEM-integrated interdisciplinary unit was to provide students the opportunity to apply their learning in the major subject areas to a real-life problem; to increase students' critical thinking and problem-solving skills through experiencing the engineering design process and applying it to the design and construction of a survival shelter prototype; to better prepare students for college and career; to excite students about future careers in STEM fields; and to increase the students' achievement and mastery of STEM subjects.

Standard Strands Being Assessed

ELA: CCSS.ELA-LITERACY.RL.7.2, CCSS.ELA-LITERACY.SL.7.1

Math: 7.G.A.1, 7.G.A.2, 7.G.B.6

Science & Technology/Engineering: 7.MS-ETS3-4, 7.MS-ETS3-5, 7.MS-ETS1-2

World History: History and Geography 6.1, 6.2, 6.3

Materials

- "Stem Survival Day Resources"

http://www.douglas.k12.ma.us/webpages/7grade/index.cfm?subpage=2069047

-Acadian Forest Websites

http://www.annapolisriver.ca/acadianforest.php

http://www.eoearth.org/article/Eastern_Canadian_forests

- -Copies of novel *The River* by Gary Paulsen (or tablets to use in reading electronic copies of the novel)
- -Reflection portfolios (could be done electronically utilizing a computer or tablet, or constructed by hand using lined paper for writing and drawing paper for the portfolio cover)
- -Computer or tablet to conduct research
- -Graph paper, brown construction paper, rulers, twine, glue, colored pencils/markers, and paper towels, high-speed fan, portable hand pump sprayer, materials gathered from the woods; i.e., sticks, pine cones, leaves, pine needles, tree bark, and rocks, and cardboard boxes

Description

Douglas Middle School 7th graders took part in a fully integrated STEM unit, culminating on Friday, Nov. 13, 2016, with a special day: "STEM Survival Day," when students used what they learned in Math, Science, and World History to create habitats for a character from Gary Paulsen's novel, *The River*. To begin the unit, students read *The River* in ELA class. In the book, the two main characters become stranded in the Acadian Forest in Canada. They are forced to build a shelter to withstand the cold nights, wind, and rain. After reading the novel, students utilized the engineering design process they learned about in Science to design a prototype of a survival shelter habitat using materials found in nature. They then had to apply what they learned in Math classes about scale factor to draw a scale diagram of their habitat. Students also created blueprints in order to include details about their surroundings, and how these details would affect their structures. In History class, students researched information on the Acadian Forest in Canada (the setting for the novel), including climate, native materials, topography, geographical features, and weather patterns. They used this information to design their own shelter habitats.

On the culminating day of the unit, "STEM Survival Day," students were assigned these seven challenges that incorporated all major subject areas:

Challenge #1: In World History, research the native trees, plants and animals of the Acadian Forest in Canada. Be as detailed as possible in including this information. You may include drawings. Challenge #2: Create a team portfolio, with a cover that includes your team name (make it relevant to the task!), a list of your team members, and your group #. Challenge #3: Draw a blueprint of a habitat you could create, using the native materials in the Acadian Forest, in order to survive in the wilderness. Challenge #4: Select the best design and build a prototype of the shelter using the following materials: sticks, pine cones, leaves, pine needles, construction paper, glue, tape, and string. Challenge #5: Draw a scale drawing of your shelter on graph paper. (Scale: 1 square= 1 inch). Challenge #6: Provide a written explanation - Based on the climate and native materials available to you in Canada, what would your structure really be made of? Base it on your research! **Challenge #7**: Reflection - What have you learned from this experience? What did you enjoy? Did you follow your blueprint? How did your design do overall? Explain. Relate this experience to the engineering design process. Students employed real-life application of knowledge learned in their classes to create their own survival shelters, drawing upon their own personal experiences of the outdoors to make connections to the text in a "hands-on" way.

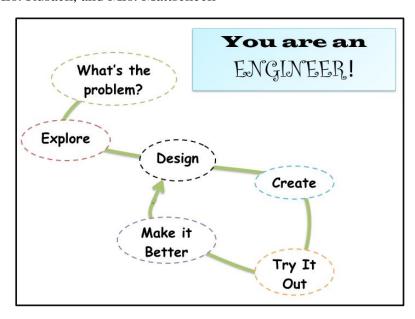
Assessment Design

Student work was assessed both formally and informally throughout the unit. All groups worked on the culminating activity of constructing a shelter using items from nature, as well as two pieces of brown construction paper, a little glue, a piece of tape, and two 1-yard pieces of twine. While constructing their shelters, students had to consider their shelter's ability to withstand wind (a large testing fan) and rain (a spray bottle.) Students were grouped differently on STEM Day from their typical classroom configurations. Typically, students are heterogeneously mixed in grade 7 classes, with one inclusion block – but on STEM Day, students were completely mixed from among all classes. This grouping gave students the chance to work with peers they didn't usually collaborate with, and it also allowed each student to contribute their skills and talents to the success of the project. As a result, students of all interests and ability levels contributed equally to the design and building of their shelters. As a final outcome of the unit, students created a portfolio within their small groups. Each portfolio had specific criteria. Some work samples were group-based, and others were completed individually.





Douglas Middle School 7th Grade Team: A 7th grade group with their shelter (L to R) Mrs. Helstrom, Mrs. Cristian, Mr. Bolio, Mrs. Rusack, and Mrs. Mattscheck



Engineering Design Process

Name(s): Susan Peckitt and Michelle Davey

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30 Providence Rd. Grafton, MA 01519

Superintendent: Dr. James Cummings

School Name and Address: 24 Providence Rd. Grafton, MA 01519

Principal: Mr. James Pignataro

Curriculum Director/Coordinator and Address:

Ms. Tracey Calo 30 Providence Rd. Grafton, MA 01519

Subject Area: English Co-Teaching

Grade Level: 9

Target Audience: This is a co-taught 9th grade English class. There are twenty-one students in this class. Six of these students are on IEPs and diagnoses include: communication impairment, specific learning disabilities in mathematics, reading, and written language, autism spectrum disorder, cerebral palsy, ADHD, and anxiety. One of the students is considered to be at-risk, and none of the students are English Language Learners.

Number of Days of Unit/Activity: One day in a three-week unit.

Project Title Mastering the Open Response

Project/Unit/Program - Focus/Goal

Students will be able to express mastery of composing an open response by revising an earlier assignment to earn a four. Students will demonstrate the ability to utilize teachers' written comments and request assistance as needed to improve their writing. Teachers will use parallel instruction and individualized instruction to ensure these learning objectives are met. Assessment toward completion of these objectives will be evident through the students' submission of revised open responses.

Standard Strands Being Assessed

- RL 1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- RL 2. Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
- RL. MA. 8A Relate a work of fiction, poetry, or drama to the seminal ideas of its time.
- RI 1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- RI 2. Determine a central idea of a text and analyze its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.
- RI 3. Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.
- RI 5. Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text.
- RI 8. Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.
- W1. Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.
- W4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience
- W5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience
- W6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.
- W9. Draw evidence from literary or informational texts to support analysis, reflection, and research.
- L1. Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
- L3a. Write and edit work so that it conforms to the guidelines in a style manual (e.g., MLA Handbook) appropriate for the discipline and writing type.
- L4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.
- L5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

Materials

Characterization Open Response:

 $\underline{https://docs.google.com/document/d/1G7lLwpb8JvNGhzz80065aRBq9tPgGqAaUjI4J1mlouk/edit?usp=sharing}$

Mercy Killing Open Response:

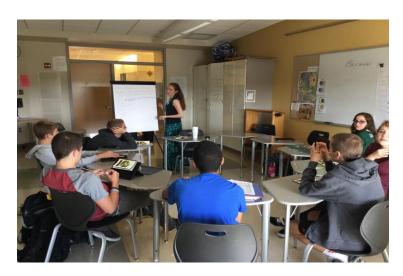
 $\frac{https://docs.google.com/a/grafton.k12.ma.us/document/d/1wReIOMyeU60OVOa9j6W6J6Jkxj5n}{XMKkjD5Mgi_34z4/edit?usp=sharing}$

Description

While completing a unit on Of Mice and Men by John Steinbeck, students were given two writing prompts (at different times during the unit) and instructed to write a one paragraph response in the format of the Massachusetts Comprehensive Assessment System (MCAS) open response requirements. Graphic organizer templates were provided to special education students and were also made available to general education students. The open response prompts were as follows: (1) Although plot drives a novel, characterization can be a driving force as well. In Of *Mice and Men.* Steinbeck creates a number of interesting characters. Choose a character from the first three chapters of the novel, list the three most important traits, and explain how Steinbeck uses indirect characterization to portray this character. (2) Premise: A very important event in Of Mice and Men occurs when Candy must decide to allow Carlson to shoot his dog. This event becomes even more significant at the end of the novel when George is faced with a similar decision. Prompt: Explain how the killing of Candy's dog is similar to and different from the killing of Lennie. Students were given one forty-five minute class period to compose each open response. Extended time was provided to special education and struggling students as needed. Students were provided with a copy of the prompt the night before and instructed to find evidence (quotations) from Of Mice and Men to support their main points. Throughout the unit, students received ongoing instruction in composing a proper open response and appropriately integrating quotations. Prior to writing, the grading rubric was reviewed with the students, and co-teachers co-graded the open responses to ensure consistency in grading. The grading rubric aligns with the MCAS style of grading in which students earn a grade between one and four with four indicating a perfect score. In addition to a number score, co-teachers provided written feedback to the students. At the end of the unit, students were instructed to choose one of the two open responses to rewrite for a better grade. Students were divided into two groups based on the open response prompt they chose to rewrite. The co-teachers used parallel instruction to guide students in how to answer the prompt and improve their writing. After direct instruction was completed, students remained in the small group to individually rewrite their open response. Coteachers circulated amongst the students and provided individual instruction and assistance as needed. The revised open responses were again co-graded to ensure consistency in grading.

Assessment Design

Assessment toward completion of these objectives will be evident through the students' submission of revised open responses. Students will reflect on the grade they earned using the student reflection sheet.







Name: Genevieve H. Columbo

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School District: **Hopedale Public Schools**

Superintendent: Pamela Smith

School: Hopedale Jr. / Sr. High School

Principal: Derek Atherton

Subject Area: Spanish I

Grade Level: Grade 7

Target Audience: Beginner Spanish students in immersion classroom environment

Number of days of unit/ activity: Two classes of fifty-five minutes each

Project Title

Prepositions: Experiential learning in a proficiency based language classroom

Project/ Unit/ Program-Focus/Goal

- -to collaborate in order to construct meaning and solve problems in Spanish
- -to give and follow directions
- -to build community

Lesson Objective:

-Students will use prepositions to identify, describe, ask questions, and express needs in order to guide classmates through a student-built maze

Language Functions utilized Spanish 1 Learners are mainly Novice-Low to Novice-Mid proficiency levels based on the American Council of Foreign Language Teaching. In this lesson each learner will be able to perform each function of the language at their varying abilities.

In this lesson the functions of the language produce include:

Novice-Mid	Novice-High	Intermediate-Low
------------	-------------	------------------

Describing	Give a description	Give a basic description	Give more detailed
people, places,	using one or two	& make simple	descriptions including

things, how and how well	short adjectives (ex: colors, numbers, size, shape)	comparisons using frequently used adjectives and adverbs	comparatives and superlatives
Asking and responding to questions	Respond to a simple question.	Ask and respond to simple, memorized questions	Ask and respond with some details to a variety of informational questions and follow-up questions
Expressing feelings and emotions	Say that I am happy or sad	Express basic emotions and feelings	Express a variety of emotions and feelings
Expressing preferences and opinions	Say I like or don't like something	Express preferences/ opinions in simple sentences	Express preferences/ opinions with reasons

Standard Strands Being Assessed

Massachusetts Foreign Language Standards

- Interpersonal communication
 - 1.3 Ask and answer questions
 - 1.4 Make and respond to requests
 - 1.5 Exchange information and knowledge
 - 1.7 Express needs and emotions

• Interpretive communication

- 2.1 Follow directions
- 2.2 Understand some ideas and familiar details
- 2.3 Obtain information and knowledge
- 2.4 Read and interpret signs, simple stories, poems, and informational texts

Materials

Open classroom space Classroom furniture- chairs, desks, tables Bandanas

Description

<u>Review</u>: (5 minutes) In an open space, students form a standing circle to review the preposition words. Teacher says a term and students repeat doing a gesture to signify where each word describes.

<u>Direct instruction:</u> (5 minutes) Write and draw new vocabulary "*el laberinto*" or the maze, "*para*" or stop in the board. Students copy terms and drawings in their notebooks.

The task: (35 minutes total)

Students will use objects in the classroom you will build a maze. Use preposition terms to safely guide a partner through the maze.

Divide the class into two groups Group A and B. Group A will each have a partner from Group B.

Hallway session: (Student practice 15 minutes) Group B

Group B works in the hallway to pair up and practice giving and receiving directions in Spanish. In the small group students will guide each other around the school wearing blindfolds.

<u>Classroom session:</u> (Simultaneous 15 minutes) Group A

In the classroom Group A will build a maze moving classroom furniture. (5 minutes)

b. After the maze is built, Group A write step by step directions on the board for reference. (10 minutes)

Guide through the maze: (10 minutes) Groups A & B

a. Group A members find their partner in the hallway from the other group and place a blindfold on their eyes.

Group A members speaking only Spanish guide their partner through the maze using prepositions to describe their every move.

Clean up: (5 minutes) Groups A & B

a. The class cleans up the and arranges the chairs in a circle

Debrief- (15 minutes)

Free Draw & Write- (5 minutes)

Students will write and/ or draw down all of the thoughts and feelings to describe their experience in the maze. On the board write some guiding terms such as:

Easy Like Scared Trust Help Fall Touch See Hard Problem

<u>Teacher lead discussion</u>- (10 minutes)

Teacher leads a group discussion in Spanish. We debrief the following questions: The questioning is differentiated depending on the students' levels of comprehension and output. For example a novice low learner would have the questions rephrased to a yes/ no either or question, while a novice mid speaker could answer higher order thinking questions.

• Did you like the activity? Why?

- What was a challenge?
- What was a problem?
- What was a success?
- What strategies did you use to complete the maze safely?
- What strategies would you use next time?
- How did it feel to guide?
- What did you observe?
- Members of Group B are you afraid to be guided next class?
- How did your partner help you?
- How could you see these skills helping you in real-life?

Day 2

Repeat the same lesson switching the groups. At the beginning of the lesson, introduce the self-assessment rubric and tell them to be mindful of the language they are using in class to complete the task at hand. Allow Group B to construct and lead their partners through the maze. Complete the same debrief.

At the conclusion of class students will self-assess on their text-type and function citing specific examples of what they said in class.

Assessment Design

Self- assessment participation:

Students are given a participation rubric that they assess how they performed in terms of amount of Spanish spoken, motivation to learn, participation, teamwork and responsibility. Students created the rubric based on the key skills needed to work in an immersion environment.

Self-assessment text type:

Students are assessed throughout the quarter on their text type demonstrated across the functions of the language. For this lesson the class self- assessed on the level of text type for each of the four functions used in the maze lessons. They were also asked to give examples of what they said on the right.

	Needs Improvement	Developing towards Expectations	Meets Expectations	Exceeds Expectations	For example, I said
Describing people, places, things, how and how well	Little to no target language production	Some words, a lot of cognates	Lists, Chunks of language, Memorized phrases	Fragments and emerging simple and compound sentences	
Asking & responding to questions	Little to no target language production	Some words, a lot of cognates	Lists, Chunks of language, Memorized phrases	Fragments and emerging simple and compound	

				sentences	
Expressing feelings and emotions	Little to no target language production	Some words, a lot of cognates	Lists, Chunks of language, Memorized phrases	Fragments and emerging simple and compound sentences	
Expressing preferences and opinions	Little to no target language production	Some words, a lot of cognates	Lists, Chunks of language, Memorized phrases	Fragments and emerging simple and compound sentences	

Resources:

Organic World Language www.owlanguage.com

American Council on Foreign Language Teaching http://www.actfl.org/sites/default/files/pdfs/ACTFL2014/SpiralingFunctionsandTasks.pdf







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School District and Address: Mendon-Upton Regional School District

150 North Ave. Mendon, MA 01756

Superintendent: Dr. Joseph Maruszczak

School Name and Address: Henry P. Clough Elementary School

10 North Ave.

Mendon, MA 01756

Principal: Mrs. Janice Gallagher

Curriculum Director/Coordinator and Address:

Mrs. Maureen Cohen 150 North Ave. Mendon, MA 01756

Subject Area: School Garden

Grade Level: K-4

Target Audience: All Students

Number of Days of Unit/Activity: Spring/Fall

Project Title School Garden and Healthy Eating Intertwine

<u>Project/Unit/Program - Focus/Goal</u>

Students will have access to hands-on learning in or around the school garden as well as learning about fresh vegetables and increasing their vegetable consumption.

- To make science come alive outside the classroom.
- To foster and encourage a sense of being part of a community of learners.
- To provide a program that works to build a sense of community through working together.

Standard Strands Being Assessed

Science Standards:

PK-LS1-1 (MA), PK-LS2-2 (MA), PK-LS2-3 (MA)

1-LS1-1, 1-LS3-1

3-LS1-1, 3-LS4-4

K-LS1-1, K-LS1-2(MA).

2-LS2-3, 2-LS4-1

4-LS1-1, 4-ESS3-1.

Materials

- Massachusetts Agriculture conferences for school garden. www.aginclassroom.org
- Massachusetts Horticultural Association www.masshort.org
- Mendon Greenhouse owner, Colleen Onclay's professional assistance
- Fuel Up to Play60 www.fueluptoplay60.com
- Stop and Shop SHAPE UP! Mini-grant
- High Mowing Organic seeds

Description

In 2014 a grant was received from Stop and Shop SHAPE UP! Mini-grant program. This allowed for Henry P Clough Elementary School to develop a school garden. A 6 raised bed garden was developed with the assistance of community volunteers. Teachers incorporated growing seeds into their classroom curriculums. Seedlings were cared for in the classroom and when the seedlings were viable, each classroom was given a portion of the raised bed to plant their seedlings. Varied classrooms would assist with watering and harvesting as the garden continued to grow. During summer hours, community members volunteered their time tending to and delivered vegetables to the Mendon Senior Center.

Two morning enrichment classes were offered and filled to help with the garden before school began. Students would learn about weeding, watering and harvesting fresh vegetables. Fresh vegetables were weighed and then delivered to the school cafeteria. The students would be given opportunities to try new vegetables as well as how the vegetables would be used in the schools salad bar or in foods and sauces sold for lunch. The students who grew, cared for and harvested the fresh vegetables were more apt to try new healthy foods. The garden was so successful that all teachers at Henry P. Clough Elementary School have offered and are currently tending to seedlings for this year's garden. Our school garden is now a big part of our school community.

Assessment Design

- Student's ability to work collaboratively and cooperatively on a project that supports the School Community
- The ability of students to understand and appreciate the art of gardening
- Positive feedback from students, teachers, parents and community members



3rd Grade students are shown picking peppers to be used in school's salad bar.



Morning enrichment students (K-3) are shown delivering freshly harvested vegetables to be used in the school's cafeteria. Mrs. Siple is talking with the students about importance of healthy choices and encouraging the students to try new food.



Mrs. Bellefontaine and a 4th grade student planted vegetables last fall.

Name(s): Vincent Kiejzo

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School District and Address: Milford Public Schools

31 W. Fountain Street Milford, MA 01757

Superintendent: Dr. Robert Tremblay

School Name and Address: Memorial Elementary School

12 Walnut Street Milford, MA 01757

Principal: Mrs. Lisa Burns

Curriculum Director/Coordinator and Address:

Dr. Kevin McIntyre 31 W. Fountain Street Milford, MA 01757

Subject Area: ELA/Informative Writing

Grade Level: 2

Target Audience: All Students (Grade 2)

Number of Days of Unit/Activity: Approx. 4-6 weeks

Project Title Nonfiction Animal Reports

<u>Project/Unit/Program – Focus/Goal</u>

The students will learn to find/evaluate a variety of nonfiction resources to be used to write a nonfiction report about an animal of their choice. The students will learn how to find information on web resources and how to use a word processing program on the computer to publish their final drafts.

Standard Strands Being Assessed

2016 MA Science and Technology/Engineering State Standards:

2-LS4-1

Common Core State ELA/Reading Standards:

W.2.2, W.2.5, W.2.6, W.2.7, W.2.8, RI.2.5, RI.2.7, L.2.1, L.2.1f, L.2.3, L.2.4, L.2.4a, L.2.4e

Materials

- Nonfiction Animal Books
- *Note Sheets (Habitat, Appearance, Diet, Interesting Facts), Paragraph Sheets, Rough Draft Sheets, Final Draft Checklist, Home Component Parent Letter
- Access to computers or tablets ON A CONTENT-FILTERED NETWORK
- Accounts with a cloud-based word processing program (such as Google Docs)
 - *Available at http://mrkiejzo.org/archive/animalreport.pdf

Helpful Online Resources:

- National Geographic Kids (free): http://kids.nationalgeographic.com
- Defenders of Wildlife Fact Sheets (free): http://www.defenders.org/animal-factsheets
- Animal Fact Guide (free): http://www.animalfactguide.com/animal-facts/cheetah/
- San Diego Zoo (free): http://animals.sandiegozoo.org/animals/
- Nonfiction Animal Passages (\$14):

https://www.teacherspayteachers.com/Product/Nonfiction-Reading-Comprehension-Passages-Animals-A-Z-Common-Core-682235

- Chit Chat Messages (\$9): https://www.teacherspayteachers.com/Product/Chit-Chat-Messages-Close-Reading-Passages-More-zoo-edition-1197472

Description

After learning about nonfiction texts (including text features), the students are introduced to the Animal Report project. They are given about a week to think about what animal they want to research before "committing". I do not allow them to choose pets because it is difficult for them to find information about their diet and habitat. (1) After they choose a topic, the students are allowed to explore PREDETERMINED websites and printed research. They use the note pages to take notes with facts about the specific topic (such as diet) from each resource. I allow the students to print their websites because it is easier for them to copy notes when they can highlight and they can also refer back to the resource if needed. (2) The students then take their notes to write a paragraph for each topic (diet, appearance, habitat, and interesting facts) using the paragraph organizer page. (3) When all individual paragraphs are done, they combine them together on the rough draft page(s) (only writing on the thicker red lines – the gray lines are for edits). (4) The rough draft is edited with peers and the classroom teacher(s) and the students write their opinion paragraph using the paragraph frame. (5) After being instructed on how to use the specific word processing program available, students use the classroom or lab computers to type their final draft. They also design a cover and can choose a picture of their animal to use on the cover.

Assessment Design

(6) When the final draft is complete, it is printed and sent home with the parent letter explaining the at-home display component. When the students bring back their displays, they are set out in the cafeteria and other teachers or students review them and ask the students questions about their animals. Students are evaluated on their ability to complete, with appropriate support, the

final draft of the paper. Although helpful, I do not use the at-home components to assess the

their project t and the stude edit their vide	 If you have the time to the class and record this can take their record These videos can 	I their presentation ording and use in then be posted or	on. We have Ap Movie (available on either a classro	ple iPads available free from the App	e for use Store) to
YouTube cha	nnel (depending on y	our school/distri	ct policy).		

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School District and Address: Millbury Public Schools

12 Martin Street Millbury, MA 01527

Superintendent: Greg Myers

School Name and Address: Elmwood Street School 40 Elmwood Street Millbury, MA 01527

Principal: Andrew Hall

Curriculum Director/Coordinator and Address:

Jennifer Bellville 12 Martin Street Millbury, MA 01527

Subject Area: ELA

Grade Level: Kindergarten through Grade 3

Target Audience: Students

Number of Days of Unit/Activity: September through June

Project Title Daily 5: Fostering Literacy Independence in the Elementary Grades through training and coaching

Project/Unit/Program - Focus/Goal

Our focus for this ongoing program was to integrate the routines and framework for Daily 5 in order to build upon student's literacy skills while the teacher pulls small groups for guided reading. Our goal for students was to internalize these expectations that allowed for all of the children to be engrossed in their reading and writing so much that these tasks became a habit while facilitating their independent learning.

Standard Strands Being Assessed

The Daily 5 structure and routine allows for most of the ELA standards to be addressed at all grade levels. In **Work on Writing** students have an opportunity to use the writing standards at their grade level through the different prompts that their teachers will select throughout the year. Learned standards can be reinforced during this independent time to check for a student's ability to generalize these standard based skills. In **Word Work** students are accessing RF standards at their grade level along with the Language standards. When students are meeting with their

teacher for **Guided Reading** or **Reading to Someone** they are able to demonstrate an understanding of the RL standards, RI standards (depending on text selection), and the SL standards for discourse. When students are in **Reading to Self** they are engaging with their RL and RI standards independently.

Materials

Leveled books

- Writer's notebook
- Daily 5 organizational tools
- Phonics/word work centers
- Online resources:
 - o https://www.readinga-z.com/
 - o https://www.thedailycafe.com/
 - o http://www.mylexia.com/
 - o https://www.raz-kids.com/

Description

During the spring of 2014-2015 school year teachers were trained in the Daily 5 theory and practices in order to implement this structure/routine in their classrooms. When the 2015-2016 school year began teachers were then given support in the classroom as they applied the management system within their guided reading blocks. This support took on many forms. There was modeling of rotations, individual centers and how to start setting expectations with students. Resources were gathered for center activities and management tools. Professional learning communities were established discuss different strategies for implementation. Teachers also participated in observations of colleagues during the Daily 5 routine in order to grow their own practice.

Assessment Design

Teachers across all grade levels utilize different strategies to assess their student's progress both with the skills and standards addressed within the Daily 5 centers and the level of independence being gained. Some teachers use observation checklists, rubrics, weekly work collection, and more established formative assessments. Teachers are also using this year to reflect on and assess the implementation of Daily 5 in their classrooms in order to improve on their own instructional practices.







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School District and Address: Northbridge Public Schools

87 Linwood Ave.

Whitinsville, MA, 01588

Superintendent: Dr. Catherine Stickney

School Name and Address: Northbridge Middle School

171 Linwood Ave.

Whitinsville, MA, 01588

Principal: John Zywien

Curriculum Director/Coordinator and Address:

Amy Mckinstry 87 Linwood Ave.

Whitinsville, MA 01588

Subject Area: STEM, Technology, Art

Grade Level: 5-8

Target Audience: Grades 7 + 8

Number of Days of Unit/Activity: 2015 - 2016 ongoing.

Project Title

Steam Collaborative: Integration of Technology, Science and the Arts

Project/Unit/Program - Focus/Goal

1 - Adaptive Technology

In STEM, the students read, "An Interview with Matthew," and learned about some of the challenges that people with disabilities face. They then worked in groups, following the steps of the engineering design process, to design, test and improve a straw holder that would assist Matthew. Lastly, they created a poster to advertise their product.

In Art I had two students, who were on design teams in Stem, create a user guide brochure for their product. These students utilized the creative process, brainstorm-sketch-final product, to develop their brochure to its fullest potential

In Technology, the students used an online video tool to create a commercial to share information on the project that was developed in STEM and advertised in Art.

2 - Digitally Coding the Analog World

In STEM, the students used artwork to practice encoding and decoding in binary code.

In Art students created abstract artworks using the elements of shape and color and the principle of pattern to provide artworks for tech students to translate into digital works.

In Technology, the students recreated the Art drawing on the computer using java scripting.

3 - The Art and Science of Ceramic Technologies

In STEM, the students investigated the use of kiln technology and its use in modern industry. In Art students participated in a teacher led demonstration on constructing functional pottery from raw clay. In this process they learned and discussed how clay is formed, sculpted and what physical properties it possess that affect its firing temperature. They also discussed and learned about the physical transformations that occur in the kiln, both in a bisque and glaze firing and what temperatures it requires for both. Then students created their own pottery.

In Technology class students examined the Ceramic Color software - Matrix Glaze and discussed technology's coding system for digital hues.

Standard Strands Being Assessed

STEM:

7.MS-ETS1-7(MA). Construct a prototype of a solution to a given design problem.
7.MS-ETS3-1(MA). Explain the function of a communication system and the role of its components, including a source, encoder, transmitter, receiver, decoder, and storage.
8.MS-ETS2-4(MA). Use informational text to illustrate that the materials maintain their composition under various kinds of physical processing; however, some material properties may change if a process changes the particulate structure of a material.

ART:

PreK-12 STANDARD 1 Methods, Materials, and Techniques Students will demonstrate knowledge of the methods, materials, and techniques unique to the visual arts.

PreK-12 STANDARD 4 Drafting, Revising, and Exhibiting Students will demonstrate knowledge of the processes of creating and exhibiting artwork: drafts, critique, self-assessment, refinement, and exhibit preparation.

PreK-12 STANDARD 9 Inventions, Technologies, and the Arts Students will describe and analyze how performing and visual artists use and have used materials, inventions, and technologies in their work.

TECHNOLOGY:

G6-8: 1.24 Create a multimedia presentation using various media as appropriate (e.g., audio, video, animations, etc.).

G6-8: 2.7 Explain how technology can support communication and collaboration, personal and professional productivity, and lifelong learning.

G6-8: 3.7 Plan, design, and develop a multimedia product to present research findings and creative ideas effectively, citing sources.

MS-ETS2-7(MA). Recognize that processes that transform materials into products can be controlled by humans or by computers. [Clarification Statement: Computer-aided processes are robotic or automated manufacturing.]

Materials

STEM: "An Interview with Matthew" skit, variety of containers, straws, pipe cleaners, rubber bands, paper clips, tape, <u>code.org/curriculum/course4/17/Teacher</u>, Article on Space tiles <u>news.discovery.com/space</u> Space tile video -pbslearningmedia.org/resource

<u>Art</u>: Paper, pencil, colored pencil, sharpie marker, bristol board, oil pastel, ruler, stoneware clay, pottery tools, electric kiln, glaze, glaze brush

<u>**Technology**</u>: Khan Academy, Matrix Glaze Software <u>matrix2000.co.nz</u>, Animoto Software - <u>animoto.com/</u>

Description

This year, the Art, STEM and Technology teachers decided to collaborate on some units of study. Our goal was to expose the students to various projects and discuss how the disciplines are connected in the real world.

In the fall we started with the adaptive technology exploration. The students were able to see how an idea could be developed, and promoted through the sciences, art and technology. The winter project allowed students to explore the process of encoding and decoding across the disciplines. The spring project allowed us to explore the ceramic sciences once again, across the three disciplines.

Together, these experiences allowed students to see how many disciplines work together on a common goal in professional endeavours.

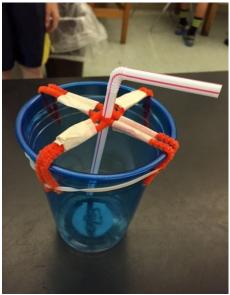
Assessment Design

STEM: Students respond and reflect on the Steps of the Engineering Design Process, Product Design & Poster Presentation, Students work together to encode and decode a message, Guided discussions

ART: Massachusetts Visual Arts Standards based rubric

TECHNOLOGY: Presentation Quiz, Video Production Rubric, Java Scripting Quiz, Color Software Worksheet







Name(s): Rich Levansavich

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School District and Address: **Sutton Public Schools**

407 Boston Road Sutton, MA 01590

Superintendent: Theodore Friend

School Name and Address: Sutton High School

383 Boston Road Sutton, MA 01590

Principal: Ted McCarthy

Curriculum Director/Coordinator and Address: N/A

Subject Area: History and Social Sciences

Grade Level: 9-12

Target Audience: School Community and the Community at large

Number of Days of Unit/Activity: Year-long elective class

Project Title Community Service Learning Class (elective)

Project/Unit/Program - Focus/Goal

Community Service Learning (CSL) is a method of teaching and learning that connects classroom lessons with meaningful service to the community. Service projects can be integrated into any curriculum at any grade level. Service learning affects students academically and emotionally, and increases awareness and acceptance of others in their community. CSL's goal is to make learning more meaningful by providing real world experiences. We hope to improve student learning and leadership, and to build community relations.

Standard Strands Being Assessed

The strands that are addressed vary based on the project attempted or accomplished. Projects that are created may also be applied to the SHS's Mission Statement/Core Values and Beliefs: At Sutton Memorial High School, we are committed to fostering a community of responsible, life-long learners who value integrity, academic excellence, innovation, and the pursuit of personal success in a safe, supportive, and challenging learning community.

Materials

www.kidsconsortium.org www.rootsandshoots.org www.Gsn.nylc.org www.nylc.org www.pointsoflight.org

Description

Students surveyed the entire community (school district and town) at the beginning of the school year, asking what the needs of the community were. After tallying results, students then chose a class project based on the needs of the community. I asked students to aim high and to choose a project with the hopes of completing the project, but completion was not necessary. All they had to do was their best. Also, all projects had to be tied into the curriculum or school mission statement, have both in-school and community partners, a timeline, a budget, and an impact to the community (serve the need). Projects that were created include:

<u>Ice Skating Rink</u>-partnered with town selectman, fire department, town administrator, local business, and math teacher. Project completed, but never had cold enough weather for more than one weekend of fun.

<u>Skateboard Park</u>- partnered with town administrator, grounds manager, math teacher, but never found site and thusly not completed.

<u>Snack Cart to benefit Cancer Home</u>- attempted to partner with local businesses, school lunch director, and school administrator. Project not completed, funding was main concern.

<u>Pollution Awareness</u>-partnered with Town Administrator, town residents, various teachers and administrators. Project completed and pollution signs made and hung.

<u>Community Garden</u>-partnered with area businesses, teacher, superintendent, and Senior Center. Project on-going and will continue into the summer to provide local residents with fresh vegetables.

<u>School Store</u>-partnered with school department, business teacher, and area businesses. Project completed and ongoing.

All projects involved research, design, organization, planning/scheduling, time management, communication, follow through, leadership, responsibility, mature attitude, and very importantly-real world experiences.

Assessment Design

After students determine the community need and then design a project, the project has to be presented to the teacher and class. Once approved, students are required to develop a weekly planner at the start of each week. At the end of the week, students must record their achievements and reflect on their efforts of the week in a journal.

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School District and Address: Uxbridge Public Schools

Superintendent: Kevin Carney

School Name and Address: Whitin Elementary School

120 Granite Street Uxbridge, MA 01569

Principal: Lori Fafard

Curriculum Director/Coordinator and Address: Carol Cavenaugh

Subject Area: Math

Grade Level: Fifth grade, although it can be adapted to any grade level

Target Audience: Grade five math students

Number of Days of Unit/Activity: Ongoing throughout the school year, although it can be adapted for specific units of study

Project Title Math Flexible Grouping (MFG)

Project/Unit/Program – Focus/Goal

- More opportunity for professional collaboration
- More student risk taking
- Increase in differentiated instruction
- Increase in student achievement

Standard Strands Being Assessed

This program can be adapted for specific chosen math units or used throughout a school year. The grade five math team at Whitin Elementary chose to commit to Math Flexible Grouping for the entire 2015-2016 school year. All of the grade five Common Core State Standards were considered and assessed.

Materials (if you have links to resources, include them here)

- team created timeline outlining length of each unit including pre and post-test dates
- team determined pre/post-tests for each unit being considered for MFG (pre and post-tests should be identical for valid assessment of individual student growth)

- parent informational handout
- *Math In Focus* series resources (may vary depending upon district)
- Class list template to be modified for each unit of study considered for MFG

Description

Proof in the Pudding:

Math Flexible Grouping was implemented on a fifth grade team at Kaneland John Shields School in a suburb of Chicago.

- After one year, growth was seen in students' state and local assessments.
- Students and teachers also expressed positive outcomes in learning, teaching, collaborating and confidence level.

How groupings are formed:

- Groupings are determined by a combination of unit pretest results in addition to teacher input.
- Groupings change at the beginning of each unit of study which has been determined and allotted a time frame by grade 5 math teachers. There are seven units in fifth grade. The unit's length depends upon the amount of content being covered.

Anticipated benefits:

1. More student risk taking:

- MFG encourages student engagement and promotes self-esteem in lower level learners by providing a non-threatening learning environment where all input feels valued.

2. Increase in differentiated instruction:

- -There is more time to prepare individualized activities for students. This allows for more variety in instructional methods that meet all learners' needs.
- -MFG allows for more effective teacher pacing and steers away from time and resource constraints inherent with 4 to 5 different learning levels in one room.

3. Increase in student achievement:

- -More on level instruction provides appropriate pacing of learning for all students and increased enhancement and remediation opportunities.
- -Flexibility provides opportunity for students to experience different teachers and teaching styles and promotes positive relationships with teachers.
- -MFG prepares students for the transition to middle school the following school year.

4. More professional collaboration:

- -Each team member can bring different skills to the table.
- -Math teachers work more collaboratively and share students' growth, allowing more in depth knowledge for all students' learning progression.
- -Math teachers share resources to encourage continuity across classrooms.
- -Math teachers will also collaborate on lesson planning and discussion of students' progress. Student progress discussions will include communication for report cards and parent/team communication.

Assessment Design

- Math Pre/Post test results
- STAR/MCAS assessments
- Teacher, Student, and Parent feedback

Grade 5

average Sept 2015	average 2016	average point increase	+grade equivalent	average SGP
694	731	+37	+0.8	64
705	741	+36	+0.8	58
719	774	+55	+1.4	72
728	784	+56	+1.6	78
708	765	+57	+1.3	77
591	672	+81	+1.1	77
Score to be proficient 697+	Score to be proficient 730+			

The second column's scores, labeled "average 2016," come from student testing in January of 2016; in most classes then, students have, on average, made a year's growth in math at only the half year mark! Outstanding!