

Mercer Island School District
Monitoring Indicators
Board Policy 1800 OE-1, Fundamental 4

Fundamental 4:

“Engage students in analytical and critical thinking in order to identify and address global concerns.”

Quantitative Data

EES Survey Results:

Theme	Indicator	SY 15-16	SY 16-17	SY 17-18	SY 18-19	SY 19-20
Theme: Critical & Analytical Thinking	% 4th-5th grade students who agree that “I am good at figuring out the best solution to problems I'm facing.”	80	78	83	83	81
	% secondary students who agree that “I am good at figuring out the best solution to problems I'm facing.”	77	76	74	75	78
	% 4th-5th grade students who agree that “I solve problems by first breaking them into smaller steps.”	64	57	64	65	63
	% secondary students who agree that “I solve problems by first breaking them into smaller steps.”	58	60	56	61	67
	% 4th-5th grade students who agree that “When my solution to a problem is not working, I try to figure out what went wrong.”	88	86	88	86	88
	% secondary student who agree that “When my solution to a problem is not working, I try to figure out what went wrong.”	81	80	80	82	87

	% elementary staff who agree that “Students are provided tasks that require higher-level thinking skills.”	73	72	91	92	91
	% secondary staff who agree that “Students are provided tasks that require higher-level thinking skills.”	67	59	86	87	84
	% of teachers rated proficient or distinguished in Danielson’s component 3c “Engaging Students in Learning”	93	93	88	95	N/A
Theme 2 – Creative & Cross Discipline Thinking	% 4th-5th grade students who agree “I try to think of many solutions when I have a problem”	84	87	86	80	84
	% secondary students who agree “I try to think of many solutions when I have a problem”	80	76	71	74	78
	% 4th-5th grade students who agree that “I am a creative person.”	91	89	91	91	88
	% secondary students who agree that “I am a creative person.”	78	77	77	79	81
	% 4th-5th grade students who agree that “I can come up with new ideas.”	94	89	90	90	91
	% secondary students who agree that “I can come up with new ideas.”	85	84	84	83	87
	% 4th-5th grade students who agree that “I like to imagine new ways to do things.”	87	84	88	89	82

	% secondary students who agree that “I like to imagine new ways to do things.”	78	74	75	75	78
	% of teachers rated proficient or distinguished in Danielson’s component 3e “Demonstrating Flexibility and Responsiveness”	93	93	93	93	N/A
Global Citizenship	% 4th-5th grade students who agree that “My teacher(s) help us learn in more ways than just talking in front of class.”	85	80	89	88	91
	% secondary students who agree that “My teacher(s) help us learn in more ways than just talking in front of class.”	66	63	68	70	75
	% 4th-5th grade students who agree “Students are involved in decisions about things that affect them in this school.”	N/R	N/R	57	57	59
	% of secondary students who agree “Students are involved in decisions about things that affect them in this school.”	N/R	N/R	38	44	52
	% 4th-5th grade students who agree “In class we often work with other students to solve a problem.”	N/R	N/R	64	69	70
	% of secondary students who agree “In class we often work with other students to solve a problem.”	N/R	N/R	63	66	74
	I am comfortable interacting with people from a different racial or ethnic background.	N/R	N/R	94	94	95

	I respect other points of view, even when I disagree.	N/R	N/R	85	85	89
	This school is doing a good job of preparing me to succeed in my life.	N/R	N/R	66	67	69

Mercer Island High School (MIHS) Graduate Survey (Discontinued)

In 2016, the District began surveying graduating seniors and attempted to reach out to previous graduates. The goal was to gather perceptual information about the student experience and application to their lives beyond MIHS. The survey yielded very little information from former students and data collected from the current seniors offered very little in terms of actionable changes. The financial and human resource costs far outpaced the return.

Civic-Minded Graduate (CMG) Survey (Initiated)

The Superintendent proposed, and the Board accepted on April 22, 2021, the administration of a new survey which is supported by a body of research and is aligned with Fundamental 4, as well as Fundamentals 3 and 5. The CMG Scale survey is currently used in higher education and given to graduating students after completing a course of study (earning a diploma). The District has decided to use this survey with its graduating high school seniors. Depending on the year, this survey will be given in lieu of the EES, or in addition to the EES.

Global Citizenship Theme: CMG Scale Survey Results:

Indicator	SY: 20-21 Average Score (scale 1-6; disagree-agree) Sample Size- 117 Students			SY:21-22 Average Score (scale 1-6; disagree-agree)		
	1-2	3-4	5-6	1-2	3-4	5-6
	1. My high school experiences have helped me know a lot about opportunities to become involved in the community.	4.3%	53.9%	41.9%		
2. My experiences as a high school student have enabled me to plan or help implement an initiative that improves the community.	7.8%	58.6%	33.6%			

3. My high school education has helped me appreciate how my community is enriched by having some cultural or ethnic diversity.	21.5%	45.7%	32.8%			
4. My high school education has given me the professional knowledge and skills that I need to help address community issues.	7.7%	56.4%	35.9%			
5. Because of my high school experiences, I plan to stay current with the local and national news after I graduate.	6.9%	50.5%	42.8%			
6. When discussing controversial social issues in high school, I have often been able to persuade others to agree with my point of view.	18.4%	54.4%	27.2%			
7. Through my experiences in high school, I am very familiar with clubs and organizations that encourage and support community involvement for high school students.	8.5%	39.3%	52.1%			
8. My high school education has prepared me to listen to others and understand their perspective on controversial issues.	4.4%	38.6%	57.0%			
9. My high school education has increased my confidence that I can contribute to improving life in my community.	5.1%	45.7%	49.1%			
10. After being a high school student, I feel confident that I will be able to apply what I have learned in my classes to solve real world problems in	4.3%	53.0%	42.8%			

society.						
11. As a result of my high school experiences, I want to dedicate my career to improving society.	17.2%	47.4%	35.4%			
12. My high school experiences helped me to realize that I like to be involved in addressing community issues.	14.1%	54.3%	31.6%			
13. My high school education has motivated me to stay up to date on the current political issues in the community.	6.0%	48.3%	45.7%			
14. Based on my high school experiences, I would say that the main purpose of work is to improve society through my career.	15.5%	52.6%	31.9%			
15. Based on my experiences in high school, I would say that most other students know less about community organizations and volunteer opportunities than I do.	29.6%	46.1%	24.3%			
16. My experiences as a high school student have helped make me a good listener, even when peoples' opinions are different from mine.	5.2%	46.1%	48.7%			
17. My experiences in high school have increased my motivation to participate in advocacy or political action groups after I graduate.	14.9%	50.9%	34.2%			
18. My high school experiences have helped me develop my ability to respond to others with empathy,	4.3%	43.4%	52.2%			

regardless of their backgrounds.						
19. Because of my high school experiences, I intend to be involved in volunteer service after I graduate.	11.3%	53.9%	34.7%			
20. Because of the experiences I have had in my high school education, I feel a deep conviction in my career goals to achieve purposes that are beyond my own self-interest.	12.2%	47.8%	40.0%			
21. My experiences as a student have prepared me to write a letter to the newspaper or community leaders about a community issue.	32.8%	42.2%	25.0%			
22. My high school education has made me aware of a number of community issues that need to be addressed.	18.1%	43.9%	37.9%			
23. My high school education has convinced me that social problems are not too complex for me to help solve.	13.0%	59.1%	27.8%			
24. As a result of my experiences in high school, other students who know me well would describe me as a person who can discuss controversial issues with civility and respect.	9.5%	41.7%	48.7%			
25. I believe that I have a responsibility to use the knowledge that I have gained through my high school education to serve others.	7.8%	45.3%	47.0%			
26. My experiences in high school have helped me to	13.9%	47.0%	39.1%			

develop my sense of who I am, which now includes a sincere desire to be of service to others.						
27. Because of my high school experience, I believe that having an impact on community problems is within my reach.	6.9%	56.0%	37.1%			
28. My experiences as a high school student have helped me realize that when members of my group disagree on how to solve a problem, I like to try to build consensus.	5.2%	50.5%	44.3%			
29. My high school experiences have helped me to realize that I prefer to work in a setting in which I interact with people who are different from me.	10.6%	46.5%	43.0%			
30. My experiences in high school have helped me realize that it is important for me to vote and be politically involved.	6.8%	25.9%	67.3%			

CMG Scale Narrative Reflection:

Having administered the CMG Scale for the first time, we do not have previous data to compare.

Looking at the 2021 administration results, several questions and resulting data stand out.

- Nearly 50% of students responded with a five (5) or six (6) to the question, “I believe that I have a responsibility to use the knowledge that I have gained through my high school education to serve others.”
- Just over 50% of students responded neutral to the question, “Based on my high school experiences, I would say that the main purpose of work is to improve society through my career.”
- Next to political action (question 30), students responded most favorably to the question, “My high school education has prepared me to listen to others and understand their perspective on controversial issues.”

Next year, staff will consider two adjustments to the process. First, the quantitative data would

possibly be enhanced with a qualitative option within the survey. Second, the survey was not administered until the end of May, which was too close to graduation.

Qualitative and Quantitative Course Monitoring

The District will monitor several exemplar high school courses of Fundamental 4 on a three-year rotating basis. Each course will undergo a qualitative and quantitative analysis to examine equitable access and student experience.

Selected Courses to Review Qualitatively

- Year 1 (beginning 2021)
 - Advanced Algebra with Financial Applications- Global Citizenship
 - Horticulture- Cross Discipline Thinking
 - Civics- Global Citizenship
- Year 2 (beginning 2022)
 - Biotechnology, Research and Ethics- Global Citizenship and Cross Discipline Thinking
 - International Entrepreneurship- Cross Discipline Thinking and Global Citizenship
 - Data Analytics- Cross Discipline Thinking
- Year 3 (beginning 2023)
 - Materials Science- Cross Discipline Thinking
 - Environmental Science-Cross Discipline Thinking
 - Computer Programming and Game Design- Cross Discipline Thinking

Quantitative Review- Equitable Access

	Number of Students Enrolled	Student Gender Demographics	Student Race and Ethnicity Demographics	Grade Level Representation
Civics	137	F-50 M-87	Asian-27 Two or More Races or a Race Ethnicity that is not White or Asian- 13 White-97	12th - 137
Horticulture	31	F-14 M-17	Two or More Races or a Race Ethnicity that is not White- 10 White-21	9th - 15 10th - 5 11th - 8 12th - 3
Advanced	15	F-10	Two or More Races or a Race	12th - 15

Algebra with Financial Applications		M-5	Ethnicity that is not White- 5 White-10	
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Qualitative Data - 2020-21 Review

Civics

Course Description: In this course, students prepare to be an active, informed, 21st century citizen. Students study the structure and inner workings of your government, how society balances individual liberties with the common good, and how political parties and interest groups advocate for policies. These studies are tied to current constitutional issues, such as free speech in schools, digital privacy, and gun control. Students research and debate public policy on issues such as immigration and the war on terrorism. Through engaging simulation and role-play, the class explores voting behavior, how the media influences voters, and the role of money in elections. The course culminates in an active citizenship project that requires your involvement with a local, state, or national political issue. For example, you may work on a campaign, propose a ballot initiative, conduct polling, lobby, or propose policy changes to the city council or school board.

US Immigration Policy Debate:

Guiding Questions:

- What should the United States immigration policy be?
- What drives people from other countries to move here?

Student groups develop a policy and strategy that they believe the U.S. should follow to guide immigration. Groups present and defend their policy during a class debate as if they were presenting before the U.S. subcommittee on Immigration and Border Security to persuade them that the U.S. should adopt their group's option. To prepare for this debate, students review our current policy, different viewpoints on immigration, and review other foreign policies. They must address how their policy affects people in the U.S. and people in other countries. In addition, they also indicate how their option might be challenged or resisted.

[Link to assignment details](#)

International Trade in a Globalized World: Evaluating the Impact of Economic Change

Guiding Questions:

- What should the United States trade policy be?
- How does United States trade policy affect other countries and their citizens?

Using fictional profiles of individuals with different jobs affected by trade (such as farmers and factory workers) and from different countries (US, Brazil, China, India, Pakistan, South Africa, southern Australia).

[Link to fictional characters](#)

Students discuss the positive and negative impacts of trade on a variety of countries through the lens of individuals in those countries. In addition, students assess whether these countries have benefitted or not from trade and globalization. Students examine and seek to understand why countries trade. Students examine and seek to understand the basis on which countries are able to benefit from trade. Students examine and seek to understand the impact of US trade policy on people within the United States and in other countries.

Climate Change Global Agreement:

Guiding Questions:

- What countries are most responsible for climate change?
- What countries are most vulnerable to climate change?
- What is the United States responsibility for helping other countries?
- Should a carbon-tax be implemented?

Students role-play different stakeholders that represent different regions, countries, companies and non-profit organizations to act as a panel that will determine an international multilateral agreement on climate change policies. They listen to and provide feedback to student groups and their proposals for replacing the Paris Climate Agreement. Each group member has a specific responsibility:

- The **group director** is responsible for organizing your presentation to the participants at the COP meeting.
- The **scientific expert** is responsible for explaining how your group's position relates to scientific evidence and research about climate change.
- The **political expert** is responsible for explaining how past and present international politics affect your group's position.
- The **economics expert** is responsible for explaining how the world economy impacts your group's position.

The stakeholder panel has guiding questions to help them consider their specific values that would influence their feedback on each proposal:

1. What are the pressing concerns and values of your stakeholder?
2. How does the daily life of your stakeholder, or the people they represent, affect their views?
3. What type of international agreement would your stakeholder see as fair and effective?
4. What policies would your stakeholder want the COP to prioritize in dealing with global climate change?

[Link to presenting climate change options](#)

[Link to Stakeholder perspectives](#)

Horticulture

Course Description: This science course includes lessons in biology, botany, entomology, chemistry, mathematics, genetics, physiology, statistics, garden design, plant propagation, plant selection, and plant sales. You will study topics including parts of the plant and their associated functions, environmental requirements for good plant growth, the process of plant propagation using modern state-of-the-art Horticulture technology, the art of container and landscape design, and local plant and tree identification. This course includes maintaining Horticulture's three greenhouses and conducting a community-based plant sale.

Scope and Sequence: Unit 1 – Plant Identification Unit 2 – Agricultural Safety Unit 3 – Botany Unit 4 – Propagation Unit 5 – Sustainability Unit 6 – Marketing – Sales Unit 7 – Soils Unit 8 – Pruning Unit 9 – Insects Unit 10 – Landscape Design Unit 11 – Global Food Supply

Cross-Discipline learning: In the horticulture class, there are two major disciplines that are learned and applied: science and business. The science of growing, transplanting, and propagating plants is applied as students develop and grow their crops. Problem solving skills are applied through diagnosing plant issues and trying different techniques to help the plants grow. Business, as well as, leadership and marketing skills, are applied as students prepare for their annual plant sale. Students develop a marketing campaign using flyers and social media to promote their plant sale. They learn and apply communication and leadership skills through their interactions with the public. They have to “become the expert” about their plants as community members ask them questions during the local plant sale.

Involving the community: A local master gardener, Einer Handeland, is directly involved with the horticulture class. He has shared his expertise and offered his own garden as a learning tool. He joins the class to share tips and tricks for growing and taking care of different plants and has offered himself as a resource to help students, and the teacher, when they run into problems. Students take a field trip to his garden and it is used as a model for learning. He has donated plants to help the class with their plant sale. This year, the students applied their knowledge by helping him plant about 70% of his garden.

In addition to visiting Einer's garden, students have also visited the Bellevue Botanical gardens where they furthered their understanding of the importance of native species. Volunteer experts have also been mentors to the students helping them learn about newer technologies in agriculture and helped them develop and use their growing towers.

Students as mentors: Advance horticulture students are directly involved in the teaching of the course. They interact directly with the regular students to teach about properly mixing and developing soil for the plants. These mentoring skills are further developed as they help train the regular students to properly take care of the plants (managing soil, weeding, and watering), and help them problem solve issues. Some students have applied their skills beyond the classroom

and have taken a work position at our green house and have expanded their learning to develop their own garden.

Professional Leadership and Employability Project: At the beginning of the year, students are given a list of leadership activities within different communities that they can choose from, in addition to developing their own. These activities promote important career oriented skills. Some examples of these activities include, competing in an educational event, participating in a community service project, hosting a student-led parent conference, and interviewing a person in a leadership position. They can select several of these activities throughout the year that allow them to develop and practice their leadership skills. These activities also allow students to practice advocating for themselves. Students have to provide evidence of their accomplishments.

Global Food Supply Unit: Students start by looking at the caloric intake of the Earth and compare it to our consumption. Ted Talks are used to learn more about global food impacts by comparing different global regions' production and consumption. Students examine the interconnections of the global supply chain. Students read the 'Seed Savers' book series in which a community of people don't know where their food comes from (food blind) and use it as a way to understand the importance of what they are learning in growing their food. Students discuss how the shift in populations from rural to urban areas has contributed to food blindness. Students compare book examples to what we also see in our world including disparities in food access and quality including ramifications of food deserts. Students examine how some countries produce excessive amounts of food, but are not having access to it the same as other more economically stable areas. Discussions include how some of our food "staples" are creating unstable food practices. Students examine the exploitation of laborers in different global industries which can affect the loss of sustainable food production and loss of culture.

Insects Unit: Students learn the importance of insects for our food supply through this unit. As they learn about the diversity of pollinators beyond honey bees they often shift their perspective and understanding of insects and see their importance for maintaining the global food supply.

Advanced Algebra with Financial Applications

Course Description: Advanced Algebra with Financial Applications is a mathematical modeling course that is algebra-based, applications-oriented, and technology-dependent. The course addresses college preparatory mathematics topics from Algebra 2, Statistics, Probability, Precalculus, and Calculus under eight financial umbrellas: Discretionary Expenses, Banking, Investing, Credit, Employment, and Income Taxes, Automobile Ownership, Independent Living, and Retirement Planning and Household Budgeting.

The course allows students to experience the interrelatedness of mathematical topics, find patterns, make conjectures, and extrapolate from known situations to unknown situations. The course offers students many opportunities to use, construct, question, model, and interpret financial situations through symbolic algebraic representations, graphical representations, geometric representations, and

verbal representations. It provides students a motivating, young-adult centered financial context for understanding and applying the mathematics they are guaranteed to use in the future. If you need an additional year of mathematics after Algebra 2 to be successful in Precalculus and/or college level mathematics, this is the course in which you should enroll. Group and individual projects/presentations, as well as daily homework, will be designed.

Each lesson or series of lessons within the course has video or audio segments to help connect the math concepts to real-world applications with people of diverse values. ([Sample Lesson 4-5](#)) ([Sample Lesson 2-5](#)) ([Sample Lesson 5-4](#)) Some mini projects that students engage for their learning include:

Podcast Project to Start the Course: [Project Link](#) The “How I Built This.....” podcast was used to spark interest and understanding about building a business. The podcast includes personal stories on how individuals were able to successfully start a business or philanthropy. The stories helped students see the big picture and included not only the “steps” but what hurdles needed to be overcome, how marketing plays a role, and ways they were able to problem solve.

Audio Public Service Announcement: ([Student Work](#)) Creative thinking project that relates information to serve the greater good of the public. Students shared 3 “aha” moments as a reflection of the course. They narrow their topics to one to create a public service announcement to inform the public. As a cross-disciplinary activity, the radio teacher, Joe Bryant, came into their class and shared key elements for creating the audio recording for radio purposes.

Example student topics: When to buy a car, student loans, reading a promissory note, preparing to purchase a house, tips for investing in the stock market, etc.

Taxes Project: Using problem solving skills with a complex authentic real-world problem, students completed a U.S. 1040 Tax Form (and other associated forms) as a fictitious married couple to apply math concepts and terminology. The project included planning and organizational skills; students discussed with their parents/adults how to keep their important documents organized throughout the year. The class then shared and reflected via a Schoology discussion.

Tax Meme “Reality Check”: ([Project](#)) Students created a meme to help communicate important information and common mistakes about taxes. The teacher shared a personal story about how they had made a mathematical mistake in their past taxes and how the IRS had dealt with it to spark a discussion about taxes. Questions that were brought up included: What may you get audited on? How can you avoid this? Students then researched about tax information and were encouraged to talk to a tax accountant. This information was used to create a “tax meme” along with a justification/explanation of what message they were trying to convey. The teacher provided a model meme to help the students.

Independent Living Project: Students learned about the financial aspects of living on their own and researched topics such as house floor plans, financing a loan, mortgage points, using interest, balancing taxable income, etc. The history of ‘Red-Lining’ was used as an introduction to the project. Students learned about the history of banks using “redlines” to identify “unfinanceable” property areas and how this related to increasing the wealth gap in the U.S. Discussions included how it disproportionately affected different socio-economic and ethnic groups.

Minimum Wage Discussion: What it means and who it is for: Is it for part time individuals or moms taking care of children? Who makes the rules and what are the effects on the economy? The teacher shared videos of individuals who are for and against the minimum wage for perspective to spark discussion and analysis.

Stock Market Project: ([Student Work](#)) ([Project](#))

Dollars and Sense: ([Activity](#)) This activity helped students stay current on financial issues related to Chapter 3 Consumer Credit. They used the Internet or any print media (newspapers, magazines, and so on) to answer the questions. In this activity, they looked at recent news about identity theft. Many credit card purchases can be made online or on the phone, and this makes them prone to identity theft. Start with the Federal Trade Commission (FTC) website, www.ftc.gov. You can also use a search engine to find other sites that have information on identity theft.