

## Monitoring of Board Policy 2020 – Fundamental 5 May 25, 2017

*Fundamental 5: Cultivate and foster thinking and process skills such as analytical and critical thinking, cross-discipline thinking, creativity, innovation, collaboration, communication, problem-solving, and information and technology literacy in curriculum design.*

This represents the fourth annual full governance monitoring of Fundamental 5. This administrative report incorporates the Superintendent’s Interpretation of Fundamental 5, approved by the Board on January 26, 2012, and follows the same themes as described in that interpretation. The report highlights both qualitative and quantitative indicators of measurement, using the Mixed Method Assessment.

### QUANTITATIVE INDICATORS

Numerous quantitative factors from the Educational Effectiveness Survey (EES) were considered to highlight implementation of Fundamental 5. Significant revisions were made and additional questions were added to the survey during the 2012-13 and 2013-14 school years. All the questions used as indicators were a result of these revisions and additions. Additionally, data from specific components of the Danielson rubric are used as indicators to further illustrate progress in Fundamental 5.

Theme	Indicator	SY 12-13	SY 13-14	SY 14-15	SY 15-16	SY 16-17
<b>Theme 1 –</b> Analytical and Critical Thinking, Cross-Discipline Thinking and Problem Solving	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree that “I am good at figuring out the best solution to problems I'm facing.”	*	79	74	80	78
	% secondary students who agree that “I am good at figuring out the best solution to problems I'm facing.”	*	72	74	77	76
	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree that “I solve problems by first breaking them into smaller steps.”	65	73	57	64	57
	% secondary students who agree that “I solve problems by first breaking them into smaller steps.”	58	66	56	58	60
	% 4 <sup>th</sup> and 5 <sup>th</sup> grade student who agree that “When my solution to a problem is not working, I try to figure out what went wrong.”	*	87	81	88	86

	% secondary student who agree that “When my solution to a problem is not working, I try to figure out what went wrong.”	*	79	78	81	80
	% elementary staff who agree that “Students are provided tasks that require higher-level thinking skills.”	63	64	69	73	72
	% secondary staff who agree that “Students are provided tasks that require higher-level thinking skills.”	68	64	66	67	59
	% of teachers rated proficient or distinguished in Danielson’s component 3c “Engaging Student in Learning”	*	89	83	93	NA
<b>Theme 2 – Creativity and Innovation</b>	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree “I try to think of many solutions when I have a problem”	*	82	77	84	87
	% secondary students who agree “I try to think of many solutions when I have a problem”	*	70	73	80	76
	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree that “I am a creative person.”	*	92	89	91	89
	% secondary students who agree that “I am a creative person.”	*	77	78	78	77
	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree that “I can come up with new ideas.”	85	93	86	94	89
	% secondary students who agree that “I can come up with new ideas.”	79	81	84	85	84
	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree that “I like to imagine new ways to do things.”	*	87	81	87	84
	% secondary students who agree that “I like to imagine new ways to do things.”	*	74	74	78	74
	% of teachers rated proficient or distinguished in Danielson’s component 3e “Demonstrating	*	94	94	93	NA

	Flexibility and Responsiveness”					
<b>Theme 3 – Communication and Collaboration</b>	% 4 <sup>th</sup> and 5 <sup>th</sup> grade students who agree that “My teacher(s) help us learn in more ways than just talking in front of class.”	*	88	83	85	80
	% secondary students who agree that “My teacher(s) help us learn in more ways than just talking in front of class.”	*	64	67	66	63
	% of teachers rated proficient or distinguished in Danielson’s component 3b “Communicating Clearly and Accurately”	*	83	74	83	NA

\* Question not asked during the specified timeframe

NA – Not Available - Data not yet available for current school year

These data show that teachers are working on experiences for students that involve critical thinking, problem solving, creativity, innovations, and communication and collaboration, and teachers are supporting their students with engaging learning environments, clear communication, flexibility, and responsiveness. Data are generally high, and mostly consistent year over year.

When investigating the data, the following are cause for specific celebration:

- While not quite as high as last year, elementary students continue to feel that they are a “creative person” (89%) who can “come up with new ideas.” (89%)
- Percent of teachers that were rated proficient or distinguished in Danielson component 3c “Engaging Student in Learning” (93%) and component 3e “Demonstrating Flexibility and Responsiveness” (93%) remain high

Through the year-end reflection process and school improvement plan development, school teams will be investigating and addressing areas of concern including:

- The decrease in secondary staff that agree that “Students are provided tasks that require higher-level thinking skills.” (59%)
- The generally lower level of secondary students who agree that “My teacher(s) help us learn in more ways than just talking in front of class.” (63%)
- The decrease in elementary students who agree that “I solve problems by first breaking them into smaller steps” (57%)

### QUALITATIVE INDICATORS:

The following qualitative data provide windows into Fundamental 5 – Develop 21<sup>st</sup> Century Thinking and Process Skills. Several, but not all, will be highlighted at the May 25, 2017 board meeting.

Theme 1: Analytical and Critical Thinking, Cross-Discipline Thinking and Problem Solving

**NW 21 Acres Learning Center experience:** In conjunction with their science nutrition unit and social studies focus on Washington state regions and resources, fourth grade students visit 21 Acres Learning Center in Woodinville, WA. While there, the students study the agricultural heritage of our region, learn about sustainable agricultural design and technologies, and explore ways to maximize the beneficial aspects of fresh local produce and farm products. Utilizing the center's commercial kitchen, the students learn about the economics of small farms, conservation systems that support them, and how to help their families cook healthier meals. Students plan and prepare a healthy meal, review composting procedures and examine other green principles.

**Elementary Interdisciplinary Unit:** This interdisciplinary unit allows students to claim ownership of concepts in science. Fifth grade teachers at West Mercer and Northwood have students produce videos to teach and learn about the solar system and flight. Each child is responsible for a particular idea (for example: Saturn, gravity, or thrust). The students create a video about that idea utilizing a green screen, complete with learning goals for their fellow classmates. Students vet each other's videos to check for accuracy and then present their final project to their home class and another class.

This interdisciplinary unit encompassed the following:

- technology (the big buy-in for students)
- Reading for information, both print and online
- Research online of current science sources
- Creating a storyboard to sequence the video
- Writing (and public speaking) a script
- Creating a video using green screen technology
- Alternate assessment techniques including the video product and a jointly prepared summative assessment where student author the questions.

**Elementary Rigor in Questioning and Task:** Teachers have continued to apply their learning from 2014-15 about the Hess Rigor Matrix and other tools for questioning. The purpose is to strategically build questions at different levels of complexity and rigor, pushing students' thinking not only about key ideas in a text, but also about an author's craft and the structure of a text, and how they affect meaning. In the professional development for the K-2 and 3-5 *Mondo* English Language Arts (ELA) implementations, teachers engaged in learning and collaboration about ways to use leveled texts with students. Part of that work included considerations of rigor, and how the task surrounding a text can be altered to boost the cognitive demand in one group, while presenting a less demanding task for another group who need more scaffolded support. Teachers have also applied these concepts of rigor to their work in writing, math, and other content area instructional planning.

**WM Robotics and Submersibles Club:** This non-competitive club participates in challenges similar to those used by FLL (First Lego League) but without the cost and time constraints of

FLL competition. Student teams build robots and compete against one another during the annual Science Fair in April. This Science Fair competition serves as both a recruiting tool and as a competition venue. Following the Science Fair the club moves on to create and pilot a submersible. The culminating project for the club is a spring submersible experience at the swimming pool.

**IMS Robotics Club:** Each year in December, FLL (First Lego League) sponsors a world-wide competition with four components based around a global situation. This year's theme was "Animal Allies." Teams built robots designed to solve situations related to the theme. They researched, interviewed, understood, planned, and proposed a solution to a community's possible problem - which they presented to a committee. They collaborated and presented themselves as a cohesive team throughout the competition, and finally, they explained their designs of robotic functions to an engineering committee.

**IMS Computer Programming:** All IMS students have multiple opportunities to utilize critical thinking and problem solving strategies through experiences involving computer programming. All 6<sup>th</sup> grade students are introduced to programming in two of their classes. In their science classes the students experience a series of lessons around basic coding using the LegoEducation Mindstorms curriculum. This unit culminates with an independent project where students model a "real world" working machine. In the 6<sup>th</sup> grade tech block classes, the students learn coding using a variety of platforms: Scratch, Swift Playgrounds, and Code.org. The 6<sup>th</sup> grade students also learn basic computer software skills and explore concepts of digital citizenship and cybersafety in the required trimester TechBlock course.

Students in 7<sup>th</sup> and 8<sup>th</sup> grade explore computer programming in our Video Game Programming elective. For the 2017/18 school year, IMS is once again offering the Introduction to Programming elective which is a trimester long class in which the students learn animation and interactive web page programming using JavaScript, HTML, and CSS. Since the introduction of this class in the fall of 2016, the female enrollment in the programming class has increased. Beginning in the fall of 2018, IMS will offer an intermediate programming class as a follow-up elective to the introductory class or as a direct enrollment class for students who already have basic level coding experience. In this class students will continue to work with the code behind the web pages they see every day. In addition to the languages from the introductory class, students will add PHP to their repertoire in the intermediate class. IMS has participated in Code.org's Day of Code for the last several years.

**IMS Math Strategies:** IMS Math teachers cultivate and foster critical thinking connected to problem solving through many activities that challenge students to build upon their math foundation and apply their knowledge. A simple example of this is through a partner activity where students 'climb the ladder' starting at a basic concept (like definitions of parallelograms), then when they finish that 'ladder' they move on to skill that asks them to apply the definition. This could look like graphing 4 points to form a parallelogram in the coordinate plane then identifying the specific quadrilateral. Students then move to application problems that can be

open-ended to encourage students to look for more than just the 'right answer'. Teachers also use movement activities (scavenger hunts, student-created groups, math walks, add 'em up, and relay races) as well as partner activities ('Seis' dice game, partner quizizz, physical manipulatives, and 'speed dating') and technology (quizizz, kahoot, quizlet live, and desmos activity builder). These activities that address different learning styles, had a strong relationship to student achievement in math classrooms.

**HS AP Spanish Current Issues Project:** In Kelsey Cochran's AP Spanish Language and Culture class, students read a news article from a Spanish-speaking news source (for example "Obesity rate in Mexico"). Students used Canva.com to create an infographic, combining 5-6 different visual representations, the most important data presented in the article. Students had to decide what type of visual representation would be most appropriate for each data set (table, growth chart, etc.). The student-generated infographics were then used in future lessons as the themes arose. The activity was designed to help students meet the core objectives of the course: to be able to understand, interpret, and analyze information across the six core AP themes presented in graphs and tables. By having students create an infographic themselves, they deepened their thinking about the graphics they read in class while enhancing their cultural knowledge of the Spanish-speaking world. This assignment addressed the following goals: moving beyond textual comprehension to work to interpret, analyze, synthesize, organize and then finally produce and assemble data into a final product that would clearly, creatively and attractively communicate information to others; learning specific cultural information about Spanish-speaking populations (the content they read in the original news articles); drawing cross-disciplinary connections (the creation of an infographic integrates skills from math, science, language, technology, social studies and art); expressing choice and creativity (students selected what information to include and how to best present it visually); improving written and visual communication (students also wrote comprehension, interpretation and extension questions about their infographics for their peers); developing academic vocabulary related to data (terms like "rate," "figure," "table," etc.); and increasing technology literacy.

**HS Honors Precalculus Matrices Unit:** In the Honors Precalculus Matrices Unit taught by Lynn Adsit and Kate Yoder, students used TI technology to look at the use of matrices in unusual and complex situations in a variety of disciplines. Once the basic operations with matrices were presented, students explored how matrices are used to model and change the gradation of color in photography (art), how matrix operations are used to model the cost and production of items for a business (economics), and how steady state models are used to determine long run distribution of an infectious disease (biology). They looked at how to use matrices to quantify ranking systems (voting) and sought a ranking system that was fair and representative (government). Students also set up weighted networks used to create probability models, using a Markov chain, to predict weather and population changes (science). They used a system of equations and matrix row operations to model traffic patterns to search for optimum pathways (engineering). After learning how the enigma machine in World War II created encrypted messages for Germany, they created a cipher matrix to encrypt a message and then deciphered information sent by another student (social studies).

## Theme 2: Creativity and Innovation

**K-12 Destination Imagination:** This extracurricular program takes place after school for interested students at elementary, middle, and high school levels. The purpose of the program is to "inspire and equip students to become the next generation of innovators and leaders." The program presents students with a challenge to tackle over several weeks. With support from coaches, students learn to imagine and innovate solutions to their challenges. They work collaboratively with their teams to create, develop, and practice a solution to the challenge. Following that they compete in a local tournament, and, if successful, advance through tournament levels to the Global Finals. This year, 21 teams took part in the Regional Tournament. Nine of these teams moved on to the state competition. Three of the teams (one at each level; elementary, middle level, high school) will move on to the Global Finals.

**Elementary Museum of Flight:** Fifth graders travel to the Museum of Flight to participate in a simulation of space travel to Mars. Students must problem-solve their way to the red planet by accomplishing specific missions. This activity includes prior classroom preparation in which students are divided into teams focused on Communications, Data, Navigation, Medical, Probe, and Life Support. Incorporating problem solving, decision making, communication, writing, math, and reading comprehension skills, students create a mission plan that is tested for effectiveness during the simulation.

**7<sup>th</sup> Grade Legacy Project:** 7<sup>th</sup> grade students were challenged to develop their own passions by finding a way to impact a community and/or culture to which they are connected through problem solving into their passion with the potential of beginning their life's legacy. The topics explored this year varied widely: redesigning racing swim suits and eliminating chlorine off-gassing in competitive pools, innovative cooling systems for technology (interviewed NASA), ethnomusicology as a new curriculum piece for richer history curriculums (interviewed UW ethnomusicologist), STA train issues for Mercer Island (interviewed local expert on transportation planning), creating sports facilities for a friend's village in China, and an interview with a mayor for a student who one day wants to be President. Students were expected to become deeply familiar with the details of the issue so that solutions were founded on accurate, detailed understanding. For additional understanding, students conducted interviews with an expert on the chosen topic. When it came time to develop a solution, students were challenged to synthesize their own ideas with other solutions proposed by published writers and thinkers building a larger plausible paradigm for their outside-the-box solutions. This project provided students with opportunity to apply skills developed side-by-side in Language Arts and Social Studies (and for many, skills from Science and Math as well). Students were challenged to consider their own roles thus defining their legacy. Actual products ranged from published websites, prototypes, visions that were long term outcomes, community campaigns, and initiatives to government leaders, innovative designs or big ideas for prototype development. If possible, students are encourage to take next steps towards implementation of their visions.

**HS AP Biology Artificial Neural Network:** A major theme in the AP Biology curriculum is the biological representation of information, while NGSS emphasizes understanding how

technology influences society. This project combines both objectives by challenging students to construct a simple Artificial Neural Network (ANN) using Arduino micro-controllers. Artificial Neural Networks, first developed in the 1940's and 50's, were designed to mimic the way that biological neural networks encode information in the firing patterns of nerve cells. Students in Larry Bencivengo's AP Biology class begin by learning how to build simple electrical circuits and to control them by programming Arduinos, which are essentially mini-computers. They then use their knowledge of neuroscience to turn each Arduino into a model nerve cell (or neuron) that can receive inputs from sensors or other Arduinos, process that information, then send outputs to other model neurons. This culminates in constructing a simple ANN that is able to "count" inputs. While this simple ANN's abilities may seem to fall far short of artificial "intelligence", it operates on exactly the same principles as commercial and research ANNs which are currently finding applications in machine vision, search engines, self-driving cars, and IBM's Watson cloud service. In addition to reinforcing their understanding of how brains are able to store and process information, this project seeks to challenge students' ability to innovate, design solutions to problems, and trouble-shoot the inevitable obstacles that arise. Thus, they must exercise their creativity while learning about a cutting-edge field of technology that is already having a profound impact on modern life.

**HS Emotion Photography Diptych:** Laura Totten created an Emotion Photography Diptych project to challenge students to think conceptually in terms of visual expression. She felt students were experts at analyzing and providing literal interpretations, so she challenged them to create a diptych (a pair of associated images presented as one artwork) about an emotion. One image had to include a person (portrait, or part of a person like their hand) and the complimenting image had to be an object that fit the essence of the emotion. Students had to make artistic decisions to place the image in a visually balanced way, and to enhance both images so that they worked as one finished piece of artwork. Students generated a list of emotions as a class, and talked about specific emotions beyond happy, sad, and afraid. Students wrote down an emotion on a piece of paper, and then randomly drew their emotion. This was an added challenge because they were assigned an emotion by a peer, and many students felt it would be too difficult to create their diptych. While many struggled with understanding this conceptually, they demonstrated tenacity and the students and the teacher were proud of the finished products.

### Theme 3: Communication and Collaboration

**Math Talk in K-5 Mathematics Instruction:** Math Talk is a research-based structure used in every classroom to support students in developing their ability to share their strategies for problem solving, describe and justify their thinking, and engage in student-to-student discourse about mathematics. In Math Talk, teachers provide a routine in which students solve mathematics problems, individually, in partners, or in small groups, and share their solutions and solution strategies with the class. Other students listen, ask clarifying questions, and provide feedback, with scaffolding and support from the teacher as needed. Teachers can capitalize on errors and creative solution paths to address misconceptions and enhance

everyone's learning. We intend to provide on-going coaching and supports for our teachers to help them increase the strategic use of this structure to support better mathematical discourse.

**Elementary Writer's Workshop:** The instructional strategies and practices in Writer's Workshop develop students' oral and written communication and collaboration skills. The architecture of the daily Writer's Workshop Mini-lesson always includes a section called "Active Engagement." In this portion of the lesson, students are often encouraged to discuss with a partner their ideas about their writing or the lesson target of the day. Often, students work collaboratively with writing partners to help one another develop a text or to analyze and revise a collaborative text. Students develop their oral and written communication skills while thinking critically about the craft and structure of writing.

**Elementary Mondo's Bookshop Common Core Curriculum:** The instructional practices and methodologies that are contained within *Mondo's Bookshop Common Core* have aided in students becoming better collaborators and communicators both with other students and teachers. The whole group reading sessions include Read-Alouds and Shared Reading. Read-Alouds are intended to allow students to develop and practice their listening skills, as they listen to a text, answer questions, and discuss meaning. Shared Reading allows students to have the text visible, but still encourages thoughtful discourse that involves deep analytical thinking through text-dependent questions. Students are asked to turn and talk with their peers as well as share with the whole class their thinking. The oral language component of *Mondo's Bookshop Common Core* assesses and fosters oral language in students. Oral language is an important aspect of learning to read, as it impacts both reading comprehension and writing composition. Throughout the entirety of the program, one can see connections to speaking and listening that the Common Core demands. Ultimately, this encourages the use of strong academic language whenever students are discussing texts.

**6<sup>th</sup>-12<sup>th</sup> Schoology:** Islander is completing the sixth year (since 2011) of all classes utilizing Schoology as an interface between the classroom and home, an online extension of their classroom. Mercer Island High School is finishing their second year of full school implementation, extending the use of the platform at the secondary level through grade 12. Schoology is similar to Facebook in its layout, usability, and two-way communication and collaboration opportunities. It is different than Facebook in that it is a closed community. Educators are thrilled with the way students use Schoology for communication and collaboration. When a student has a question they can post it to a classroom wall and both the students and the teacher can respond and dialogue about that question. Parents/guardians of students in grades 6-12 were emailed parent Schoology accounts for access to their child's activity. Schoology allows teachers to schedule the assignments for the classes in one place for students and parent to see upcoming tasks, assignments, and assessments. Teachers can also upload documents, use it for on-line discussions and assessments. Our teachers have found incredible ways to connect Schoology with the 1:1 iPad implementation. The Schoology app on the iPads allow students to submit work from a variety of productivity apps (OneDrive, Google Drive, Notability, iMovie, etc.). Some teachers are also integrating the Learning Tools Interoperability (LTI) apps such as Nearpod, PlayPosit, and Voicethread into their Schoology

pages, which allows students to login to these third-party tools from within the Schoology site. Schoology is a great tool for online learning, communication, collaboration, and increased student access to curriculum and supplemental content in grades 6-12.

**HS UWHS Spanish 201 Shark Tank:** Chapter 18 of the University of Washington in the High School Spanish 201 course focuses on economics and finance. This is one of the sub topics used on the AP test that students need to be able to understand and talk about. Students both need to be able to understand and use vocabulary related to finance as well as be able to talk about cause and effect and to persuade using certain grammar structures. The resulting performance based assessment is one where students apply vocabulary and grammar to a new situation with a real audience (their potential investor or an entrepreneur) and practice verbal communication skills, the ability to think critically and determine important information. In order to successfully complete the task students must use the vocabulary with accuracy, communicate, persuade, ask and answer questions that deal with cause, effect and specific details related to business, goods and services.

In Peggy Aguilar's UW Spanish 201 course, to demonstrate this performance task, each student was assigned the role of either an investor or an entrepreneur. Each entrepreneur was given the name of a company, their homework was to develop an "elevator pitch" (much like is seen on Shark Tank) that would sell the company to potential investors. Each investor was given three companies, their homework was to write specific questions for each of the three entrepreneurs. Both the entrepreneurs and the investors had to integrate the vocabulary and grammar structures from the chapter either in their pitch or in their questions. During class each entrepreneur gave his/her pitch three times: the goal was to improve the pitch each time and address questions in subsequent pitches that investors asked. The investors heard three different pitches and had to select with which entrepreneur they would choose to work and why based on the pitch and the answers given to their questions. The second day of the activity the roles were reversed and students who played the investors became entrepreneurs (with a different list of companies used). Ms. Aguilar recorded these engaging and collaborative lessons to use on the Teaching Channel in her work as an Instructional Coach.

**HS Precalculus Murder Mystery:** Students in Lee Jahncke's precalculus class collaboratively engage to solve a fictitious murder mystery: The Case of the Sideroad Slasher. The assignment is designed to have students engage in a mathematical murder mystery investigation during their unit studying exponential and logarithmic functions. To solve the mystery, students work together as a group to carefully read the initial investigative report prepared by the detective and determine the important and extraneous information. The project requires students to try to determine the time of death for the most recent murder victim and use that information to determine the only possible murderer. The math students use requires them to use Newton's Law of Cooling to create a model for the murder victim's body temperature over time and to compare that to the log-in data included in the initial investigative report. To finish, students create a convincing case to provide to the prosecutor to make sure they've identified the correct killer. This activity, created by the MIHS math department, appeals to student interests and provides them with examples of how math is used everyday.

#### Theme 4: Information and Technology Literacy in Curriculum Design

**K-12 Digital Citizenship:** In acknowledging both best practice and Federal mandates the Mercer Island School District provides direct instruction annually for all students K-12 on Digital Citizenship. At the elementary level, topics range from safe websites and simple passwords for young students to protection of personal information, online safety and an introduction to cyber-bullying for older students. These lessons are extended in middle school with overarching themes related to online safety, cyberbullying, intellectual property, and leaving a positive digital footprint. Purposeful lessons were integrated in 6th grade excore, 6th grade tech class, 6th grade social studies, 7th grade language arts, and 8th grade health. In April, Stephanie Thomas, who works with the FBI on child exploitation laws and cyber crimes against children, spoke to all 7th and 8th graders regarding online safety, bullying & harassment online, and consequences for such actions. We also spent a month in the spring pushing out daily do/don't digital citizenship reminders to all middle school students. In 9<sup>th</sup> through 12<sup>th</sup> grades these concepts grow in complexity and depth covering social media, etiquette, digital footprint and online presence as well as advanced search techniques and critical thinking for online research. In addition to succinct direct instruction these topics are often imbedded in classroom discussion integrated into the curriculum and student projects.

**K-3 iPads:** Students in our K-2 classrooms have access to a set of eight (8) iPads in each room. This allows for teachers to conduct a hands-on small group lesson or rotate students through independent stations by table groups or ability levels. Teachers also have the option to borrow from a neighboring class to acquire 16 iPads for a 1:2 model or borrow from all classes in that grade level for a 1:1 model when appropriate. All available apps in the separate K, 1 and 2 app catalogs have been aligned to the Common Core and are screened for content and age appropriateness.

**4<sup>th</sup> and 5<sup>th</sup> Grade 1-1 iPads:** All Mercer Island 4<sup>th</sup> and 5<sup>th</sup> grade classrooms participate in a 1:1 iPad program. With a dedicated iPad for each student, teachers are able to engage their classes on a new level. Particularly powerful was the ability for students to have instant timely access to online research as opposed to previous experience with shared laptops. The most commonly installed apps are Word, Powerpoint, Garageband, Dreambox, myOn, Docs, and FrontRow. With Word, Docs, and Powerpoint, students have access to OneDrive and Google Drive which allows them to continue working on a project at home as well as save their work so they could access the changes on their school iPad. Some new ways that classrooms in the elementary schools are also using iPads in innovative ways: students are using stop motion video to capture plant growth, iMovie for book summaries, access and extension tools for MONDO with Notability for shared passages, digital access to guided readers, a wide variety of independent novels with myON, and several word study aligned apps.

**6<sup>th</sup> – 12<sup>th</sup> Grade 1-1 iPad Program:** With a focus on personalized learning from the MISD 20/20 vision, the 1:1 iPad initiative continues at the secondary level. All students in grades 6-12 are provided an iPad they can use during school and at home, to enhance their learning. For

students, the iPad not only provides them an organizational tool, but it also opens up new opportunities for students to personalize their own learning and explore topics of their own interest outside of class time. Having the common, versatile, digital tool of the iPad, has allowed teachers to be more flexible in allowing students to choose the format to demonstrate their understanding. Teachers in 6<sup>th</sup> – 12<sup>th</sup> grade benefit from the accessibility of information and the formative data they gathered from the students to help them better respond to the needs of their students.