

**Madison Public Schools  
Board of Education  
Curriculum and Student Development Committee  
Tuesday, April 5, 2022  
5:30 PM  
Hammonasset Room and Zoom**

**MEETING AGENDA**

1. English Language Arts: Coaches and Coordinators
  - Transfer Goal Vertical Impact and Profile of a Graduate work
  - Progression Development Sample
  
2. FAB LAB  
Corey Rice, Dawn Fiorelli, Brian Bodner
  
3. Public Comment

**Future Meeting Dates**

**All meetings will begin at 5:30 p.m. unless otherwise noted**

May 10, 2022

June 7, 2022

*The Town of Madison does not discriminate on the basis of disability, and the meeting facilities are ADA accessible. Individuals who need assistance are invited to make their needs known by contacting Paula Carabetta at 203-245-5644 or by email at [carabettap@madisonct.org](mailto:carabettap@madisonct.org) at least five (5) business days prior to the meeting.*



# K-12 ELA Guiding Document Revisions

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Reading and Writing  
Transferable Skills



# History of Our Transfer Goals - Example

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## **Previous Transfer Goal:**

Compare and contrast informational and literary texts to synthesize information to grow and change a position.

## **Updated Reading Transfer:**

Compare and contrast informational and literary texts to analyze information to identify possible underlying assumptions, patterns, and relationships to make inferences.

## **Profile of a Graduate Capacities:**

Analyzing, Idea Generation, and Alternate Perspectives

# Profile of a Graduate - I Can Statements

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## Analyzing:

I can...

- Examine, assess, interpret or evaluate relevant information.
- Identify underlying assumptions about a topic, or within a set of data.
- Identify patterns within a topic or a set of data, using multiple sources of information.
- Identify relationships between different pieces of information/data/evidence, using multiple sources of information.
- Make inferences based on the patterns and relationships of the information I have analyzed from multiple sources

## Alternate Perspectives:

I can...

- Examine an issue through multiple perspectives by citing evidence from a variety of sources and personal experiences.
- Support my position while respecting the positions of others
- Examine the legitimacy of competing perspectives.
- Consider unrepresented views and possibilities.

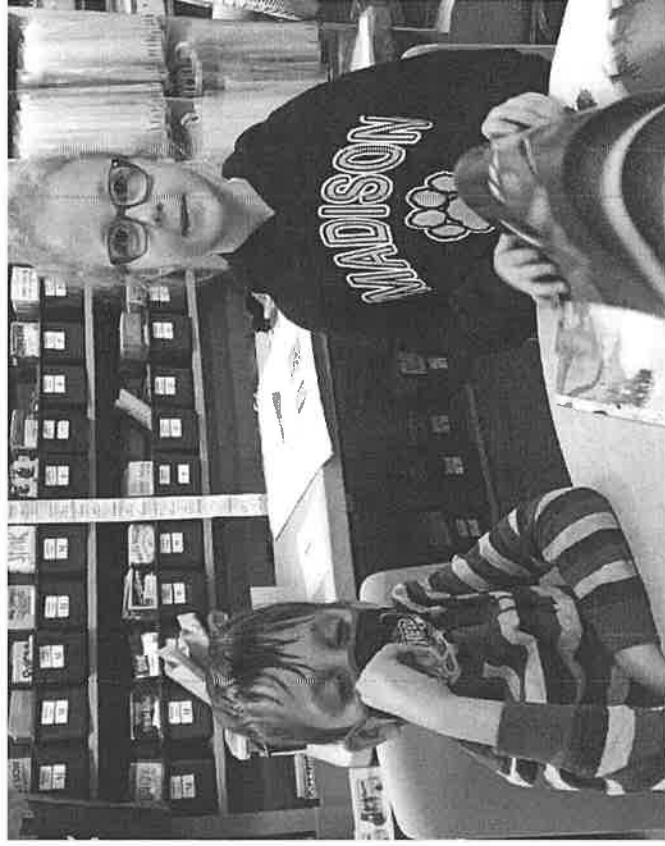
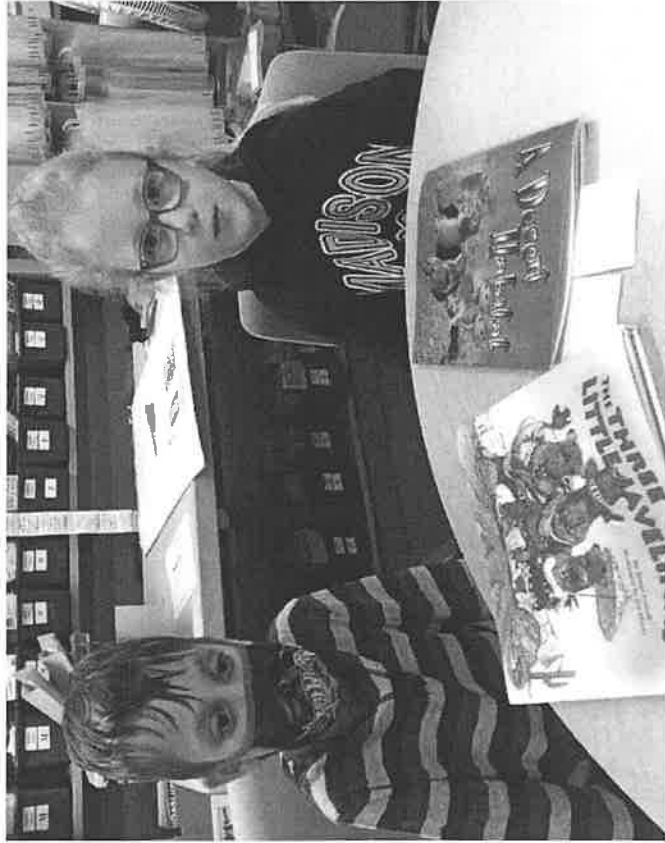
# GRADE 1

Teaching Point:

Readers apply what they learned about deserts in the Southwest to think about how the setting impacts the story of *The Three Little Javelinas*.



**UNDERSTANDING THE SETTING IS IMPORTANT TO UNDERSTANDING THE STORY**





**OTHER TEXTS USED THROUGHOUT THE UNIT**

# Grade 2



A grade 2 partnership talks about the differences and similarities between fiction and nonfiction texts and author's purpose, audience, and message:





# Expository vs Narrative Nonfiction

**Inquiry:** Students explore expository and narrative NF texts, turning and talking about the similarities and differences via

A Venn diagram. Over the course of several lessons students analyze and infer. The author shares facts through story and craft moves. Children ultimately write their own:

A Day in the Life Of... book



# Grade 5

	<u>Historical Fiction</u>
<b>Focus</b>	Westward Expansion, Civil War, Immigration, Great Depression, World War II, Civil Rights
<b>Bends</b>	Exploring time periods through nonfiction Time Period Book Clubs
<b>Transfer</b>	<u>Two Voice Poem</u>



**Grade Eight Performance-Based Assessment**  
**Analyzing Nonfiction to Connect Fiction to Societal Concerns**

**Readers discuss the importance of reading dystopian literature by revealing real world connections.**



- Dystopian literature reflects extreme examples of real world problems.
- Based on real world connections, what lesson does dystopian literature teach us?

**A one pager is a way to visually create a product that illustrates key ideas and information.**

**Both symbols and words are used to share takeaways with the intended audience.**

**Grade Eight Dys Lit PBA**



# Stephanie & Celina - High School



Literature and Writing [Freshman Year]  
*Romeo & Juliet* and the Teenage Brain  
Ben L.

Analyzing:  
I can...

- Examine, assess, interpret or evaluate relevant information.
- Identify patterns within a topic or a set of data, using multiple sources of information.
- Identify relationships between different pieces of information/data/evidence, using multiple sources of information.
- Make inferences based on the patterns and relationships of the information I have analyzed from multiple sources



World Literature Honors, Reality and Unreality [Junior Year]  
*Frankenstein* and Science/Technology  
Andrew O.

# Progression - Transfer of POG Analysis and Alternate Perspective Work

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## **Elementary:**

I can apply what I learn through nonfiction to better understand my fiction reading.

I can identify the differences and similarities between fiction and nonfiction, especially author's purpose, audience, and message.

## **Intermediate:**

I can use nonfiction reading and research to deeply analyze characters.

I can put myself in the character's shoes and think about a world different from my own.

## **Middle School:**

I can analyze how literature reflects real world issues.

I can research real world issues to better understand important messages in literature.

## **High School:**

I can use multiple sources (literature and nonfiction research) to closely read, analyze, and develop a complex thesis about a text.

# Learning Progression

## Essay Writing Learning Progression Grades 6-10

### Standard Progressions

#### Standard IV1 (secondary)

Grade 6	Grade 7	Grade 8	Grades 9&10
<p>CCSS.ELA-LITERACY.W.6.1</p> <p>Write arguments to support claims with clear reasons and relevant evidence.</p>	<p>CCSS.ELA-LITERACY.W.7.1</p> <p>Write arguments to support claims with clear reasons and relevant evidence.</p>	<p>CCSS.ELA-LITERACY.W.8.1</p> <p>Write arguments to support claims with clear reasons and relevant evidence.</p>	<p>CCSS.ELA-LITERACY.W.9-10.1</p> <p>Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.</p>
<p>CCSS.ELA-LITERACY.W.6.1.A</p> <p>Introduce claim(s) and organize the reasons and evidence clearly.</p>	<p>CCSS.ELA-LITERACY.W.7.1.A</p> <p>Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.</p>	<p>CCSS.ELA-LITERACY.W.8.1.A</p> <p>Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.</p>	<p>CCSS.ELA-LITERACY.W.9-10.1.A</p> <p>Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.</p>

**Standard Progressions**

*Standard W1 (secondary)*

Grade 6	Grade 7	Grade 8	Grades 9&10
<p>CCSS.ELA-LITERACY.W.6.1</p> <p>Write arguments to support claims with clear reasons and relevant evidence.</p>	<p>CCSS.ELA-LITERACY.W.7.1</p> <p>Write arguments to support claims with clear reasons and relevant evidence.</p>	<p>CCSS.ELA-LITERACY.W.8.1</p> <p>Write arguments to support claims with clear reasons and relevant evidence</p>	<p>CCSS.ELA-LITERACY.W.9-10.1</p> <p>Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.</p>
<p>CCSS.ELA-LITERACY.W.6.1.A</p> <p>Introduce claim(s) and organize the reasons and evidence clearly.</p>	<p>CCSS.ELA-LITERACY.W.7.1.A</p> <p>Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically.</p>	<p>CCSS.ELA-LITERACY.W.8.1.A</p> <p>Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically</p>	<p>CCSS.ELA-LITERACY.W.9-10.1.A</p> <p>Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.</p>
<p>CCSS.ELA-LITERACY.W.6.1.B</p> <p>Support claim(s) with clear reasons and relevant evidence, using credible sources and demonstrating an understanding of the topic or text.</p>	<p>CCSS.ELA-LITERACY.W.7.1.B</p> <p>Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p>	<p>CCSS.ELA-LITERACY.W.8.1.B</p> <p>Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.</p>	<p>CCSS.ELA-LITERACY.W.9-10.1.B</p> <p>Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.</p>

## Essay Writing Learning Progression 2

<p>CCSS.ELA-LITERACY.W.6.1.C</p> <p>Use words, phrases, and clauses to clarify the relationships among claim(s) and reasons.</p>	<p>CCSS.ELA-LITERACY.W.7.1.C</p> <p>Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence.</p>	<p>CCSS.ELA-LITERACY.W.8.1.C</p> <p>Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.</p>	<p>CCSS.ELA-LITERACY.W.9-10.1.C</p> <p>Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p>
<p>CCSS.ELA-LITERACY.W.6.1.D</p> <p>Establish and maintain a formal style.</p>	<p>CCSS.ELA-LITERACY.W.7.1.D</p> <p>Establish and maintain a formal style.</p>	<p>CCSS.ELA-LITERACY.W.8.1.D</p> <p>Establish and maintain a formal style</p>	<p>CCSS.ELA-LITERACY.W.9-10.1.D</p> <p>Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p>
<p>CCSS.ELA-LITERACY.W.6.1.E</p> <p>Provide a concluding statement or section that follows from the argument presented.</p>	<p>CCSS.ELA-LITERACY.W.7.1.E</p> <p>Provide a concluding statement or section that follows from and supports the argument presented.</p>	<p>CCSS.ELA-LITERACY.W.8.1.E</p> <p>Provide a concluding statement or section that follows from and supports the argument presented.</p>	<p>CCSS.ELA-LITERACY.W.9-10.1.E</p> <p>Provide a concluding statement or section that follows from and supports the argument presented.</p>



## Essay Writing Learning Progression 3

### Standard W8 (Priority)

Grade 6	Grade 7	Grade 8	Grades 9&10
<p>CCSS.ELA-LITERACY.W.6.8 Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.</p>	<p>CCSS.ELA-LITERACY.W.7.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</p>	<p>CCSS.ELA-LITERACY.W.8.8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</p>	<p>CCSS.ELA-LITERACY.W.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p>

### Standard W9 (Priority)

Grade 6	Grade 7	Grade 8	Grades 9&10
<p>CCSS.ELA-LITERACY.W.6.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.</p> <p>CCSS.ELA-LITERACY.W.6.9.A Apply <i>grade 6 Reading standards</i> to literature (e.g., "Compare and contrast texts in different forms or genres [e.g., stories and poems; historical novels and fantasy stories] in terms of their approaches to similar themes and topics").</p>	<p>CCSS.ELA-LITERACY.W.7.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.</p> <p>CCSS.ELA-LITERACY.W.7.9.A Apply <i>grade 7 Reading standards</i> to literature (e.g., "Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history").</p>	<p>CCSS.ELA-LITERACY.W.8.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.</p> <p>CCSS.ELA-LITERACY.W.8.9.A Apply <i>grade 8 Reading standards</i> to literature (e.g., "Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is</p>	<p>CCSS.ELA-LITERACY.W.9-10.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.</p> <p>CCSS.ELA-LITERACY.W.9-10.9.A Apply <i>grades 9-10 Reading standards</i> to literature (e.g., "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</p>

Essay Writing Learning Progression 4

<p>CCSS.ELA-LITERACY.W.6.9.B Apply <i>grade 6 Reading standards</i> to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not").</p>	<p>CCSS.ELA-LITERACY.W.7.9.B Apply <i>grade 7 Reading standards</i> to literary nonfiction (e.g., "Trace and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient to support the claims").</p>	<p>CCSS.ELA-LITERACY.W.8.9.B Apply <i>grade 8 Reading standards</i> to literary nonfiction (e.g., "Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced").</p>	<p>Shakespeare]"). CCSS.ELA-LITERACY.W.9-10.9.B Apply <i>grades 9-10 Reading standards</i> to literary nonfiction (e.g., "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").</p>
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**Work Sample Progressions**

	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Thesis Statement Student Samples (LA)	In the book <i>Scat</i> by Carl Hiaasen, Nick the main character, and Marta, Nick's close friends go on quests. When Ms. Starch their teacher, disappears they go on adventures. As Nick and Marta find these characters they find out, "Don't judge people before you get to know them."	In this book Alan Gratz suggests that moving on and making sacrifices for a good greater than yourself, is something everyone should be ready for.	In the dystopian novels, the heroes rebel against a government who controls their citizens through surveillance and by banning everyday items.	Researchers have studied how this increase in usage has affected people's lives and have found that users easily become addicted to their phones which leads to a variety of detrimental effects, especially poor mental health.	Currently, the only solution available to combat the fashion industry's effect on the environment is to decrease consumption from fast-fashion retailers and shop second hand.
Social Studies	*Prompted by the teacher: Industrial farming is good for humanity.  Factory farms are dangerous.  Hunter gatherers produced food sustainably.	Prompted by the teacher: Sophie Scholl was an unsung hero of World War II.  Hollywood films are a valuable resource for teaching history..  Militarism (or alliances, imperialism, or nationalism) was the most important cause of World War I.	Student generated: During the Gilded Age people were at war with each other.  Wealth was polarized during the Gilded Age.  People cared little for each other during the Gilded Age.		

Essay Writing Learning Progression 6

	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
<p>Body Paragraph Student Samples</p>	<p>To begin with, Nick judges Twilly before she gets to know him. Nick and Marta run into Twilly while investigating Ms Starch's house. Nick and Marta were whispering to each other while inside Ms Starch's house and Nick said, "Twilly has a rotten temper and has no good intentions". -Page 164. Later that day they run into Twilly again at Black Vine Swamp. Nick and Marta start talking and they say Twilly is "A creep."-Page 5. That's when Nick and Marta start getting a bit suspicious. However, Nick and Marta were wrong about Twilly. Twilly ended up being a helpful, kind, and smart person. Nick and Marta would not have been able to find the black panthers along with Ms Starches help. Twilly gave Nick and Marta clues about Ms Starch's disappearance and the black panthers getting endangered. Twilly spent day and night getting more clues to help Nick and Marta solve the mystery. In the end of the book, Nick and Marta were able to find Ms Starch and the black panthers thanks to Twilly for helping so much. Nick and Marta created a special bond together that nobody else would be able to create. In final consideration, without Twillys</p>	<p>While Michael is with a group of Hitler Youth in some grasslands searching for a spy, he is faced with a difficult decision. He is surrounded by Nazi's and doesn't know what to do with a British spy. If he gets caught his cover is blown. If his cover is blown, it could make Germany attack his homeland of Ireland because of it's false neutrality. "My da is the Irish ambassador to Germany. They've helped other Allied pilots get out of Germany. They'll help you too. But they don't even know you were shot down. I had to act fast." (Gratz 61 ) By putting his own blood in a certain area, he was able to foil his enemies' plans. Michael acted alone with such bravery, even though he was only thirteen! He stood alone for a greater purpose, to save the life of an essential British airman. This airman was crucial to the overall success of Michael's mission. The airman, Simon, helped Michael overcome his fear of heights and to understand that everyone makes sacrifices for a cause</p>	<p>In both books, the government bans everyday items in an attempt to control the people's access to knowledge. In the beginning of 1984, Winston buys his diary off the black-market because keeping a diary is considered a thought crime. Orwell writes: "He had carried it home guiltily. Even with nothing written in it was a compromising possession. What he was about to do was open a diary. This was not illegal (nothing was illegal, since there were no longer any laws), but if caught it would be punished by death, or twenty-five years in a forced labor camp" (6). Owing Goldstein's book is a thought crime because the book talks against the party. In order to get the book people have to join the brotherhood, an anti-big brother group. Evidently, in <i>The Giver</i>, Feelings, colors, and seasons are all banned.</p>	<p>The growing interest in social media has also spiked addiction levels which has in turn significantly impacted mental health. Social media platforms like Instagram and Tik Tok have caused users to become addicted. Users are over concerned about their social media accounts, compelling them to constantly be on the platform. Additionally, when people are on these platforms they experience a variety of positive emotions when they receive a "like" or post an image of themselves due to the release of dopamine in the brain. This is the same hormone released when taking drugs. "Neuroscientists have compared social media addiction with getting directly injected with dopamine" (Hilliard). However, this addiction can lead to negative impacts on a person such as mood changes, preoccupation with</p>	<p>To the average consumer, this business model seems harmless. Companies are just trying to survive in an ever-changing industry, and the public has quick access to popular designs at a discounted price. It appears to be a beneficial process for everyone. However, this has led to an increased rate of consumerism which isn't necessarily a good thing. Since 2000 the number of items of clothing bought per year has increased by sixty percent (Fellows). At the same time, it's estimated that the average person keeps clothes for half as long as we did fifteen years ago (Fellows). As a result, 2.5 two-point-five billion pounds of clothing ends up in landfills every year, most of which is non-biodegradable. To make matters worse, this can't even compare to a garment's impact on the environment</p>

Essay Writing Learning Progression 7

	<p>help, Nick and Marta would not have solved all the mysteries that he did.</p>	<p>greater than themselves. Michael was brave and had the courage to act in the very moment it was needed. Michael was doing an exemplary job of acting in a dangerous situation for something much larger than himself.</p> <hr/> <p>S.S. Unsung hero exemplar</p> <p>Even after the war, Martha Gellhorn was still helping others, She went to Brazil to showcase the lives of street children, and wrote about the war between El Salvador and Nicaragua. Martha Gellhorn's work has inspired and created a legacy to others. She made people mindful about what was going on around the world. She also stood up to the people who opposed women</p>	<p>Normal citizens do not have memories of color, only The Giver and the Receiver of Memory do. We see this when Lowry writes:          "Suddenly Jonas had noticed, following the path of the apple through the air with his eyes, the piece of fruit - well, this was the part that he could not adequately understand - the apple had changed" (24). In this scene Jonas sees color for the first time after The Giver gave him the memory. He later asks the giver what he saw and learns about color. The author shows that if people let the government put restrictions or limits in place then soon they will not have any independence. If someone is not able to stand up against the government then nothing stops the government from taking everything from the people. That is why it is so important to speak out when something or someone is unjust.</p>	<p>social media influencers, withdrawal symptoms and reliance on social media to forget about anxiety and stress. These addiction behaviors lead to poor mental health. Studies have shown that "27% of teens who spend more than 3 hours a day on social media show signs of poor mental health" (Hilliard). Social media provides people who are feeling stressed, lonely or depressed with rewards they are not receiving in real life making them addictive and craving those rewards. Also, when a person is too involved with social media they can feel isolated and unhappy because they see posts and compare themselves to others. In most cases those people feel jealous and become depressed.</p>	<p>during the manufacturing process. Based on findings from the UN, it has been concluded that the "fashion industry uses more energy than aviation and overseas shipping combined," and is responsible for "ten percent of the world's carbon footprint." (Hoikkala).</p>
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Essay Writing Learning Progression 8

		<p>working regular jobs like men, becoming one of the first women in journalism. Martha Gellhorn has made such an impact, a group of people named a prize after her called the The Martha Gellhorn Trust. This prize is given to journalists who showcase new stories that talk about both sides of the conflict, and isn't biased.</p>	<p>Grade 8 S.S. paragraph The pictures showcase how the amount of money a person had influenced the quality of life more than any other factor at the time. The first picture displays a woman in a fancy dress who had an expensive looking chair and birds flying around her in what looks like a palace. It was all regal looking and extremely unnecessary. The woman with the fancy dress clearly has plenty of extra money that she spent on the photoshoot. In which she chose to get pictures taken of her when she could have spent money on necessities for life which is all the poor could afford to do. As the Gilded Age went on the poor and rich became even more separated as the rich's clothing only got more intricate,</p>		

Essay Writing Learning Progression 9

			whereas the poor's clothing got more and more simplistic and cheaper.		
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	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Full Essay Samples	<u>Personal Essay Sample 1</u> <u>Personal Essay Sample 2</u> <u>Personal Essay Sample 3</u> <u>Literary Essay Sample 1</u> <u>Literary Essay Sample 2</u>	<u>Literary Essay Grade 7 Examples</u> <u>Use of Hollywood films exemplar</u> <u>Unsung Hero Full Essay Example</u>	<u>Grade 8 Essay &amp; Rubric</u> <u>Grade 8 S.S. Essay exemplar</u>	<u>Sample Essay 1</u> <u>Sample Essay 2</u>	<u>Sample Essay 1</u>

Essay Writing Learning Progression 10

	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
<p><b>Essay Rubric</b></p>	<p><u>Grade 6 Literary Essay Rubric</u>  <u>Grade 6 Personal Essay Rubric</u>  <u>Literary Essay Checklist</u></p>	<p><u>Grade 7 Essay Rubric</u>  <u>Unsung Hero Assignment</u></p>	<p><u>Grade 8 Essay Rubric</u></p>	<p><u>Lit Essay Rubric - Freshman Literature and Writing</u>  <u>Thesis Statement Rubric</u></p>	<p><u>Synthesis Rubric</u></p>

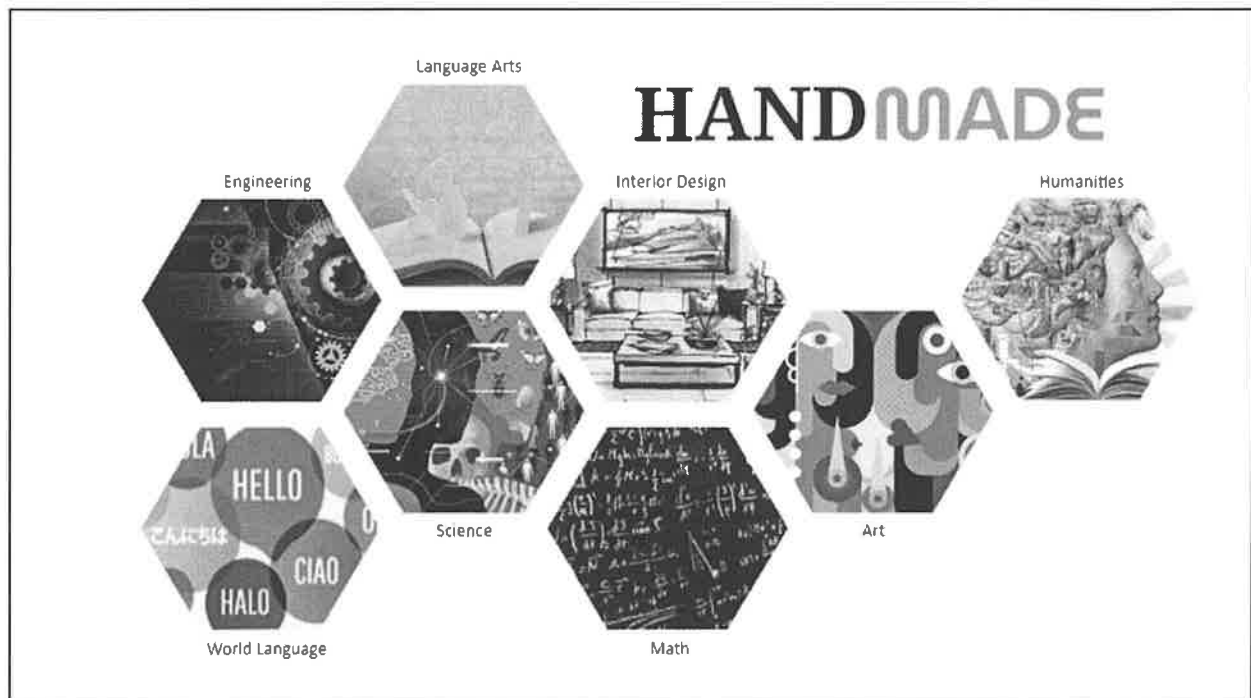


# HANDMADE

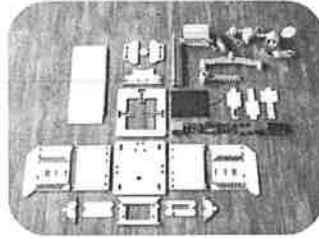
Daniel Hand High School Makerspace

Learning  Fab Lab

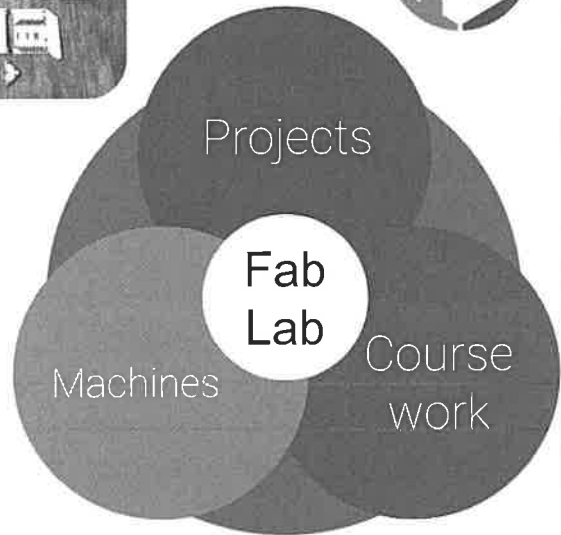
*Supporting Independent Projects and Innovation*



# Vision:



To provide students individual access to digital design and fabrication technologies



## Fabrication Laboratories

**A fab lab is a small-scale workshop, offering personal digital fabrication.**

Popularized by MIT.  
Fits in all educational spaces.

[fabfoundation.org](http://fabfoundation.org)

[mit.edu/about/labs](http://mit.edu/about/labs)

SHU Idea Lab

Innovation Center

Pittsburgh Schools



## Fab Lab + Hand students = Innovation & Creativity

- Fab Labs are a place where disciplines intersect
- An opportunity for independent exploration
- Opportunity to “make” creatively
- Fab Labs provide tools to get started with big ideas
- A place for undirected learning
- Students & staff can level up their technology skill

## Student Access

- Independent Project Classes
  - All students will take I.P. class
- Collaborating with teachers
- Dependent on staffing: access throughout the day & after school

# HAND MADE



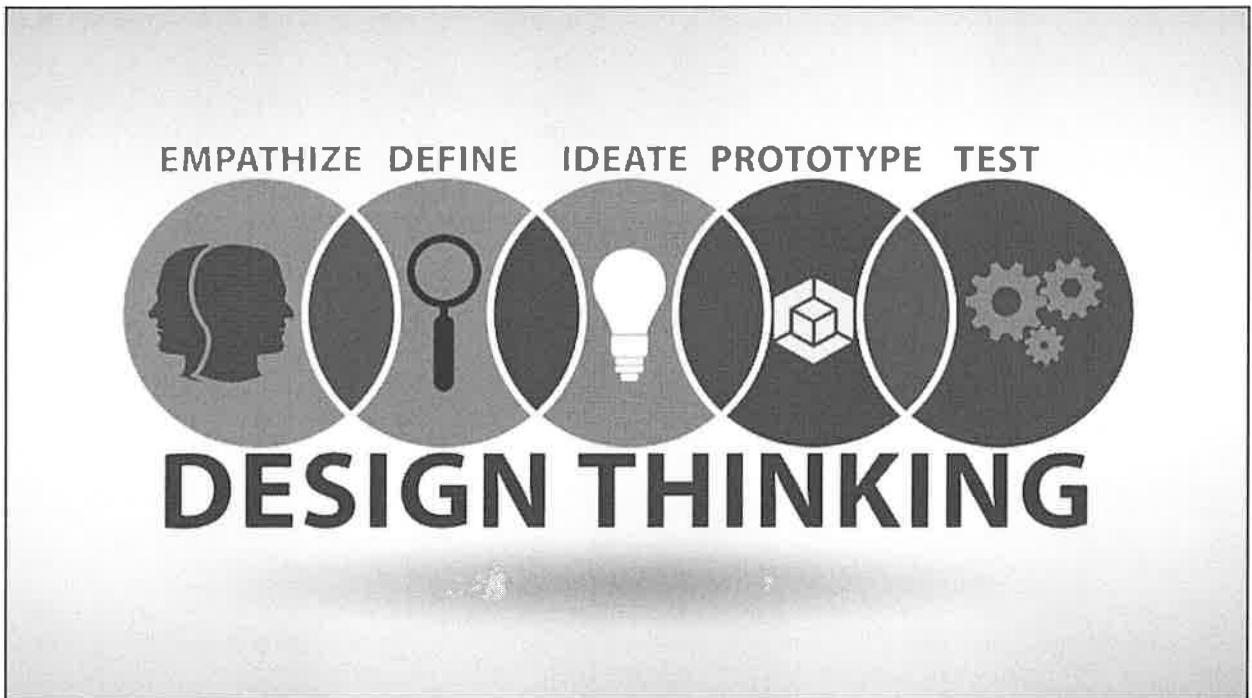


### Corey is a “Fab Lab Guru”

The title is a bit pretentious, but is official. One of a few educators to ever pass ‘Fab Academy’ global course, often for engineers & designers.

Currently works at Fab Foundation education goals by: co-organizing conferences, teaching adult Maker classes, teaching undergraduate & graduate EDU courses, writing/ teaching PD, new electronics course at DHHS and more...

Student-built GPS on a rollercoaster.

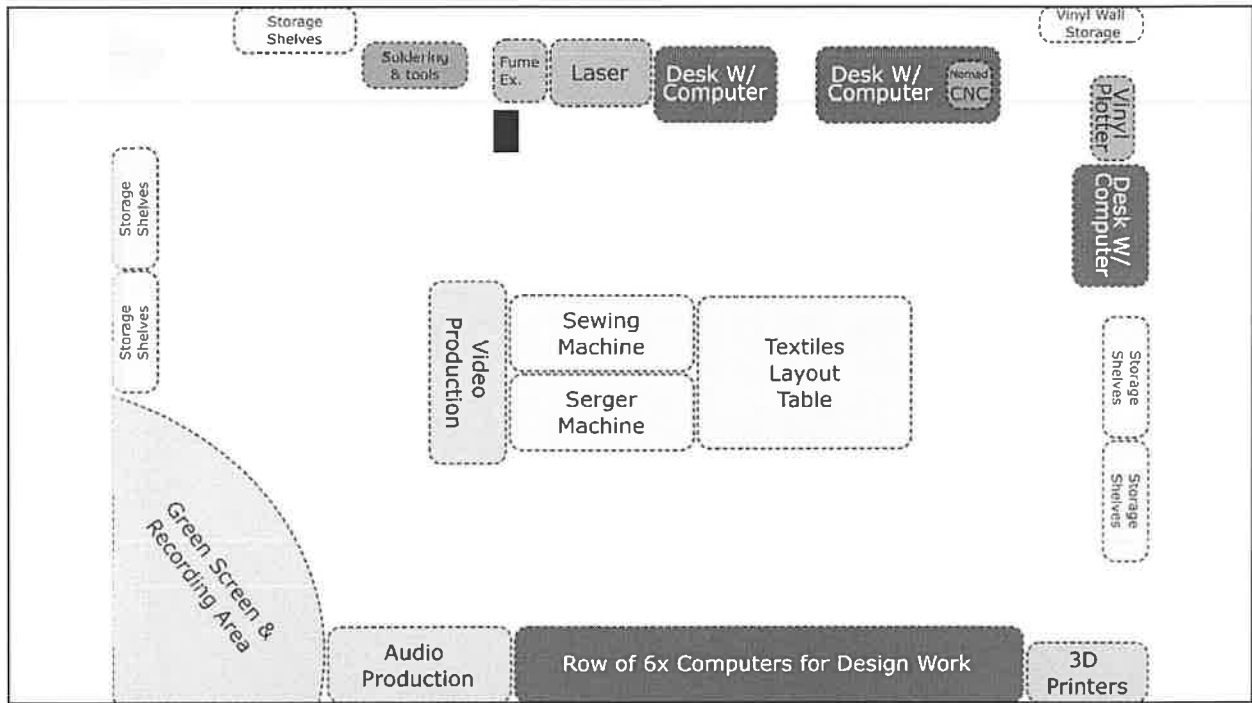


## Fab Lab Stations

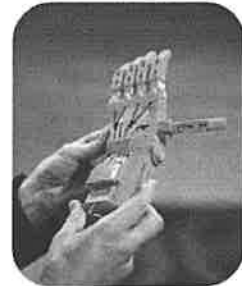
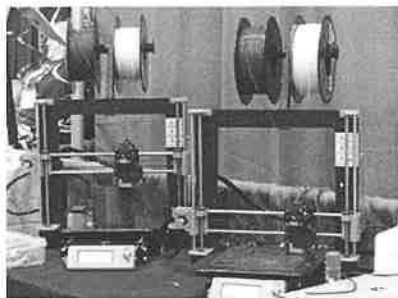
- Music & Podcasting
- Video Production
- Animation
- Sewing machine
- Virtual Reality  
(beginner level)
- Work Area
- Baby CNC milling
- 3D Printers
- Vinyl Cutter
- Laser Cutter
- Design Software
- Electronics Center



Current computer lab in the Library



### 3D Printers

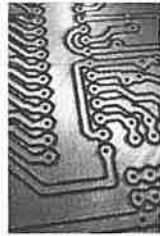


## CNC Milling

### Computer Numerical

**Controlled** machining is how many critical or valuable objects are made - from jet fighters to fine woodworking.

Access to this engineering process helps students better conceptualize their designs.



## Vinyl Cutter/ Pen Plotter

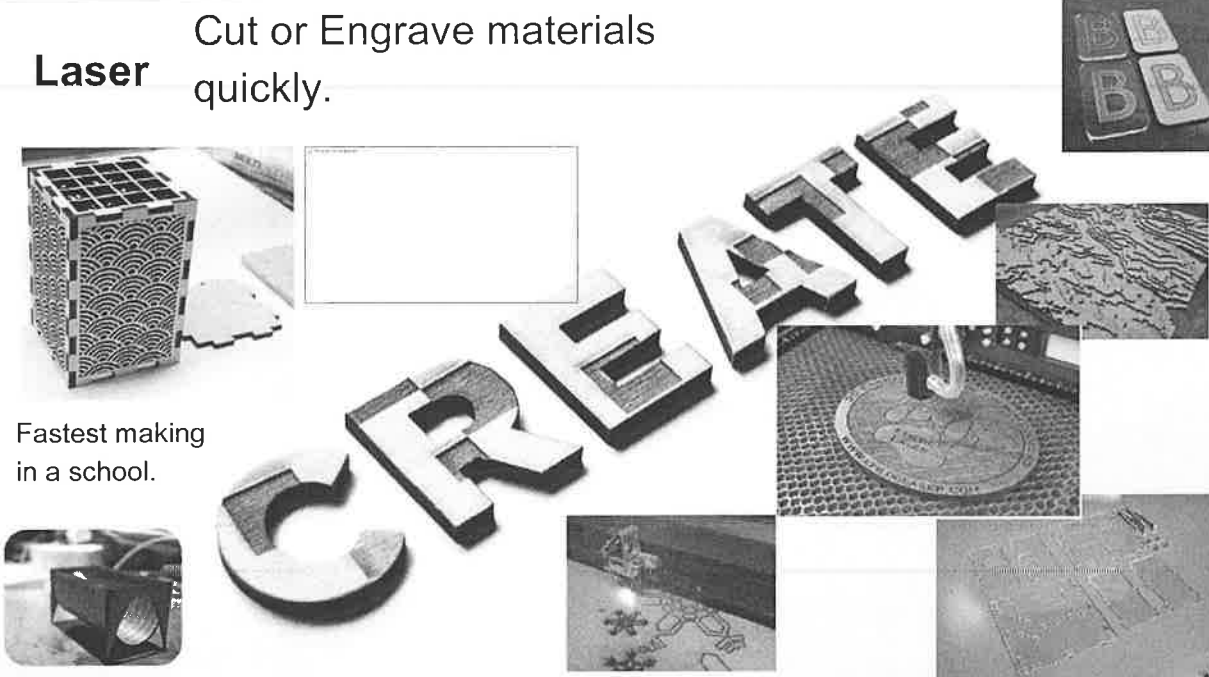
Students can design and cut their own vinyl stickers, just like professional sign shops or marketing departments.



**Laser** Cut or Engrave materials quickly.

Fastest making in a school.

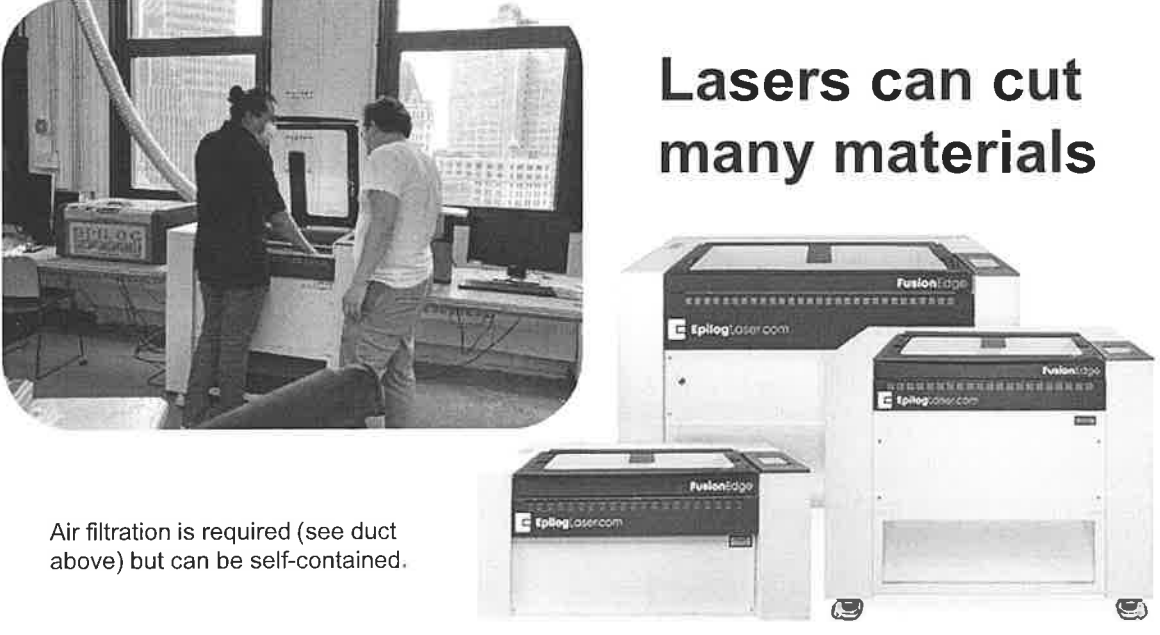
**CREATE**



The collage features several examples of laser work: a decorative metal box with a wavy pattern, a grid of small squares, a large 3D 'CREATE' sign, a small engraved metal piece, a circuit board, a metal plate with a logo, a small engraved metal part, and a metal plate with a grid pattern.

**Lasers can cut many materials**

Air filtration is required (see duct above) but can be self-contained.



The photograph shows two people operating a laser cutter in a classroom setting, with a large duct for air filtration. Below the photo are three different models of Epilog FusionEdge laser cutters.



## Design Software 2D and 3D

Students can make their ideas into plans.

2D and 3D design software is used by designers, engineers, machinists, animators, and more.

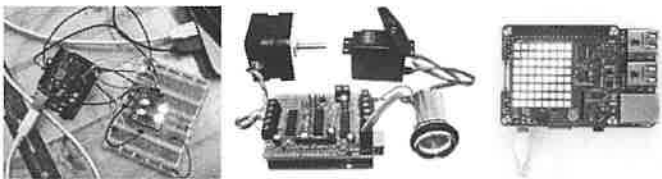
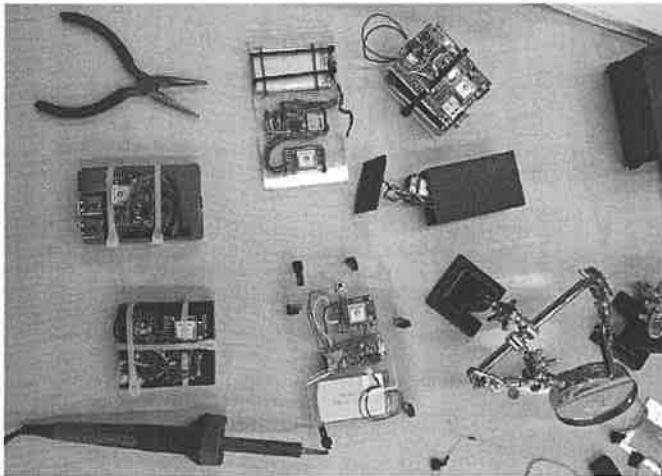
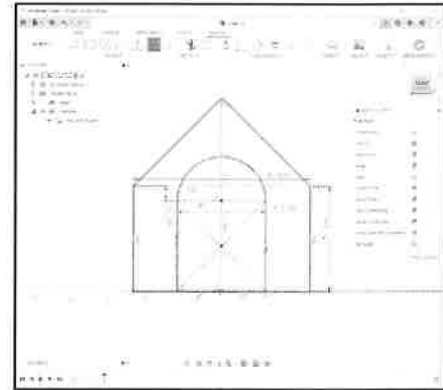
Getting students access to this software early helps them prep for all those possible futures.



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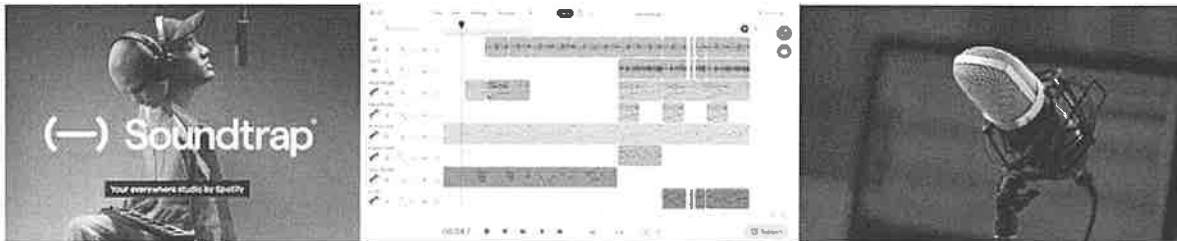
## Electronics Center

Electronics are omnipresent in our lives. Students with access to build or alter them feel more enabled to help build our future technology.

The tools needed are surprisingly affordable and fairly safe to use.

This work supports our science and coding classes in having projects with relevance for students.

## Music Recording & Podcasting

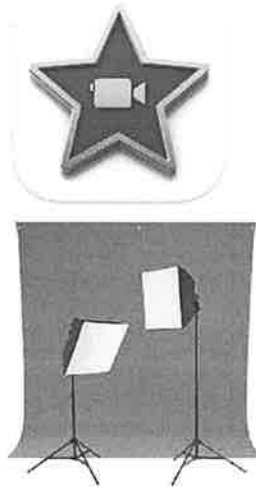


In the last two years, students have been introduced to this technology in some music classes at Polson.

## Video Production

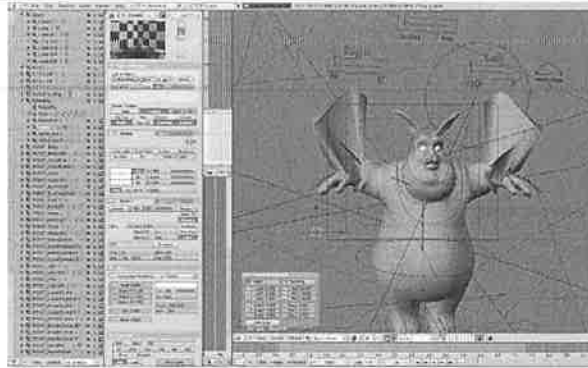


Students have used WeVideo throughout middle school and in video production classes at Hand.

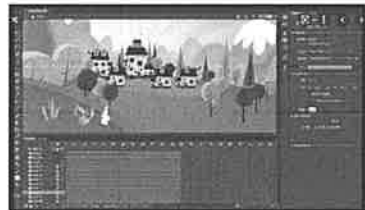


## Animation

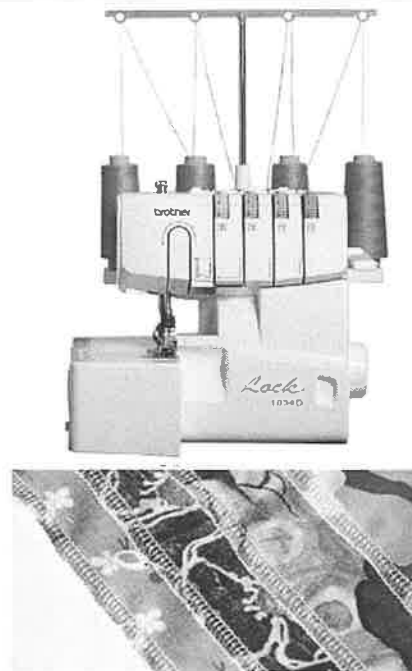
Mac & Animation software



Students are introduced to Adobe Animate in Animation classes at Hand and have no access to it after that class.



## Sewing Machines



## Crafts

Lettering pens

Polymer clay

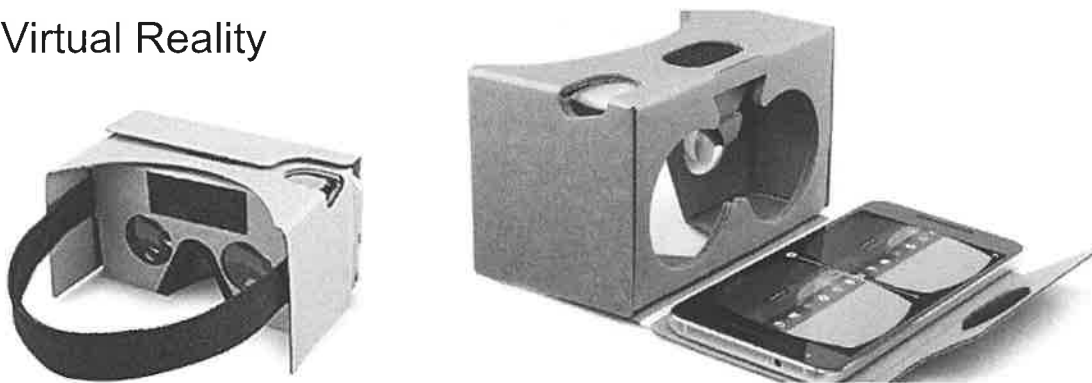
Art supplies

Yarn

Looms



## Virtual Reality



Google Cardboard has the widest variety of educational content at the moment.

Procuring class sets for the building will provide students with virtual field trips.

## Safety & Storage



Ventilation for the Laser cutter estimate includes a self-contained filtering unit.

All major equipment is contained in **safety boxes that hold back curious fingers.**

Machines with safety boxes **auto shut off** if they are opened during operation.

The most exposed/ dangerous equipment is the sewing machine & soldering iron.

Open and closed **storage units** are included to **keep the room clean & safe.**

## Fab Lab Stations Estimates

These numbers are based on specific purchase suggestions.

The vision is to ensure acquisitions are focused on bringing staff & students access to tools they may not otherwise be able to use for generating products in their independent project or other academic work.

For this reason, some items included are not common in-home devices (such as the laser). Other items (such as high-end VR:Oculus) are not included because they are relatively affordable for a family that is interested in such pursuits. The selections were also curated to ensure a low barrier to entry.

CNC	\$3,000
3D Printer	\$3,500
Vinyl cutter	\$2,500
Laser & Ventilation	\$27,500
Design Software	\$400
Electronics	\$2,000
Recording & Podcasting	\$2,000
Video Production	\$250
Animation	\$1,200
Sewing	\$850
Craft	\$300
Virtual Reality	\$400
Storage & Logistics	\$1000
<b>Total</b>	<b>\$44,050</b>

Category	Startup \$44k	Startup Purchases	Maintainer Cost	Yearly estimates \$3.5k
CNC Machine	\$3,000	Carbide3D 'Nomad'	End mills & material	~ \$200
3D Printers	\$3,500	3x Prusa \$1000    Maintenance parts \$200    Filaments \$150    Filament storage \$150    Desktop filter 2x per year \$40	Filament & Parts	~ \$300
Vinyl cutter	\$2,500	Roland GS-24 vinyl cutter & vinyl	Vinyl	~ \$500
Laser Cutter & Ventilation	\$27,500	12"x24" 60W Fusion Edge \$23,500    Ventilation \$3,475    Laser accessories \$2000    3xCores	Air filters, optics & material to cut	~ \$700
Electronics Center	\$2000	Locking Tool Chest \$500    5 Arduino kits \$500    5 Raspberry pi kits \$250    2x Solder stations \$300    electronics supplies \$700	solder + electronics	~ \$300
Audio & Podcasting	\$2,250	Sound mixer \$200, Audio interface \$100, Microphone \$50, headphones \$100, \$110. Microphone \$245    \$45 - Soundproofing \$20, Acoustic panel treatment \$50    Soundtrap host \$4750	Subscription to Soundtrap	~ \$250
Video Production	\$270	Video camera \$150    Tripod \$20 Lighting \$50    SD Cards & adapters \$50	No new upkeep (already have subscription)	
Digital Animation	\$1400	Mac Mini ~\$1000	Adobe Animation	\$400
Design Software	\$400	On Shape (free), Tinkercad (free)	Chief Architect (add seats)	\$400
Sewing Machines	\$850	Sewing machine \$350 & Singer \$300 Singer \$200	Thread & Fabric	\$300
Virtual Reality	\$400	40 & \$10 each Google Cardboards	Annual replacements (hopefully just a few)	
Storage	\$1000	Shelving & Logistics	More as needed	\$250

