Application for STEM School Designation

School Name: Cleveland Middle School

Address: 3635 Georgetown Rd NW

City and Zip: Cleveland TN 37312

School District: Cleveland City Schools

STEM Contact: Renny Whittenbarger

Phone # and Email: (423) 472-8098 rwhittenbarger@clevelandschools.org

Total Student Enrollment: 1364

Total Student Enrollment in STEM: 1364

Cleveland Middle School STEM Action and Sustainability Plan

Introduction

Cleveland Middle School, located in Bradley County, Southeastern Tennessee, strives to provide its community of students, families and staff a cohesive curriculum of learning that embodies the principles of STEM to all stakeholders. Keeping students engaged through the process of design, creativity and innovative thinking, using our CMS Design Model, our staff are encouraged to develop curricula that promote a growth mindset and a solution-based approach to problem-solving. Our use of this design model of instruction was chosen specifically for students to approach multi-layered problem-solving or challenges. It encourages student reasoning to think “outside of the box” and emphasizes innovative reasoning, creativity and perseverance. It is our belief that all students will benefit from instruction utilizing the CMS Design Model.

Our population of 1392 students are members of a global society and their post-secondary skills will require that all students have the ability to think, reason, analyze and work together to solve problems. Achieving academic excellence has always been a part of the Cleveland Middle School experience for our students. Integrating the instructional practices of the CMS Design Model permits our students to fully develop in academics, technology, engineering and the arts with the skills needed as they progress through Cleveland City Schools. Preparing students to achieve success with a STEM emphasis creates opportunities for our staff to develop continual improvements to instructional presentation, assessments and projects within the classroom structure.

Inside of our classrooms, students are implementing STEM practices as they collaboratively solve problems related to our changing world. The CMS Design Model recognizes that the process is not a linear structure but instead encourages students to employ flexibility in their design reasoning. Beginning with empathy, as a means of understanding, students move to clarify what the problem is asking them to do. Students generate a hypothesis of the problem before creating its probable solution. As a next step, students develop a process of testing their designed solution to check their reasoning and success. An important part of the design model requires students to clarify and reflect upon their solution utilizing feedback for improvement. All CMS students are taught that these STEM principles can be implemented in cross-curriculum academics.

Our instructors know that students benefit from exposure to multiple learning experiences and strive to provide lessons that extend beyond the four walls of the classroom. Moving instruction to an outside environment when applicable or providing instruction in a co-teaching scenario permits students to daily engage in STEM lessons for increased rigor and deeper understanding. Presenting active student engagement opportunities permits students to achieve a higher cohesive reasoning level for all of the STEM principles. With the CMS Design Model, instructors and students are able to gain stronger understanding for improved solutions to learning practices.

Cleveland Middle School strongly encourages and provides teachers with professional development opportunities. Our teachers meet multiple times a month within curriculum areas and informally, throughout grade levels and academic areas. Cross-curricular opportunities occur both informally and formally, frequently through the structure of our middle school schedule. Grade level meetings are scheduled weekly/monthly and include members of ESL, SPED, Counseling and Related Arts to share current perspectives on student experiences. All grade levels interact as grade level teams and content area teams, with the 6th and 7th grade forming smaller teams composed of 2, 3, and 4 members. Our 8th grade team is formed by 4 content areas to permit students to learn the necessary transition skills in preparation for their high school experience. Additional partnerships are formed with our Related Arts team/Library Media as they are paired with a Math or Science instructor schoolwide for our Lucy Writing curriculum. These partnerships provide opportunities for designing instruction, receiving instructional feedback, creating assessments, celebrating student success, and focusing on STEM instructional techniques. It is because of the opportunities that these continued contacts enable CMS staff members to develop Project Based Learning (PBL) for improved instructructional assessment. Student understanding and knowledge can be assessed with multiple forms such as summative, formative, presentations, portfolios, and collaborative PBL experiences.

Director of Schools Letter of Support
Principal Letter of Support
Community Letter of Support

Cleveland Middle Focus Goals

- Cleveland Middle School will work to provide students equal access to a safe learning environment that promotes academic achievement, limits lost instructional time and ensures that all students have the opportunity to learn.
- Cleveland Middle School will maintain a positive Level 3 or higher district score in TVAAS and meet its district
- Cleveland Middle School will maintain a positive Level 3 or higher district score in TVAAS Literacy and meet its district Literacy AMOs by grade band and subgroup.
- Cleveland Middle School will attain a positive Level 3 or higher district score in TVAAS Composite and meet its district Science AMOs by grade band and subgroup.
- Provide opportunity for all students to receive a STEM-based education.

Cleveland Middle School STEM Focus Goals

After completing the self-assessment with our STEM Leadership Team, Cleveland Middle School will:

- During the 2020/2021 school year, Cleveland Middle School will work to implement STEM PD strategies introduced in 2019/2020 PD
- Teachers will implement the CMS Design Model into their instructional course.
- Cleveland Middle School's STEM Leadership Team will continue to meet regularly to discuss areas for improvement in growth and classroom STEM learning opportunities.
- STEM PD sessions will be scheduled within CMS for all teachers throughout the 2020/2021 school year for continual and increased usage of PBL in CMS classrooms.
- Related STEM PD opportunities are provided through the district after school and also self-selection by teachers and encouraged in its use.
- Cleveland Middle School will provide students with opportunities for experiences with Service-Learning, 21st Century Skills, Community Projects, Career Assessment (YouScience), Career Research, Career Inventory (YouScience), Classroom Speakers and Industry Design Challenges.
- Cleveland Middle School will continue to work with the Cleveland Chamber of Commerce in implementing partnerships through its BEST Partners Program, providing support to our school programs, as classroom and school partners and the Junior Achievement Program (both in 7th and 8th grades) where the business and community volunteers instruct our students in both career and economic life skills.

Infrastructure

Attribute 1.1 STEM Action and Sustainability Plan

The development of the STEM Action and Sustainability Plan involves all members of the CMS STEM Leadership Team and the support of CMS staff in contributing to its successful implementation and sustainability. The Leadership Team formed subcommittees to focus on each attribute as their responsibility for contributing to the development of the Action and Sustainability Plan. Our team met as a whole group to communicate, share and receive feedback from the other committees. Each “Attribute” committee worked hard to include all faculty in the collection of input and resources/evidence related to our CMS goal of STEM Designation. Our plan is the result of many individuals working together school-wide, collectively, towards a single goal, that of being a STEM designated school.

CMS STEM Designation Self-Assessment
CCS January 2021 Board Highlights
CMS Design Thinking Model
CMS Principal Weekly Communication (related to STEM)

Attribute 1.2 STEM Leadership Team

Cleveland Middle School benefits from its cohesive STEM Leadership Team composed of faculty representing all disciplines from CTE, Academic Content, Fine Arts, Library Media, SPED and Administration. The goal of our team is to encourage, support and lead our school as it moves forward in the integration of STEM implementation. Each area representation is tasked with communicating and guiding their content areas forward in the development of STEM classroom curriculum. The members are responsible for leadership in weekly/monthly content area meetings and grade-level meetings. The leadership team has played a key role in providing guidance to the development of our STEM Action and Sustainability Plan. Our district CTE Coordinator Renny Wattenbarger leads our district CTE Business/Advisory team to coordinate the communication between community partners and respective partners related to the STEM designation’s goals and initiatives. His work, along with the advisory team, is vital to the success of our CMS Action and Sustainability Plan.

Cleveland Middle School Leadership Team

STEM Leadership Team: Infrastructure Subcommittee

Name	Email	Role
Renny Whittenbarger	rwhittenbarger@clevelandschools.org	Supervisor of Career and Technical Education
Scott Carroll	scarroll@clevelandschools.org	CMS Assistant Principal

Jeff Elliott	jelliott@clevelandschools.org	Chief Academic Officer
Joel Barnes	jbarnes@clevelandschools.org	Supervisor of Secondary Education and Federal Funds
Leneda Laing	llaing@clevelandschools.org	CMS Principal

STEM Leadership Team:Curriculum and Instruction Subcommittee

Name	Email	Role
Kristen Early	kearly@clevelandschools.org	Mathematics Teacher
Emily Buckner	ebuckner@clevelandschools.org	Science Teacher
K.J. Harris	kharris@clevelandschools.org	Social Studies Teacher
Sarah Thomas	sthomas@clevelandschools.org	Science Teacher
David Hanley	dhanley@clevelandschools.org	English Teacher

STEM Leadership Team: Professional Development Subcommittee

Name	Email	Role
Emily Raper	eraper@clevelandschools.org	BLADE Facilitator
Erica Parker	eparker@clevelandschools.org	English Teacher
Cheree Thompson	cthompson@clevelandschools.org	Science Teacher
Christina Melton	cmelton@clevelandschools.org	Science Teacher

STEM Leadership Team: Achievement Subcommittee

Name	Email	Role
Erin Lefever	elafever@clevelandschools.org	ESL Teacher
Ali Creel	acreel@clevelandschools.org	Special Education Teacher
Ed Fickley	efickley@clevelandschools.org	Social Studies Teacher
Tonya Caywood	tcaywood@clevelandschools.org	Science Teacher

STEM Leadership Team: Community and Post-Secondary Partnerships Subcommittee

Name	Email	Role
Derek Morris	dmorris@clevelandschools.org	Engineering & Robotics Teacher
Jon Bovee	jbovee@clevelandschools.org	Medical Science Teacher
Grace Dyrek	gdyrek@clevelandschools.org	Library Media Teacher
Rodney Broadnax	rbroadnax@clevelandschools.org	Art Teacher
Valerie Helmstetter	vhelmstetter@clevelandschools.org	Mathematics Teacher

2020/2021 Meeting Agendas
Example of Attribute 5 Meeting Agenda
Images of STEM Leadership Meeting
Attribute 2 Planning Meeting

Administrative STEM Committee Members

Name	Email	Role
Renny Whittenbarger	rwhittenbarger@clevelandschools.org	Supervisor of Career and Technical Education
Scott Carroll	scarroll@clevelandschools.org	CMS Assistant Principal
Jeff Elliott	jelliott@clevelandschools.org	Chief Academic Officer
Joel Barnes	jbarnes@clevelandschools.org	Supervisor of Secondary Education and Federal Funds
Leneda Laing	llaing@clevelandschools.org	CMS Principal

STEM Leadership Team members who are tasked with additional responsibilities necessary for successful implementation and sustainability of STEM at CMS.

- Emily Raper is our BLADE (Blended Learning and Digital Enhancement) Coordinator, who is our on-site coordinator for our 1 to 1 instructional device project. She ensures that student devices function properly, provides student, parent and teacher support in the form of educational instructional videos, assists in teacher lesson delivery with technological information, guides our virtual learning program and leads related professional development.
- Scott Carroll (Assistant Principal) and Leneda Laing (Principal) provide teacher coordination of STEM activities and initiatives through weekly communication and provide leadership within our school.

- Grace Dyrek (Library Media Specialist) designs and maintains a CMS STEM website for our school resources to be uploaded and shared.
- The CMS Library (guided by Grace Dyrek) has received $30,000 from BCPEF (Bradley Cleveland Public Education Foundation) for the creation and support of Overdrive, a digital access library containing STEM-related materials and resources for students.She was also influential in pursuing a grant for the addition of a Z-Space computer (virtual reality device) which is used in our STEM lessons.
- CMS currently has 3 CTE Certified Teachers and 1 WBL Certifications. The middle school does not directly engage in WBL but all CMS students participate in a career exploration course as a related arts, in addition to the numerous CTE courses such as Engineering I and II, Business and Computer (including 1 college credit course Computer Applications), Communications (our morning television) and Medical Science. These classes provide a foundation for our students to be successful as they transition to Cleveland High School and its WBL program.

Cleveland Middle School's goal of achieving STEM Designation is continually communicated within the school and district through advisory meetings, PD sessions, administrative meetings, curriculum meetings, content department meetings, school-wide faculty and staff meetings, in addition to community leaders, the Chamber of Commerce and various civic groups. We intend to continue communicating the goals and initiatives of STEM Designation for our school to all invested partners as their input is essential to the success of STEM at our school. The input/feedback received from all stakeholders is utilized in the guiding of the CMS STEM Leadership Team to continually improve and refine its goals within the goals of CMS STEM goals and the guidelines of STEM Designation. Our Career and Technical education teachers will hold a minimum of two advisory meetings during the 2020/2021 school year sharing the STEM Designation goals.

2019/2020 CCS/STEM Advisory Committee

Name	Company/Responsibilities	Email
Abby Webb	May Create/Marketing Project Manager	abby@maycreate.com
Joshua Foggin	Wicked Woodshop/Owner	josh@wickedwoodshop.com
Kelly Hughes	CMS Teacher	khughes@clevelandschools.org
Megen Saez	Parent	msaez@clevelandschools.org
Franklin Odom	Retired CTE Teacher	fwodom@gmail.com
Andrea Lockerby	Tennova/Director of Professional Outreach	andrea.lockerby@mytennova.com
Meghan Guinn	Etsy Store Owner	meghan.guinn@gmail.com
Jada Stewart	EMT for Bradley County	jada25671@gmail.com
Gracilyn Kersey	CMS Student	gkere00@clevelandschools.org
Adi Patel	CMS Student and Class Ambassador	apatel07@clevelandschools.org
Camden Lockerby	CMS Student and Class Ambassador	clocke01@clevelandschools.org
Hailey South	CMS Student and Class Ambassador	hsouth01@clevelandschools.org
Jailee Easley	CMS Student and Class Ambassador	jeasle00@clevelandschools.org
Kinslee McGowan	CMS Student and Class Ambassador	kmcgow00@clevelandschools.org
Leah Adriaanse	CMS Student and Class Ambassador	ladria00@clevelandschools.org
October Cox	CMS Student and Class Ambassador	ocox00@clevelandschools.org
Derek Morris	CTE STEM Teacher	dmorris@clevelandschools.org
Deree Shilling	CTE Medical Science Teacher	dshilling@clevelandschools.org
Hannah Medema	CTE Business Communications Teacher	hmedema@clevelandschools.org

Attribute 1.3 Professional Development for Leadership Team

Integrated and supported by Cleveland Middle School administration and staff is the recognition of its need to continually seek professional development opportunities related to STEM instruction and activities. The STEM Leadership Team focuses its energy on providing communication and instruction to the CMS faculty with Professional Development opportunities and best practices related to STEM instruction during weekly content are meetings, monthly grade-level meetings and during PD assigned days. In doing so, this encourages its members of the Leadership Team to work together in its monthly meetings on ideas of achieving opportunities of new learning for all team members and faculty. This has resulted in attendance/presenters of the STEM Leadership Team at the following:

Attribute 1.3 CMS STEM Leadership Professional Development

Professional Development	Date	Name(s)	How training assisted STEM education implementation at CMS
Google Certified Educator	June 6, 2020	Kristen Early	This rigorous program designed by Google empowers teachers to learn and use all GSuite for Education tools. Teachers, in turn, utilize these programs within the context of their classrooms to promote critical thinking, problem solving, and design thinking. Students use the GSuite for Education applications for PBLs, group work, and experiments in their classrooms. This certification ensures that the teacher is using the most up-to-date technology tools and can efficiently integrate these tools to promote STEM education at Cleveland Middle School.
Capturing Kids Hearts	August 2018, January 2019, August 2019, January 2020, August 2020, Ongoing during PLC/SLT Team meetings	All STEM Leadership Team	Capturing Kids Hearts gave us the ability as teachers to step away from the academic standards of your typical lesson plan and embrace the whole student. We were given tools to allow the students the ability to collaborate with teachers to create a social contract instead of your typical classroom rules. This gives the students ownership within the

	Leadworthy Classes taught August 2020 to present		classroom, the ability to think critically about their own behaviors, and the use a peer checking system to glean feedback immediately. Capturing Kids hearts training allowed us as a staff to unify on our social norms and classroom management. This also gave us the ability to really get to the heart of teaching and why we do it! Through building relationships with our students we can see further growth in their overall academics as well as take a greater interest in our student's lives. Not all of the tools that the CKH training gave us will work for every student or every class, we are able to do a self-reflection and adapt our teaching and classroom management based on the specific students within those classes, which allows our students to think and reflect which is part of our school STEM thinking process. The leadership (leadworthy) portion of CKH fits in the community aspect of STEM. We have used TED talks to replace guest speakers. Also, teachers have used their background as a service technician, a caterer and TLE manager to acclimate students to job skills.
TECH Tuesdays	Tuesdays, Monthly during the 2019-2020 school year	All STEM Leadership Team	Tech Tuesdays allowed teachers the opportunity to receive small group instruction and assistance with various technology platforms in their classrooms. The slogan "pick a path, pick a pace, just not zero" encouraged all educators to use technology in their classroom in some capacity, and it removed the fear of failure. Teachers were also given the opportunity to collaborate cross curricularly to create projects

			and lessons to engage students by integrating technology into their PBLs and classroom lessons. Some of these projects include creating videos, designing infographics, engineering bridges and catapults, or even modeling the structure of atoms.
STEM Design Thinking Process	January 4, 2021	All STEM Leadership Team	The STEM leadership team participated in a training from TSIN entitled “Introduction to Design Thinking” where teachers and administrators were taught the stages of design and then experienced the stages of design. This training helped CMS staff truly understand the design thinking process that we expect from our students. This training allowed our teachers to enhance the PBLs and lessons that they are doing in their classroom to ensure alignment to the design thinking map (CMS STEM initiatives). The training also allowed teachers to plan for future classroom assessments, activities, and PBLs for future use.
Partners in Education Conference	1/21/2020 - 1/27/2020	Ali Creel	During PIE, faculty attended a workshop on STEM in the classroom. This challenged us to not just teach a standard, but use different mediums to help students take notes, use peer feedback, and create tangibly abstract concepts in math. During a lesson, we begin with the text, to model the new skill, we do it together on white boards, and then they do their independent work including 10 minutes of 'struggle' time. Most students lack confidence in themselves and this time allows them the time to start an activity they perceive as hard knowing we will then work on it together. As we go over the problems, staff learned to give direct feedback starting with "something good" and followed by a

			modification that might be needed. Through the conference,attendees were empowered to know that their students are capable of doing great things despite their disabilities. We have shared this information with the special education department to assist with their implementation of STEM education.
NCTM Regional Conference	10/2-4/2019	Valerie Helmstetter	Several members of our mathematics faculty attended the NCTM Regional Conference in Nashville TN. Being with like minded peers, who love the teaching of mathematics invigorated all of us in attendance. A focus of the conference involved the implementation of effective teaching practices, creating positive change in our classrooms and experiencing the depth and excitement of mathematics. The knowledge gained in our sessions promoted strong dialogue between staff how to best incorporate STEM related practices and manipulatives in our CMS classrooms. Resources were purchased at the conference that are currently in use such as more hands-on manipulatives for graphing and numerical reasoning. Our newfound knowledge and information has been shared in discussions with our peers in content related conversations.
TVA Energy Monsters	1/21/2021, 2/10/2021, 2/11/2021	Christina Melton	1) How do we use energy? 2) How is energy made? 3) How can we be more efficient and conserve energy? While we use the complete STEM Design Thinking Map to work through project based learning, we should also stress on in our daily lessons the individual components of the map. During this presentation, students addressed Empathizing and Clarifying. Students Empathized by identifying

			the problems with some of our energy sources. Students Clarified by asking questions about how the energy sources worked or what limitations they had. Students also had to Empathize by identifying ways energy was being wasted. Students were asked to Generate solutions for not wasting energy. Some students even took the questions in Clarifying to the next level to Generate ideas for solutions to other ways we could obtain energy
Lucy Calkins Writing	8/2019, 10/2019, 1/2020, 5/2020,	All STEM Leadership Team	The Lucy Calkins writing program requires students to think through the writing process using a systematic approach. Students write for real purposes and model their writing after texts they see in the real world. Students are encouraged to choose subjects and topics that are important to them. The Lucy Calkins writing program engages students and reinforces the Cleveland MIddle School STEM Design Model by asking students to inquire into meaningful subjects through empathy of real world issues, clarifying problems, generating possible solutions, creating new ways of examining the issue, Since writing requires logical thinking, planning, and support. It bolsters the STEM program at Cleveland MIddle School by helping students become critical and sequential thinkers.
TDOE STEM 101	8/6/2020	Derek Morris Hannah Medema	The TDOE STEM 101 training helped teachers have a better understanding of the Design Think Process. We were able to edit and strengthen our current lesson plans to include this STEM strategy with the goal of deepening student problem solving abilities.

Robotics for the Middle Grades (4-8)/UTC	Summer, 2019	Ali Creel Valerie Helmstetter	During our two week course, we were given EV3 Lego Mindstorm kits. The instructors also gave us Venior adaptors to use with the robots. We learned about STEM careers, STEM in the classroom, and using it as a club at our school. We brought back the kits to CMS and immediately used them for the BETA Robotics team. We used the same Lego Lessons for building basics, programming, and then set the students to work. The impact of the Lego Workshops faculty has taken over several summers, gives our students the latest technology and training from one of the top producers in the World. Students have already begun the engineering process for the Robotics competition for Beta STATE this year. We will also be using the LEGO Mindstorms with CMS GIFTed students in the spring and then the Venior adaptors to monitor the weather as part of a STEM hands on unit for 6th grade to student clouds, temperature, and environment.
TN Stem Innovation Summit	5/14/2019 - 5/15/2019	Derek Morris Hannah Medema	The TN STEM Innovation Summit helped CTE teachers gather strategies for integrating STEM in our classrooms. It also helped us raise student interest and achievement in STEM education.
AMLE Presenters	2/9/2019	Dr. Leneda Laing Kristen Early Emily Buckner Emily Raper Ed Fickley	Having students become active learners promotes deep understanding and critical thinking. Storytelling can help learning come alive for students. This session will present digitally based strategies to help educators engage students to be storytellers by learning to engage in researching and synthesizing information in order to create presentations that reflect

			understanding and complex thinking. Creating digital presentations allows students to utilize various learning modalities. This instructional strategy reinforces the CMS STEM Model through promoting creativity and problem solving through storytelling techniques that require analytical reasoning and synthesis to find connections across time and topics.
PBL Training	1/4/2021	Christina Melton (Presenter) All STEM Leadership Team	The purpose of this PBL training was to remind teachers of the PBL process, to encourage teachers to implement PBLs, and to initiate collaboration among teachers. The presentation included how the STEM Design Thinking Map was the perfect planning tool for creating or further developing a PBL. Teachers were reminded that they are already doing instruction and activities that meet some of the components of the STEM Design Thinking Map. They were encouraged to further develop this instruction and these activities into full PBLs that reach all five parts of the STEM Design Thinking Map. Teachers were reminded that PBLs are lengthy and that you should probably focus or one or two a semester as you begin. Next, teachers spent time in collaborative groups planning a PBL. The groups were self-selected. Some groups were made of teachers in a single-content area and some groups were made of teachers across different content areas. Finally, each group had at least two teachers from outside their group peer review their PBL.
Screencastify Training	April 2020	All STEM Leadership	This training, by a CCS

		Team, E. Raper (presenter)	teacher-leader and CMS STEM Leadership team member, focused on best practices for using screencasting in the classroom. Teachers were trained in how to use the program themselves, and then went on to learn about students using screencasting in the classroom as a way to demonstrate their learning and understanding. Many teachers chose to utilize this tool in PBLs and other projects for their classroom in the 2019-2020 and 2020-2021 school year.
Screencastify Genius Training		E. Raper, R. Williams, A. Pemberton, K. Early, A. Denton, C. Bolanos, H. Medema, K. Kyle, K. McCraw, S. Jones, E. Vermillion, H. White, T. Esquinance	This certification by the Screencastify company focused on best practices for using screencasting in the classroom for both teachers and students. This program was for teachers who already knew how to use Screencastify, so the basics were not taught. Teachers learned best practices for using Screencastify to deliver instruction, projects, meet IEP goals, and other uses of the program for teaching. Many teachers chose to utilize this tool in PBLs and other projects for their classroom in the 2019-2020 and 2020-2021 school year.
Canvas Training (after school virtual)(2020/2021)	11/16/20, 1/28/21, 12/10/20, 2/8/21	KJ Harris (Presenter) Valerie Helmstetter Emily Buckner Cheree Thompson Erin LeFever Grace Dyrek Derek Morris	Canvas training allows for teachers to implement their pedagogy with the stem model being the root of their lessons. Canvas allows for differentiated lessons that can allow all students to create, clarify, design, test, and empathize with content, making the stem model come to life in digital learning. Canvas has many external tools that engage different elements of the STEM thinking process and mastery paths allows for those lessons to be differentiated to fit every individual student's needs.
Google Suite Trainings		Emily Raper	This training, initially delivered by

		(Presenter) All STEM Leadership Team	MobileMind Educational Consultants in Atlanta, helps familiarize teachers with GSuite tools for education. Teachers learn how to operate the programs so they can then use the programs in their classroom instruction to integrate technology into all aspects of teaching and learning. Teachers, in turn, utilize these programs within the context of their classrooms to promote critical thinking, problem solving, and design thinking. Students use the GSuite for Education applications for PBLs, group work, and experiments in their classrooms. This certification ensures that the teacher is using the most up-to-date technology tools and can efficiently integrate these tools to promote STEM education at Cleveland Middle School.
TASL Virtual Conference	9-26-2020	Grace Dyrek	"Engaging Virtual Learners" and "Principles for Designing Effective Online Instruction" were two seminars I attended that offered practical suggestions for improving my skills as I navigated new territory this year, teaching the online "Fundamentals of Coding" course for our CMS students in the Virtual School of Cleveland. "How Video Games Made Me a Writer" seminar provided keen insight into the online world of gaming where our students spend most of their time and how using that experience can help us teach writing more effectively in the offline world.

IMAGES Partners in Education Presentation and PD STEM Leadership Team Member
50 Nifty Tech Tools Presentation by STEM Leadership Team Member at AMLE
Image of Robotics Training CMS Teachers/StEM Leadership Team
12 Tips and Tricks Presentation by STEM Leadership Team Member
AMLE Confirmation of Presentation Acceptance STEM Leadership Team Member
CCS/CMS January PD Schedule includes STEM Leadership Team Member Presentation
AMLE Confirmation of Presentation by STEM Leadership Team Member

Google Certification by STEM Leadership Team Member
TASL Attendance Certificate by STEM Leadership Team Member
Robotics Training Certificate by STEM Leadership Team Member
TDOE STEM I Certificate by STEM Leadership Team Member
STEM Innovation Summit by STEM Leadership Team Member
NCTM Regional Conference/Nashville by STEM Leadership Team Member
Screencastify Certification by STEM Leadership Team Member
TVA Energy Training by STEM Team Leadership Member

Attribute 1.4 Classroom and Building Layout Promote 21st Century Skills

Cleveland Middle School seeks to promote 21st Century skills in students' foundational learning as it prepares students for success at the next level, Cleveland High School. Recognizing that CMS needs to develop in students the ability to reason analytically, solve complex problems and facilitate communication skills necessary for teamwork. By encouraging the development of these skills, Cleveland Middle realizes that a traditional curriculum of content-based learning must be blended with process learning skills to assist students in achieving a 21st Century education. Our faculty believes that cross-curricular instruction and use of PBL instruction will provide students with the tools for developing process skills. We offer our 8th grade students instruction in Physical Science/ Algebra (high school credit) and Computer Applications (college/highschool credit). Our students are encouraged to participate in service learning through our many curricular and extracurricular activities. CMS students experience a connection to business/industry through its Junior Achievement, community speakers and CTE partnerships in providing student experiences such as job interviews and career exploration. Faculty are evaluated on their instructional delivery and classroom design using the TEAM evaluation rubric to specifically address analytical thinking, problem-solving, collaboration and classroom environment.

Cleveland Middle School's building design features our CTE and library at the heart of the building. By centralizing our STEM/CTE concentrated curriculum, it is easily accessible to all grade levels, students and faculty. Each grade level spirals into an adjacent wing from all of our CTE/Library. Staff and students move freely to each centralized location experiencing a daily connection to STEM. Instructors can move their classrooms to our theatre and spacious library to take advantage of all of their technological features available. Our classrooms are not restricted to only indoor use as our students and staff recognize that a classroom can be created outdoors as well. It is not unusual to see instruction being delivered outdoors in one of our two courtyards, on the side of a large field or behind our building, where an outdoor classroom is featured off of a CMS fitness trail.

CMS Building Map
CMS Virtual Tour

CMS provides every student and faculty with a Macbook Air as part of its BLADE initiative. Our building has been adapted to promote 1 to 1 device learning with enhanced wireless modems

and touch screen presentation devices/Promethean Boards. All classrooms feature capabilities for wireless presentations by instructors and students, using Apple TV as a connection. Lessons are structured to encourage both content and technology skills. Students are able to take their school-issued device home to increase learning accessibility. We are able to provide students without internet access at home kajeets for checkout and a wireless access point in our school parking lot for after school use. This strengthens our students ability to complete assignments, collaborate, give and receive feedback, design projects from coding to multimedia presentations. Our faculty regularly receives G-Suite and Canvas LMS training on updates to use with their CMS laptop to improve lesson delivery involving creativity, review, assessment, strategies, providing feedback and sharing between one another as well as to students.

Cleveland Middle's CTE department features many state of the art components to provide students with experiences in flight simulation, automotive, robotics and engineering design through our Engineering program. Our Communications program provides students with the opportunity to learn Broadcasting in its TV studio featuring a daily morning show featuring news, entertainment and sports recaps. The Business program features instruction in technology with student computers and offers an advanced course in Computer Applications for post-secondary dual credit at Cleveland High School and CSCC. Our Medical Science Program uses current medical equipment to instruct students on monitoring health and well-being applicable to their daily lives. All of these courses are available to all CMS students and provide preparation for college and career readiness as they advance to Cleveland High School. STEM instruction is not limited to our CTE curriculum but integrated within our content areas as well. One example is our ELA department works closely with Lee University to host and write the *Raider Times*, our school newspaper. Students must use technology, analysis and creativity to achieve a finished product.

Evidence of Student Engagement in PBL
CMS Virtual Tour
Photos of Classrooms

1.5 School Schedule

Cleveland Middle School is on a year-long schedule with students rotating through quarterly Related Arts, PE and CTE courses. CMS students begin their day in Homeroom at 7:15 am, due to safe COVID practices. This time is used to encourage and support students in both emotional and academic needs. Our traditional school day begins at 7:50 am and ends at 2:50 pm. Each grade level is organized with a specific schedule to integrate within the school. For example, the 8th grade has a morning where Lucy Calkins writing (25 minutes), followed by two 45 minute Related Arts, CTE or PE classes before beginning their work in 50 minute content area subjects. This is a contrast to the 6th grade who follows the same schedule but in reverse, ending their day with the Lucy Calkins writing class. The 7th grade begins with Lucy Calkins writing and moves to 2 content courses before beginning their Related Arts, CTE or PE in the middle of the day, followed by 2 more content courses. Built into our schedule for all students is an RTI period of 45 minutes varying by each grade level's schedule. RTI time is also used by

our faculty to teach the Capturing Kids Hearts curriculum (Leadworthy Lessons) and Digital Citizenship lessons specific to each grade level. More specific intervention courses are taught by SPED and RTI interventionists to identified students within each grade level's schedule. Our Related Arts (Art, Band or Choir), CTE (Computers, Computer Applications, Engineering I/II and Medical Science, Career Exploration), and PE (Nutrition, Weightlifting, Team Sports, PE, Health) are rotated in 9 week courses. Students are able to self-select their related arts/CTE courses each year. During the homeroom period, two additional classes are offered to students; Raider Times (through the ELA department) and Raider TV (through the CTE department).

CMS Master Schedule
CMS Activity Schedule
CMS At-Home Learning Schedule
CMS STEM and Related Arts Course Selections
COVID Mitigation Schedule

CMS classrooms are designed to meet 21st Century instruction, with plenty of seating, A/V technology and well-equipped science labs at each grade level. Our centralized Library permits access to all students, with a large meeting area at its center and additional smaller classrooms and study areas available for small groups. In our 4 core content areas/grade levels, instructor planning daily is shared, permitting collaboration between faculty in content/ STEM instructional strategies, student performance/achievement data, discussion of at-risk students, discipline concerns and brainstorming cross-curricular instruction (particularly ways to increase STEM practices). Bi-Monthly/monthly content area meetings are scheduled with an Administrator/Content Team Leader during planning to discuss student growth and focus on meeting state standards with improving instructional delivery and use of technology. Grade level meetings are held monthly to address specific building level concerns with the administration. A weekly faculty newsletter is created by Dr. Laing to inform staff of building concerns, update best teaching practices (including STEM), scheduling changes and curricular/extracurricular activities being held that week.

The frequent communication practices and physical design of our building encourages staff partnerships for instruction to deepen student learning in the application of concepts. Teachers are well-engaged with their students. CTE instructors are integrating academic skills within their coursework and academic instructors are embedding STEM-related skills frequently as students empathize, clarify, generate, create and test solutions applicable to their learning.

Sustainability with Partners and Stakeholders

Cleveland Middle School utilizes its advisory teams, CTE Advisory Team, Best Partner, School Improvement Team, Team Leaders, Administration Team and STEM Team Leadership, to provide vital input into our growth toward our goal of STEM Designation. All are viewed as stakeholders in the achievement of creating a STEM culture at CMS. The STEM Leadership

Team will continue to meet monthly to discuss STEM learning opportunities in our classrooms. CMS plans to utilize classroom speakers from business and industry to expand learning opportunities in the future (non-covid). Industry partners will be important to student learning as they are able to bring a unique perspective in reaching our students through being in a classroom. This practice will permit the sharing of problem-solving in a real world setting, providing simulations of adult life, and practice for job/career interviews. Our STEM Advisory Committee will meet with our CTE instructors at least once a semester to provide input on areas of growth opportunities in each CTE cluster. Also, our CTE Supervisor will meet with local political leaders, administrators, civic groups, Chamber of Commerce, secondary partners, students and parents to share STEM opportunities. This will assist in additional perspective communicated by stakeholders on STEM concepts and ideas. Each week, CMS Administrators meet to discuss strategies related to the improvement of opportunities related to instruction and STEM. District level curriculum meetings are held monthly for discussions on data, performance levels and PD techniques.

Evidence of Teachers Using Common Planning
SLT and Grade Level Common Meeting Schedule

Curriculum and Instruction
CMS Design Thinking Model

Attribute 2.1 Project-Based and Problem-Based Learning

Cleveland Middle School provides quality STEM learning experiences in all subject areas. Teachers challenge students with rigorous and relevant real world problems. Problems and projects create relevant inquiry by students resulting in viable solutions. Students are challenged on a regular basis to use critical thinking skills when solving academic and real-world problems.

Teachers design and facilitate quality project based learning to engage students in many ways. Projects are designed to a wide variety of problems, not just the problem at hand so students learn transferable skills. We take priority in our students' unique cultural experiences in the learning process and implement those to increase student engagement and understanding. Projects are also highly collaborative with a clear sense of relevance and purpose to increase student motivation.

Students experience project-based learning across the curriculum. Many teachers collaborate between their specialty areas. Social Studies, Science, and Math teachers partner to create lessons where students are solving problems related to each subject area such as creating a theme park based on an ancient civilization. Students are participating in inquiry based learning in all curriculum areas.

2.1 PBL Chart

Grades 6-8 STEM Content Resources located on STEM Website

Language Arts
Mathematics
Social Studies
Science

Related Arts

6th-8th Grade Clubs and Programs
CMS Art Program
CMS Health and PE
CMS Health and Nutrition
CMS Music Program
CMS Special Education
CMS ESL Program

CTE STEM Resources

CTE STEM Programs
Engineering Technology
Medical Science
Raider TV and Communication
Blade Program
Virtual School of Cleveland
Library Media & Makerspace
CMS RTI Program
Raider Blue Academy
Career Exploration, Finance and Leadership Studies
Gifted Program

Attribute 2.2 Engineering Design Process and Design Thinking Process

To more fully integrate the Design Thinking Process schoolwide, Cleveland Middle School has developed a Design Thinking model - to be displayed and referenced in every classroom - that incorporates language appropriate to both STEM-centered courses and humanities. In PD, the STEM Committee presented this graphic, and teachers collaborated to brainstorm its application in their respective disciplines. PD and classroom instruction emphasize the use of technology to research, collaborate, and create; the iterative nature of the Design Thinking Process, through testing, prototyping, drafting, and revising; and the real-life application of skills and content knowledge.

For example,

- 7th grade science students are tasked to use critical thinking skills and problem solving

to complete 5 challenges in order to “escape from a deserted island”. With each challenge students must plan and execute their design, test it, and make any necessary adjustments.

- In the 4Cs Summer Academic Camp students are given two materials-a roll of tape and 5 pieces of computer paper. They are tasked with creating the strongest and tallest chair that would hold a stuffed animal. They were given four opportunities to test and make changes to their design before final submission.
- 6th grade students are tasked with designing and constructing a scale model theme park with an ancient civilization theme. Students explore energy and geometry concepts while measuring and calculating in order to build their model.

PBL Lessons Emphasizing Engineering and Design
Engineering Integration
Surviving A Desert Island
Building Bridges
Mosaic Project
Chunky Chair Challenge
Images of PBL

Engineering Design Evidence
Medieval Design Rubric
Desert Island Challenge #2
Desert Island Challenge #3
Desert Island Challenge #4
Desert Island Challenge #5

Attribute 2.3 Quality of Technology Integration

Technology is purposefully integrated with lessons across departments to help enhance instruction, engage students and quickly assess learning. Cleveland Middle School has a wide variety of instructional technology tools to help prepare students for both college and careers. Every student at Cleveland Middle School is issued a MacBook. Students use these devices in all classrooms and at home. Canvas and Google Classroom are currently our learning management systems. They are used across all of our courses. Teachers are continually trained in our online programs so they can better implement them in their classrooms with students. Teachers also use Canvas and Google Classroom to provide multi-modal learning opportunities as a means of differentiating instruction and to allow students self-directed learning experiences. Students also use Google Suite Apps to collaborate on projects and engage in peer review across content areas.

CMS B.L.A.D.E. Program
Images from the Macbook Deployment
Medieval Map Project

Attribute 2.4 Exploring STEM Careers

Cleveland Middle School students explore and investigate STEM careers through daily lessons and activities. Partnerships are also created in the community for students to connect with local businesses and careers in STEM.

Teachers at CMS expose students to various STEM careers through Project Based Learning as they are integrated in all core and support classes. Students regularly participate in video conferencing and classroom visits with STEM career professionals. Each year students attend a college-sponsored Career Fair where they are invited to participate in hands-on activities to entice interest in a variety of STEM professions. Students also engage in end-of-the-year Project Based Learning modules in which students actively participate in simulated STEM jobs. All CMS students take part in a Health Fair sponsored by our local medical community and other community businesses. Our CTE classes use a program called YouScience to explore career options to help students imagine what they can become. This program measures aptitude and interest.

CMS partners with a variety of local organizations and colleges to enhance the exploration of STEM careers. Through our 4 C's (Community, College, Career, Citizenship) Summer Academic Camp, students attend field trips to local colleges and businesses to enhance real-world connections to STEM careers. Community partnerships with First Horizon Bank, CHI Memorial Health Care, Cleveland Country Club, and Westwood Baptist church have allowed us to create a database of STEM career professionals who will partner in the classroom to serve as guest speakers or demonstrators. Having this database allows ease of access for teachers to implement STEM careers in their classrooms regularly and for students to make real world connections in their learning.

Evidence of Exploring STEM Careers
Junior Achievement Reality Check
Images of JA
STEM Careers YouScience Career Exploration Tool

2.5 College and Career Readiness Skills

Cleveland Middle School teachers empower students through the 4 C's of 21st century skills: critical thinking, creativity, collaboration, and communication. These skills are demonstrated throughout CMS curricular and extracurricular activities.

CMS teachers develop and integrate project based learning lessons throughout the year integrating STEM concepts to help engage students in future careers.

STEM is an integral part of our elective classes, also called Career and Technical Education classes, and compliment the core curriculum as they work hand-in-hand throughout the school

year. These classes include Medical Science, Nutrition, Leadership, Art Health, Career Explorations, Raider Times, Raider TV, Computer Apps, Business Communications, Engineering Technology, STEM Academy, and Personal Finance. Each CTE class teaches students necessary skills to successfully communicate thoughts and ideas as students collectively work together for a common goal.

Teachers throughout the building display college degrees and higher education accomplishments to model for students and help impart college and career opportunities.

YouScience Results “Jaeda You Crushed It!”
College and Career Readiness
Images of Teacher’s College Experience

Attribute 2.6 Integrity of the Academic Content (Including Cognitively Demanding Work)

CMS students participate in rigorous, standards-based, coursework with options to pursue individual interests. All teachers are implementing design thinking in their lessons. Lessons are aligned to state standards.

Students in 8th grade ELA design social justice projects in their study of the Holocaust. Inquiry based learning guides instruction through researching and interviews. Students create a model or 3d representation of their chosen Holocaust topic. Learning is culminated through a living timeline shared with the community. Since students are encouraged to become experts, they are able to answer questions of visitors. Field trips are taken to the Children’s Holocaust museum in Whitwell, TN and the Jewish Federation of Chattanooga.

Our Beta Marketing students competed and won nationally with a prompt that requested them to design a survival guide for middle school students in order to meet a community need in the midst of unprecedented times. They were able to design a student-created interactive website and videos complete with student and parent sections, videos interviews with administration, and updated health policies and procedures. The Beta Service Showcase Students also won national recognition after designing a service project that utilized community partnership with our local school for disabled adults, Trousdale School.

Students in sixth grade are currently participating in fully integrative, project-based learning about theme parks. Students engaged in researching various theme parks all over the world by each choosing a different park, using Google Slides to collaboratively create a presentation showcasing over 70 parks, and creating expressions and equations to display admission and travel expenses. Students then began designing their own original theme park in small groups. Each group was assigned a different ancient civilization to use as the theme of their amusement park. Students must also build one model roller coaster to showcase during their final presentation.

Our systematic and cohesive approach ensures that lessons and projects are not only aligned to state standards, but they also actively involve students in STEM instruction throughout each day. These design thinking skills are a critical foundation that can be transferred to real-world problem-solving.

CMS Beta Club
Holocaust Project
Student Exemplars Holocaust Project
Holocaust Artifact

2.7 Enrichment Learning Activities

Cleveland Middle School is home to a vast array of extracurricular activities. Our many clubs and programs focus on teaching the whole child. CMS students can explore their unique interests, gifts, and talents through affiliations with Beta Club, CMS Musical, Raider Times, Raider TV, Student Council, Chess Club, FCA (Fellowship of Christian Athletes), TSA (Technology Student Association, and many more. Students and parents are able to preview all of the extracurricular activities offered at Cleveland Middle prior the beginning of each school year during our 6th Grade & New Student Orientation Nights, in which booths are set up for each enrichment learning program or club we offer.

For students interested in broadcasting or journalism, we recommend RaiderTimes and RaiderTV. RaiderTimes is a journalism program in which students produce our school newspaper, available virtually. RaiderTV is a student-led, created, and produced news show that airs every morning during homeroom. Students stream this show in order to provide the latest news and happenings of Cleveland Middle School, including segments on announcements, weather, sports, lunch, and special features. Our Beta Club has received multiple national awards after succeeding in robotics, engineering, marketing, arts, and academic competitions. For students who are not as interested in competitions, but would rather seek personal enrichment time, our library media center provides an after-school program that allows students to explore their interests and creativity. Students interact with Lego robotics, makerspaces, coding, computer programs, digital music composition and mixing, 3D computer exploration, and much more! There is a place for every student to find belonging and flourish at Cleveland Middle!

CMS Beta Club
CMS Parent Night for Rising 6th Grade
Lucy Calkins Writing Program
CMS Chess Club
“4 Cs” Summer Camp
CMS Library and Makerspace
CMS Drama Club
Raider Times News
CMS Gifted Program

Raider TV
CMS Music Program
CMS Art Program
CMS Student Council
CMS TSA
CMS Physical Education
Career, FInance and Leadership Studies
Be Kind Initiative

Professional Development (School-Wide)

Attribute 3.1- Quality STEM Professional Learning

Cleveland Middle School provides many opportunities for STEM professional learning through programs that are required for all CMS teachers. Our school district focuses on the Capturing Kids' Hearts (CKH) program as a way to build relationships and for classroom management, and CMS has added our own twist on the program by incorporating our STEM initiatives into the classroom expectations for CKH. In August of 2018, all teachers were trained through the official CKH program, and the staff has received updated training each school year. CMS teachers received in-house training in August 2019 and August 2020 (picture). A CKH representative came to CMS in January 2019 to review the program with all staff members. Any teacher who is new to CMS goes through the official training as well. By adding design thinking to our school's CKH program, this program focuses on our STEM initiatives of "empathize" and "clarify." The process teaches teachers and students to empathize with one another as a form of relationship building. During the official and in-house trainings, teachers are trained and encouraged to use the EXCEL model with students to engage with our students. Teachers and administrators are also trained extensively in the creation and use of social contracts as a way to create empathy and guide classrooms and meetings. As a way to clarify expectations and behaviors, teachers are trained in "The 4 Questions" to help students understand their behavior and how to correct that behavior in the classroom. CMS administration continues the training and focuses on STEM initiatives with the CKH program at each faculty meeting by reviewing different CKH and STEM initiatives to keep these at the forefront of teacher's plans. We also use CKH's "Leadworthy Moments" to teach character building and problem-solving to students as part of our STEM initiatives. Teacher leaders received training through CKH in 2020. These lessons are taught to all students once a week where teachers present the lesson and engage in problem-solving and reflection with the students. During the 2020-2021 school year, CMS applied to be a National Showcase School for Capturing Kids' Hearts, but at the time of this application, results had not been released yet.

All CMS teachers have also been extensively trained on the BLADE (Blended Learning and Digital Enhancement) program that our district rolled out in the 2017-2018 school year. The BLADE program focuses on teaching and learning with technology in the classroom and at home. Our school went 1:1 with students taking home devices in 2017/2018, which allowed for the revolution of PBLs, design thinking, and classroom lessons. Teachers received extensive

training in best practices for technology integration and design thinking during both district-required PD days and through monthly “Tech Tuesday” job-embedded training (covered in a later section). Through the use of technology in our classrooms, students are able to empathize, clarify, generate, create, and test no matter what subject they are in.

Writing gives students the opportunity to problem-solve and analyze any number of real-life scenarios, especially through our school-wide writing initiative coupled with PBLs and design thinking. In 2018-2019, CMS overhauled the master schedule to add a writing class for every student. All CMS teachers were trained in the Lucy Calkins Writer’s Workshop method in August 2018, and CMS implemented writing across all curriculum areas and in PBLs. Teachers received more training on the writing initiative in August 2019, and training options included writing in PBLs and real-life connections through writing. Out of these trainings and initiatives, Raider Times, our school newspaper, was born. Created and published entirely by students, Raider Times allows students to utilize all CMS STEM initiatives, with focus on exploring and creation. Faculty sponsors work with the students each day, using their writing training to in turn teach the students. Our students in RaiderTV, our student morning broadcast, also create their own scripts and segments. In 2019-2020, students were on air each morning presenting their projects each day. Because of Covid, they moved to online creation only for the 2020-2021 school year and did not do live broadcasts.

Unique Professional Development Goals & Personalized Professional Learning

Each time a CMS teacher is observed using the TEAM rubric, they engage in a formal discussion with the observer after the observation. Part of the meeting dictates that the teacher and observer agree upon an area of refinement, or an area in which the teacher can improve upon. This area of refinement is where a teacher can focus his/her professional learning to improve in that area. The observer and the teacher complete a TEAM rubric form provided by the state with the area of refinement and reflection. CMS Administrators also ask teachers to create goals for themselves and share it with the faculty throughout the year. These goals are revisited during faculty meetings as well.

Professional development for CMS teachers is done in both small and large groups, and teachers are often given the ability to personalize their learning through choices in professional development or through attending outside PDs. As evidenced below, many teachers choose to attend and present at different events that meet their individualized professional development goals. Teachers are encouraged to participate in individualized PD by our CMS administration who assists with funding, substitutes, and other resources to allow teachers to attend PDs of their choosing.

Trainings attended by or presented by individual faculty members:

Professional Development	Date(s)	Teacher(s)	Evidence

Robotics for Middle Grades (4-8) Training at UTC	June 17-21, 2019	Valerie Helmstetter (8th Math) and Ali Creel (Special Services)	Photo of 3 CMS teachers Creel Certificate
Partners in Education TN State SPED Conference	January 29-31, 2019	Dr. Chris Thomas (attendee)	Certificate
Partners in Education TN State SPED Conference	January 28-30, 2020	Stephanie Pirkle- 6th AP (presenter) and Dr. Thomas, Special Services Coordinator (attendee)	4 C's Summer STEM Camp presentation Thomas Certificate
Introduction to Design Thinking by TSIN	January 4, 2020	CCS STEM Leadership Team (13 CMS Staff)	Attendee List Presentation Used District Schedule
TDOE STEM101 Certification Training	August 6, 2020	Hannah Medema (CTE) and Derek Morris (CTE)	Medema Certificate Morris Certificate
TN STEM Innovation Summit	May 14-15, 2019	Hannah Medema (CTE) and Derek Morris (CTE)	Pictures/Confirmation
Tennessee Valley Authority (TVA) Children's Energy Workshop	December 2020	Christina Melton (6th science)	Confirmation Email
Association for Middle Level Education	November 2019	Presenters- Emily Raper, Terry Esquinance, Ashley Keith, Cana Kirksey, Angela Wright, Dr. Leneda Laing Attendees- Sheila Jones, Cecily Williams, Ed Fickley	- Raper Presenter Confirmation -50 Nifty Tech Tools for the Blended Learning Classroom -Esquinance Presenter Confirmation -Keith Presenter Confirmation - Meet in the Middle: Building Relationships that Meet the Needs of Middle School Students -Reading, Research, and Revelations: Student Voice and Community Engagement

			-Wright Presenter Confirmation
Association for Middle Level Education	October 2020	Presenters - Emily Buckner, Kristen Early, Emily Raper Attendee- Dr. Leneda Laing	- 12 Tips n' Tricks for the Blended Learning Classroom -Raper Confirmation -Buckner Confirmation -Early Confirmation -15 Activities in 15 Minutes to Revive the FUN in Your Classroom!
Screencastify Genius Certification	January 2020	E. Raper, R. Williams, A. Pemberton, K. Early, A. Denton, C. Bolanos, H. Medema, K. Kyle, K. McCraw, S. Jones, E. Vermillion, H. White, T. Esquinance	Confirmation Email
Google Educator Certification	June 2020	Kristen Early	Confirmation Email
TASL Virtual Conference	September 2020	Grace Dyrek	Certificate of Attendance
National Council for Teachers of Mathematics	October 2019	Ryan Swartzentruber, Valerie Helmstatter, Eric Stiles	Certificate of Attendance

Observation of Colleagues & Reflection

Cleveland Middle School has a long-standing tradition of teacher observation and collaboration within our faculty. Prior to the 2018-2019 school year, faculty observations were handled by the school's BLADE facilitator, who arranged for colleagues to visit one another's classroom and engage in discourse following the observation. During the 2019-2020 school year, a team formalized that practice into "TIC TOC," a fun play on the popular app, which stands for "teachers in classrooms, teachers observing classrooms." Teachers use a signup sheet through their grade-level representative to visit the classroom of another building level teacher, and following the visit, a formal reflection worksheet is completed. This sheet is shared with the teacher who was observed, and the colleagues discuss the observation during a meeting before, during, or after school.

Unfortunately, we were not able to do TIC TOC the same way in 2020-2021 because of COVID guidelines. As a result, we created a school-wide document with each teacher's Google

Classroom or Canvas class code. Teachers are encouraged to attend online classes to observe their colleagues in a digital setting and complete the reflection process digitally as well. The reflection sheet is the same as above.

CMS also has a new teacher mentor program which pairs each new teacher in the building with a current, model educator in the building. Among other requirements, the teacher who is new to CMS is expected to visit 3 (or more) classrooms and engage in formal reflection with their mentor teacher.

With the addition of a virtual school to our district in the 2020-2021 school year, we were able to add a new layer of teacher observation with our virtual teachers. Because these teachers had more flexibility within their schedule than our in-person teachers, they were able to visit one another's classrooms (both in person and virtually) to observe best practices in virtual teaching. One of our classrooms was turned into a virtual school instructional area, where any virtual teacher could come and teach their class. In this classroom, there were other virtual teachers available to observe the lesson and then work through reflection and any questions as a team. Teachers wishing to observe could also come to the classroom and watch others teach to gain skills in virtual teaching.

Job-Embedded PD

The CMS administration understands the need for job-embedded PD, and have focused on ensuring that our PD is meaningful and applicable within each classroom. Our teachers participate in student learning teams (SLTs), also known as PLC's, in which the teachers meet every other week (2019-2020) or monthly (2020-2021) during their planning to discuss student learning. These meetings include a focus on state standards and the way in which the standards are taught. These meetings are led by a member of the CMS administration team, and the teachers are expected to discuss classroom data, PBLs and lesson plans, reflection from previous lessons, and participate in development with any articles/videos from the CMS administration. During the 2019-2020 school year, the focus was on PLCs and the PLC model through the book *Learning by Doing*. For the 2020-2021 school year, videos on project based learning were used for discussion and training during SLT time.

Once a month, CMS teachers meet for "Tech Mastery Monday" or "Tech Tuesday" a PD session led by the CMS BLADE (Blended Learning and Digital Enhancement) Facilitator. These sessions focus on the successful implementation of technology to improve student learning. Teachers collaborate with their grade-level colleagues as well as their subject-specific teachers to discuss and plan PBLs, assessments, and student-creations involving technology in the classroom.

All certified staff at CMS are required to complete 6 hours of professional development outside of the school day. Cleveland City Schools offers a wide array of opportunities for teachers to choose from. A website from the district gives FAQs and information for teachers regarding the

required PD hours. Teachers are able to choose the PD that best fits their individual needs and/or their personal PD plan and the needs of their students.

Teach Like A Pirate
Over the years, Cleveland City School District has invited many distinguished guests to host workshops or offer professional Development for our teaching staff. Dave Burgess, author of the New York Times Bestseller, Teach Like a Pirate provided a memorable keynote address that was high energy, interactive and entertaining, the ultimate professional development experience. With a unique combination of magic and humor, he reignited our teacher's passion for the education profession. His premise is simple, "Pirates are daring, adventurous, and willing to sail into uncharted waters with no guarantees of success." Teachers should use their willingness to experiment and try new things as inspiration for creating powerful STEM learning experiences.

Ron Clark: Successful Philosophy & Strategies
In Atlanta, Georgia the Ron Clark Academy [RCA], founded in 2007 by an innovative educator, an highly acclaimed, nonprofit middle school has created a loving, dynamic learning environment that promotes academic excellence and fosters leadership in students that represent various socio-economic and academic backgrounds and has made an impact on our teachers and administrators who have taken field trips to Atlanta to spend the day and see for themselves a transformed learning environment that promotes engagement and curiosity important to creating STEM-based lessons for our students.

Externships/Mentorships with Higher Education & Industry

Cleveland Middle school works closely with multiple higher education institutions in our area, and our relationships with industry partners are excellent as well. One of the biggest partnerships we have with Lee University, Cleveland State Community College, and the University of Tennessee at Chattanooga is student teachers/interns from their teacher education programs. We hosted 22 student interns (and their university supervisors) over the past two years, in addition to CMS teachers guest speaking, visiting, or full-time lecturing at Lee University.

Raider Times began its relationship with Lee University's School of Arts and Communication during the 2019-2020 school year. Each semester Lee University hosts the Raider Times digital newspaper staff to participate in several on-campus seminars and digital training sessions which are specifically designed and tailored for raidertimes.org. Lee University has gifted Raider Times with professional-level cameras and digital equipment as well as other items to encourage a quality digital newspaper format at the middle-school level. Cleveland Middle School also works on-site with the Lee University's digital newspaper, which is called the Lee Clarion. Students from both schools have worked closely together to engage in professional learning and future careers in leadership, communication, digital media, and writing. Raider Times also works with community sponsors Shane's Rib Shack, Lee University- Office of the

President, Horace Mann Insurance, Dr. David Miolen, DDS, Cafe Roma, LJ Consulting, CMS Raider TV, and The Vein Institute of Southern Surgical Arts.

Once a semester, Cleveland Middle School's Career and Technical Education (CTE) department hosts an advisory meeting for parents and industry partners. The advisory board consists of parents, former teachers, people from local businesses (health care, assisted living, post secondary education, woodworking, marketing, engineering, etc.). These meetings are designed to ensure that CMS's CTE program boasts the most up-to-date information regarding industry. It allows local partners to share information with all CTE teachers and parents to ensure that students are given the best curriculum possible in their CTE classes.

Many individual teachers or classes work with local partners to bring the best curriculum to CMS students. Mrs. Melton's sixth grade science class partnered with TVA and Cleveland Utilities to bring an interactive workshop to our students working virtually at home on Friday, January 22, 2020. Members from Cleveland High School's robotics club also come each semester to speak to 8th grade STEM academy students. RockBridge Church has provided members of their media team to work with and train RaiderTV students in the art of live broadcast. Mrs. Bunch's special services class focuses on life skills, and they partner with the Salvation Army each year to fill and then carry filled bags to cars. The Salvation Army works with the students to teach and then practice conversation skills with patrons.

The following events were planned for either spring 2020 or fall 2020 but were cancelled due to COVID-19. In Coach Morris's engineering tech class, engineering students from Tennessee Tech come to demonstrate hands-on PBL learning for CMS students. Mix 104.1's Steve Hartline was scheduled to speak to RaiderTV students about industry performance. Each year, CTE courses conduct mock interviews for 8th graders during their career unit. CMS hosted professionals from Cleveland's Chamber of Commerce, Temp agencies, Lee University, Wacker, Olin, and other businesses to engage in a 5 minute mock interview with our students. CMS also hosts Junior Achievement professionals to work with 7th and 8th grade students. Each spring, 7th grade students complete "JA in a Day," a program hosted by Junior Achievement. The students are taught 6 different modules by a local business professional dealing with college and career readiness. CMS's 8th grade hosts Junior Achievement for *JA Economics for Success* gives students the information needed to build strong personal finances, a cornerstone to a happy, secure life. Students learn the importance of exploring career options based on their skills, interests, and values. They also learn about spending money within a budget; saving and investing wisely; and using credit cautiously. The local paper ran an article detailing the CMS program here: https://clevelandbanner.com/stories/ja-gives-reality-check,49640 Reality Check is a Teen Reality Fair where middle school students role-play a 25-year-old who has to make decisions about money based on his or her chosen job. Students are given a salary, correlating to the job he or she chose. Each student visits up to 16 booths, including transportation, housing, education and training, entertainment, food and nutrition, clothing, furniture, insurance, loan center, savings and retirement, charitable giving and banking, and make decisions on how to

budget one's monthly salary. This has happened for many years, with JA spending 2,863 hours with CMS students overall.

Attribute 3.2 Designing PBLs

Teachers collaborate in professional development to custom design project based learning with STEM Design Thinking. The PBLs embed state standards and 21st Century Skills. They include possibilities for integrated content, community/industry partnerships, connections with postsecondary education, and digital learning. Above all, PBLs provide relevant learning and problem solving for the school's student population.

The Cleveland Middle School faculty participated in professional development focused on PBLs. One of our own teachers presented on understanding the connection between PBL and STEM Design Thinking. First, teachers brainstormed PBL lessons they have taught. Then, they developed self-selected groups of grade-level teams, common-content teams or cross-curricular teams. In these groups they used the TSIN PBL template. Some groups used the template to trouble-shoot issues with PBLs they have already conducted and refine those PBLs. Other groups used previous PBL ideas to springboard development of new PBLs. Finally, PBL groups peer reviewed each other's templates. Some of the PBLs developed from this professional development are linked below:

CMS PBL CHART

Higher Education and Community Partnerships

One of Cleveland Middle School's showcase examples of a student-led, ongoing project-based learning and STEM Design Thinking experience is Raider Times. Raider Times is a school newspaper where the students brainstorm, design, write and edit the product. Raider Times began its relationship with Lee University's School of Arts and Communication during the 2019-2020 school year. Each semester Lee University hosts the Raider Times digital newspaper staff to participate in several on-campus seminars and digital training sessions which are specifically designed and tailored for raidertimes.org. Lee University has gifted Raider Times with professional-level cameras and digital equipment as well as other items to encourage a quality digital newspaper format at the middle-school level. Cleveland Middle School also works on-site with the Lee University's digital newspaper, which is called the Lee Clarion. Students from both schools have worked closely together to engage in professional learning and future careers in leadership, communication, digital media, and writing.

As an example of project-based learning and community partnership, our Extended Resource Class, also known as CapableBunch, partners each November to sort, fold, label, and bundle bags for the Salvation Army. This is an event that has occurred 3 years running and has already been planned for next year. During non-pandemic times students were assisted in carrying filled bags to cars and practicing conversation skills with the recipients. Photos of CapableBunch

Inclusion and Peer Review of Learning Standards and 21st Century Learning Skills

In the first section, examples were given of PBL collaboration by our faculty. Teachers also participated in peer reviewing these PBLs and troubleshooting any issues for their fellow faculty members. Learning focuses and connected state standards are in the PBLs shared above. During the peer review, teachers looked for evidence of the 21st Century Learning Skills and gave their fellow teachers ideas to consider.

Peer Reviews of 21st Century Skills in PBLs

Additional Ways CMS supports the use of PBLs and Collaboration in STEM modules

- Teachers participate in Professional Learning Communities or Student Learning Teams by content area. Teachers trouble-shoot instructional issues within their content area and use PBLs to problem-solve these issues.
- Association for Middle Level Education presentation- Kristen Early and Emily Buckner, two of our sixth grade teachers, presented at the AMLE conference during the 2019-2020 school year. This presentation showed teachers how to "Breath Life Into Your Lessons." The hands-on techniques shown in this presentation are used by teachers throughout our school.
  AMLE presentation (Early and Buckner)
- Hannah Medema and Derek Morris (CTE teachers) participated in STEM Teacher Training (State of TN, 8/6/2020) and TN STEM Innovation Summit (5/14/19-5/15/19). They also participate in regular system-wide CTE meetings.

Achievement

Attribute 4.1 Performance Assessments

Teachers value the importance of formative and summative assessments. Data acquired from these assessments impact instructional plans. Teachers utilize TNReady and iReady data to make decisions on STEM programs.

Starting in 6th grade, students are offered honors courses in math and ELA. Placement in honors and advanced classes is determined by TNReady data projections. These courses are designed to increase enrichment, provide for enhanced project-based learning, as well as promote self-evaluation and goal-setting. In the 7th grade, honors courses are added for science and social studies. Advanced classes are added in the 8th grade along with honors classes to help students prepare for dual enrollment and AP classes in high school. Eighth grade students have the opportunity to take high school classes including Computer Applications (dual-enrollment through Cleveland State Community College), Algebra I, and Physical Science.

The Design Thinking Model also extends to include special populations. Lesson plans in gifted, remediated, and leveled courses consistently include opportunities for student reflection, problem solving, and innovation. Pre and post assessments are given quarterly and annually for SPED, RTI, and ESL to measure student growth. Also, CMS offers robust related arts and CTE courses that use portfolios to assess student mastery and understanding.

Data are obtained through the Teacher Educator Acceleration Model evaluations in the areas of Assessment, Questioning, Thinking, and Problem Solving. Teacher observation scores increased in all four indicators over the last several years. In addition, our overall effectiveness score for the school was a Level 5 in 2018 and 2019.

Collections of student personal work via Project-Based lesson

Portfolios that allow students to portray their learning via collections of personal work:
S.P.E.D. Project-Based Lesson Samples
Student Exemplar 1
Student Exemplar 2
Student Exemplar 3
Group projects that require planning, research, discussion/debate, and presentations:
S.P.E.D. Project-Based Lesson
S.P.E.D. Project-Based Lesson
E.S.L STEM Lesson
Student Participation Images
E.S.L STEM Lesson
Students Participation Images

Written products that require students to analyze and interpret date, construct explanations, and design solutions, and engage in argument from evidence:
Project-Based Written Products
Project-Based Written Products
Project-Based Written Products
Student Product Images

Experimentation that requires students illustrate their understanding of STEP concepts:

E.S.L. STEM Group Participation Videos

Authentic assessments on products using rubrics that focus on solving problems using real-world applications:
Road Trip
Student Roadtrip

Student demonstrations that reflect mastery of STEM content and procedures:
Student Egg Drop Example
Fossil Lesson Dirt Cake 8th grade

Culminating project that integrated all the STEM content areas:
E.S.L Culminating Project
E.S.L Culminating Project
Student Product Image

Attribute 4.2 Accountability (Data)

Data-driven instruction is a core component of the curriculum at Cleveland Middle School (CMS). Along with using the state TNReady tests, core academic teachers are required to administer at least one formative and one summative assessment per week. Social studies and science teachers utilize Study Island, which is a standards-based assessment program, to evaluate student progress and mastery while ELA and math teachers implement iReady. Teachers harvest data from these assessments to adjust instruction and measure student growth. Students who qualify for additional services and interventions such as SPED, RTI, or ESL are monitored within those programs and receive regular conferencing. Those students who do not qualify for intervention programs but who do not show regular growth on formative assessments are assigned to small groups to receive reteaching, retesting, or counseling, as appropriate. Each student at CMS is recognized for their growth and achievement through the Raider Way Rewards Program and each student who needs additional support is identified and placed within the RED/WIN program, through their Individual Education Plans (IEPs), their 504s, or their Individual Language Plans (ILPs).

CMS has common planning time for each grade level that allows teachers to plan vertically by subject and cross-curricularly. The sixth and seventh grades are organized by teams while the eighth grade is departmentalized in order to facilitate a smoother transition to the high school. Each core subject has a teacher leader to help facilitate professional development. CMS provides one-to-one MacBooks for all students with a Blended Learning and Digital Enhancement (BLADE) facilitator who provides training for integrated tech-based instruction and assessments across all subjects.

Partnerships will be vital to sustain our STEM initiative. The key to establishing and building such relationships is to provide as many touch points as possible between the school and its community partners. Mentoring and mutually beneficial exchanges also provide opportunities for our students to experience S.T.E.A.M. related careers and to personally reap the rewards of volunteerism and service.

Community and Industry Partnerships

As the only public middle school that serves the City of Cleveland we have a wealth of expertise to call upon. Our students are part of the larger community and it is through their parents and extended families that our reach is extended and strengthened.

Attribute 5.1 Partners Support Instruction

Partnerships will be vital to sustain our STEM initiative. The key to establishing and building such relationships is to provide as many touch points as possible between the school and its community partners. Mentoring and mutually beneficial exchanges also provide opportunities for our students to experience STEM-related careers and to personally reap the rewards of volunteerism and service learning.

COMMUNITY RESOURCES AND PROGRAMS…

- Community Speakers
  Example: Tennessee Technical University and Mix 104.1 Radio
  Our CTE Engineering teacher works with TTU to bring university engineering students to his classroom for demonstrations and simulations of engineering in real-world situations.This connectivity to a post-secondary institution permits students to obtain a greater understanding of career exploration and its possibilities in the field of engineering. Our local radio station visits with our communication students to stimulate interest in all aspects of radio. These scheduled events were cancelled this year due to Covid but will be rescheduled as soon as we are able.
- BOYS & GIRLS CLUB and YMCA Aftercare
  For many of our latch-key students, having a safe place to go after school is so important. The Boys and Girls Club/YMCA Aftercare programs in our community offers snacks, tutoring, crafts, and games that encourage a sense of belonging. Their Mission is simple, to help put young people on the path to great futures. Their vision is to provide a safe and encouraging place to go during out-of-school time. With a warm and caring staff, they create a positive learning environment to encourage Academic Success; Good Character and Citizenship, and lessons on Healthy Lifestyles, fostering creativity and imagination. Both tutoring programs provide student support in our 1 to 1 device initiative with access to the internet that these students may not have at home.
- LeadWorthy (Capturing Kids Hearts Curriculum)
  Our CMS students experience a "Leadworthy Moment" a mini-lesson weekly which helps to develop critical, life-changing skills, such as taking personal responsibility, expressing themselves well and making good decisions when problems arise. Powered by the Flippen Group, this research-based curriculum includes topics very relevant to the needs of our 21st century students. To foster a sense of community within our student body we have weekly "LeadWorthy Moments" where quotes (frequently from industry/business leaders) are discussed and students answer discussion questions based on reflecting how such sentiments affect how they deal with one another and look to their own promising futures. LeadWorthy Moments provide short exercises designed to help incorporate character-based education into our classrooms.
- 100 Black Men of Bradley County
  This organization has been meeting with our students of color since 2001, every Friday morning. Groups vary from 20 to 30 students who they take on field trips and if the student stays with the organization throughout their secondary school experience, they receive a free laptop and help with tuition to college. Such a framework of successful community business leaders modeling behaviors of achievement, is essential for all students, especially youth of color, who traditionally have been marginalized in learning

standards, school policies, and classroom practices. With guest speakers ranging from Bankers to C.E.O.s of certain local organizations, our students are inspired.

- Reality Check by Junior Achievement of the Ocoee Region
  All of our 8th grade students experienced what it is like to be 25 years old and budget monthly expenses during the Real Life Simulation "Reality Check" sponsored by Junior Achievement and the Cleveland/Bradley County Chamber of Commerce. This event brings together students and community volunteers. In the 2019/2020 school year, JA hosted 409 CMS students during Reality Check and JA Economics for Success. The volunteers spent 2,863 contact hours with our 8th graders in the theater.
- Community Grant Providers & Museum Center at 5IVE Points
  Nothing great happens when you do it alone. Over the years we have had a motivated and dedicated group of individuals that collaborate with our teachers to identify what matters and how to make it happen with the support of community funds provided by generous business partners or extensive exhibits and guest speakers. Inspired and assisted by grants our school has been able to provide yearly musicals, create mosaics of lasting beauty, enjoy lively storytellers, purchase VR equipment for virtual field trips around the world, and grow an online collection for the district's digital library and add a STEM mobile lab. The Allied Arts Council and the Bradley Cleveland Public Education Foundation have helped teachers to shape the future of their communities by enhancing the classroom experience. The Museum at 5ive Points offers the Story of our Region, its artifacts and exhibits have helped bring history to life for our students. The collective wisdom of our community donors and docents have been a mainstay for enriching activities that make the school experience memorable and effective. Their support creates a shared sense of belonging and has ultimately strengthened the social, cultural vibrancy of our school.
- PTO: Family and Community Engagement
  Cleveland Middle School has an active Parent Teacher Organization (PTO) that is invested in the academic achievement of the students, the school's culture, and climate. It provides mini-grants to faculty for instruction providing an opportunity for teachers to create STEM lessons and purchase needed materials.

Attribute 5.2 Work-based Learning

Once CMS students leave our school they continue their education at CHS [Cleveland High School] where there is a robust, cutting-edge, rigorous and relevant Career and Technical Education Program. It consists of eleven nationally recognized career clusters whose ultimate goal is to prepare them for meaningful post-secondary college and/or career pathways. CMS faculty work towards preparing our students by providing learning opportunities and skill development for high school. WBL is not available in a middle school setting, however we have CTE teachers with WBL certification.

- Tennessee Technical University
  Our CTE Engineering teacher works with TTU to bring university engineering students to his classroom for demonstrations and simulations of engineering in real-world

situations.This connectivity to a post-secondary institution permits students to obtain a greater understanding of career exploration and its possibilities in the field of engineering.

- Cleveland State Community College Career Fair
  8th grade CMS students go on a field trip to CCSC for information about local industry job prospects and training available through CCSC, Cleveland High School, Walker Valley High School and Bradley High School CTE programs. Students are able to speak to individuals currently engaged in obtaining their training through one of the above stated programs or working in a specific industry such as law enforcement or construction.
- Cleveland High School
  8th grade students participate in a field trip to the high school to investigate the CTE curriculum. This is traditionally completed in the springtime prior to high school course selection. They are invited to attend a high school orientation in the evening where they can visit CTE classrooms and ask questions.
- Mock Interview for CTE 8th grade Students
  CMS hosted a mock interview for all of our 8th grade CTE students. The students had 4 days to prep by rotating through the CTE classes learning about soft skills and work ethic, resume writing, and interview skills. Many different members from community businesses, colleges, Better Business Bureau, and police officers to interview our students and give feedback for them. This event was not only eye-opening for our students but also received many positive comments from the individuals interviewing about the high level of some of our students here at CMS.
- CMS Career Explorations
  One of the courses available to our students during their Related Arts period is Career Explorations. In this course, students research possible career goals and the requirements needed for attainment. Students investigate post-secondary career opportunities in terms of educational requirements, specifics regarding what does the job actually do and which industries provide employment.
- CMS Community Best Partners through the Bradley/Cleveland Chamber of Commerce
  In the City of Cleveland, we have a special rapport with our "Best Partners" . These are businesses and organizations that generously support many of our outreach activities, provide guest speakers, academic programs and hold fundraising events that help with our school's warm culture and spirit. These organizations are the following: First Tennessee Bank; CHI Memorial Convenient Care facility; Cleveland Country Club; Westwood Baptist Church; and State Farm Insurance.

Service Learning

CMS, as an entire school, participates in various service learning experiences that are student-directed through curricular and extracurricular opportunities. One class participated in a service project with the Salvation Army to fill and carry bags in an effort to teach conversational skills to its class members. The Interact Club organizes our Veteran's Day program where students and veterans create a positive connection to our military organizations. The CMS Student Council yearly focuses on a school-wide effort to provide families in need Thanksgiving meals and

groceries. This past year feeding over 45 families. The CMS Beta Club adopts nursing home recipients with small gifts and cards at Christmas and Valentine's Day. It also has a community service requirement of its members to obtain 8 hours of volunteering through school, church, scouts or personally each year. Many members exceeded this total with over 2000 hours earned total in one year of volunteering.

Citizen Science Projects
At this time, our science classes do not have an ongoing partnership for collecting data. As we move forward in our pursuit of pursuing a more STEM-centric education for our students, this is an identified area of focus to look for areas of opportunity.

PBL Learning Units
CMS faculty have informally been creating and writing PBL lessons individually or with content areas for numerous years. It is only that as a faculty/STEM Leadership Team that we began to formally recognize the learning strategies that our classroom teachers engage student learning. As our leadership team began to organize its evidence for STEM Designation, it became obvious that PBL instruction is at the heart of CMS instructional strategies. In pursuit of this goal, we have begun to implement PBL PD and support and encourage the continuation of this instructional strategy.

CMS S.T.E.M. Design Thinking Model
CMS PBL CHART

Other Community Partnerships

Boys & Girls Club and YMCA Aftercare
For many of our latch-key students, having a safe place to go after school is so important. The Boys and Girls Club/YMCA Aftercare programs in our community offers snacks, tutoring, crafts, and games that encourage a sense of belonging. Their Mission is simple, to help put young people on the path to great futures. Their vision is to provide a safe and encouraging place to go during out-of-school time. With a warm and caring staff, they create a positive learning environment to encourage Academic Success; Good Character and Citizenship, and lessons on Healthy Lifestyles, fostering creativity and imagination. Both tutoring programs provide student support in our 1 to 1 device initiative with access to the internet that these students may not have at home.

Capturing Kids Heart Initiative
"If you have a child's heart, you have their mind" is the core belief of Flip Flippen, founder and chairman of the Flippen Group, NY Times best-selling author, and nationally-recognized speaker. For nearly a decade now our school district has embraced this approach, applying the behavioral skills and processes taught by the Flippen Group which has led to dramatic transformations in our relationships with our students. Nearly 70 percent of our students qualify for free and reduced lunch. So, when they arrive at school many are stressed from home, from hunger, abuse and loneliness. At C.M.S. We have to build a school culture that is relational and

is sensitive to the social-emotional needs of our students, helping them feel valued and connected, so they are ready to learn our STEM content. Being able to stretch their reasoning requires our students to trust and take a leap of faith as they develop process skills. Examples of how it is used daily at CMS include the following:

- Greet Students Daily.
    - Although we are not able due to COVID-19 concerns to shake hands at the door, we still greet students at the door.
    - Asking a fun entrance question at the door like "Would you rather have chocolate candy or Sour Patch candy."
    - Using music to add energy to your classroom.
    - Using creative greetings like an elbow or foot "bumps" to greet.
- Manage the Message.
    - At CMS we set a positive tone when helping everyone to understand the community health rules. Instead of "Wear your mask," try "Be empowered! Do your part to help keep yourself and others healthy. Wear your masks. We are better together!" This sends the same message but also emphasizes community, connection, and relationships.
- Continue Positive Class Routines.
    - Start class with "Good Things" and end with a meaningful message to Launch. Intentionally incorporate affirmations and empower students to be classroom raters and affirmers.
- Recognize and Celebrate Students Often.
    - Seek out frequent opportunities to affirm and celebrate student success inside and outside of school. An example would be our recent Kindness Coins Competition.
- Listen more, Talk Less.
    - At CMS we engage our students in more conversation. Start by simply asking more open-ended questions and then celebrating and affirming their effort, thinking, and learning. We know that whoever does the talking does the learning!