

## **GLOSSARY OF EDUCATION TERMS**

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The glossary is a dynamic document shared by the district's leadership team. Its purpose is to provide our community with explanations of educational terms that are frequently used in documents, presentations, and discussions.

The Core Instructional Practices are described beginning on page 12.

Some terms, such as those with \* have been copied from <http://edglossary.org/> and <http://www.ccrscenter.org/>

### **Budget**

Allocation – An expenditure limit established for an organizational unit or function.

Appropriation – Funding assigned to a specific agency or program to make expenditures/incur obligations for a specified purpose and period of time. The Board of Aldermen appropriate specific amounts to each department in their annual budget.

Carryover Appropriations - The balance available for expenditure in years subsequent to the year of enactment.

Encumbrance - An amount set aside to pay for goods or services which have been ordered by means of contracts, salary commitments, etc., but not yet received.

Line-items - A sub-classification of expenditures based on type of goods or services. The line-items used in a budget are determined by the organization, and they may be broad or finely-grained.

Required Local Contribution - Amount that a municipality is required to pay towards the school district's Foundation Budget. This figure is based on the prior year required contribution and includes some transition factors, so that the shift toward the target level occurs over a period of several years.

Revenues – Money that comes into the school district.

Revolving Fund – An account that is allowed to maintain a balance from one fiscal year to the next. This flexibility allows a community to raise revenues from a specific service and use those revenues to support the service. Revolving funds are closely regulated by state law as to purpose and amount.

Salaries – Wages for employees, including teachers, drivers, secretaries, administrators etc.

Special Education Tuition – When a district is not able to provide the appropriate education to a student, that student may attend a school designed to provide that level of education. The need for this outside school is determined by the IEP (Individualized Education Plan) for the student. These programs may be through a Collaborative such as SEEM or in individual state approved private special education schools.

Title I - federal funding to schools based on poverty levels. The funding is meant to help students who are at risk of falling behind academically by providing supplemental instruction.

Unfunded Mandate - A requirement imposed by law, regulation, or order without underlying financial support, such that districts must find funding sources within their own budgets to meet the requirement.

User Charges/Fees - A payment that is collected from the user of a service to help offset the cost of providing the service.

## **Assessment**

Achievement Series - A web based assessment platform that allows for the development and administration of district based assessments.

Assessments - a general term that refers to the process of gaining information about student learning. The instrument of the assessment is the particular work or test being evaluated.

Benchmarks - The standard by which progress is measured.

Benchmark Assessments - An assessment administered at a specific point in the school year in which the results are measured against established standards or benchmarks.

For example, a beginning of year (BOY) assessment is an assessment that used to benchmark a student's performance at the beginning of year in order to measure growth using ensuing assessments. Subsequent assessments for benchmarking are referred to as middle of the year (MOY) assessment and end of year (EOY) assessment.

DIBELS Next- Students in grades K-5 are assessed using DIBELS Next, Dynamic Indicators of Basic Early Literacy Skills Next. DIBELS Next assesses five skills that are necessary for learning to read. Children who learn these skills become good readers. The skills are:

- Phonemic Awareness: Hearing and using sounds in spoken words
- Alphabetic Principle: Knowing the sounds of the letters and sounding out written words
- Accurate and Fluent Reading: Reading stories and other materials easily and quickly with few mistakes
- Vocabulary: Understanding and using a variety of words
- Comprehension: Understanding what is spoken or read

DIBELS consists of seven short individual tests, called subtests. Each DIBELS subtest focuses on a different skill and takes 1 minute to complete. Your child may be given two to five of the DIBELS subtests depending on his or her grade level. Each subtest provides specific benchmarks students must achieve. A score falling at the low risk level indicates the child is on track for success in reading at their grade level. Students scoring at some risk have scores that fall in the mid-range and are in need of some supports to meet grade level goals. At risk scores indicates that additional interventions are needed in order for the student to meet the end of year reading goals.

District Determined Measure (DDM) - District-determined measures (DDMs) are measures of student learning, growth, or achievement that are part of the MA Educator Evaluation Framework. They are common assessments developed by the district to measure student growth as well as curriculum alignment and instructional consistency across a grade or a course. All staff members are required to have multiple DDMs that are used to calculate their impact on student learning.

Evidence Based Selected Response - One of three types of English Language Arts questions on PARCC that combines a selected response question with a second one that asks students to show evidence from the text.

Formative Assessments – Assessment for learning - Taken at varying intervals throughout a course to provide information and feedback that will help improve •the quality of student learning. •the quality of the course and instruction

Mastery - A performance level that implies proficiency has been demonstrated **multiple times** and in **multiple ways** or contexts.

Prose-Constructed Responses - One of three types of English Language Arts questions on PARCC that requires students to write using evidence they have read.

Performance Level - Student results on MCAS and MCAS-Alt tests are assigned one of four performance levels:

*Grades 4-8 and 10* – Advanced, Proficient, Needs Improvement, or Warning/Failing.

*Grade 3 only* - a fourth performance level is Above Proficient.

*MCAS-Alt* - Progressing, Emerging, Awareness, or Portfolio Not Submitted.

Performance Tasks - An assessment in which students are expected to demonstrate their understanding of previously taught content and skills. Performance tasks are often written in the context of real world experiences.

Proficiency - A rating that meets the required level of performance on an assessment that serves as evidence toward advancement.

Progress Monitoring - Interim assessments used to assess if a student has moved closer to the benchmark expectation.

Self-assessment - The process of reflecting on one's strengths and areas of development. Self-assessments are often coupled with goal setting and action planning as part of the new Massachusetts teacher and administrative evaluation protocol.

Student Attendance Rate - Attendance rates are calculated by dividing the total number of days all students attended school by the total number of days all students were enrolled

Student Growth Percentiles (SGP) - Measure change in achievement over time as reported by MCAS. The goal for all groups is to achieve or maintain a median SGP at least one point above the state median. The SGP for each group is also given a rating relative to its own annual target of Above Target, On Target, or Below Target.

Subgroup (also known as "Student Group") - The state reports data for all students in a school or district within eleven student groups: high needs, low income, Limited English Proficient, students with disabilities, multi-race, African

American/Black, Asian, Hawaiian/Pacific Islander, Hispanic or Latino, Native American/Alaskan, or white. A student's test scores are counted toward each group to which the/she belongs.

Summative Assessments - Assessment of learning, generally taken by students at the end of a unit or semester to demonstrate the "sum" of what they have or have not learned.

Technology Enhanced Constructed Response - One of three types of English Language Arts questions on PARCC that uses technology to authentically capture student comprehension of text that have been traditionally difficult to score via multiple choice. Students use technology tools such as dragging and dropping, shading of text, and moving of text.

Open Responses - A type of question that is included on all MCAS tests that requires students to generate a written response in a form of narrative, chart, table, diagram, illustration or graph, as appropriate. Open responses are also used as formative and summative assessments across all subject areas.

## **Teaching and Learning**

21<sup>st</sup> century skills - refers to a broad set of knowledge, skills, work habits, and character traits that are believed—by educators, school reformers, college professors, employers, and others—to be critically important to success in today's world, particularly in collegiate programs and contemporary careers and workplaces.

Academic Support - refer to a wide variety of instructional methods, educational services, or school resources provided to students in the effort to help them [accelerate](#) their learning progress, catch up with their peers, meet [learning standards](#), or generally succeed in school.

Acceleration - A means by which a qualified student may move ahead a grade or move ahead in a content/course sequence based on mastery and ability.

Grade Acceleration

Content-based Acceleration

Accommodations - An alteration of environment, curriculum format, or equipment that allows an individual to allow a student to gain equal access to learning the content and/or complete assigned tasks but that does not substantially change the level, content, or performance criteria. An accommodation changes how the student learns or accesses the curriculum, but does not significantly change the content, instruction, or assessment.

Advanced Placement (AP) - A program that is run by the College Board. AP courses are available to high school students in many subjects that are traditionally offered to a college freshman (Biology, Microeconomics, Calculus). At the end of the course, students take an exam that determines whether or not they will qualify for college credit for the course.

Alternative Academic Opportunities – a broad range of academic, behavioral, and social/emotional interventions designed to increase the academic achievement levels of these students so that they are able meet the Learning Standards and complete their education in a safe learning environment.

Authentic Learning\* - refers to a wide variety of educational and instructional techniques focused on connecting what students are taught in school to real-world issues, problems, and applications.

Between-class Intentional Grouping – Grouping students for a specific purpose with other students from their classroom as well as with other students from other classrooms in their same or different grade level.

Competency-based Learning\* - systems of instruction, [assessment](#), grading, and academic reporting that are based on students demonstrating that they have learned the knowledge and skills they are expected to learn as they progress through their education.

College and Career Readiness - Characteristic of graduating students having the knowledge and skills in English and mathematics necessary to qualify for and succeed in entry level, credit bearing, postsecondary course work without the need for remediation.

Core Instructional Practices - A collection of research-based best practices that form the foundation of instruction. *Please see the chart at the end of the glossary.*

Common Planning Time (CPT) - Any period of time that is scheduled during the school day for multiple teachers or teams of teachers to work collaboratively together.

Competencies\* - A **set** of related skills, knowledge, conceptual understandings, and mindsets that involve the *application or creation* of knowledge and that encompass *subject-specific* as well as *cross-disciplinary* constructs.

Credit by Examination – For a student to receive credit for having completed a course by showing in examination that they have mastered the content, whether or not they have attended the classes.

Criterion Referenced - tests and assessments that are designed to measure student performance against a fixed set of predetermined criteria or learning standards—i.e., concise, written descriptions of what students are expected to know and be able to do at a specific stage of their education.

Curriculum - The means and the materials with which students will interact for the purpose of achieving identified educational outcomes.

Curriculum Frameworks - A set of standards of learning outcomes that defines the content to be learned in terms of what students should know and be able to do. The Massachusetts Department of Elementary and Secondary Education outline Curriculum Frameworks in all content areas.

DICE (Dissect, Illustrate, Calculate, Explain) - A mnemonic used by students to solve math problems. Students begin by dissecting and making sense of the problem. Students then illustrate the problem focused on seeing the relationships between the ideas. The problem is then represented in numbers. Finally, students write their explanation.

Differentiation - A framework for effective teaching that involves providing different students with different avenues to learning (often in the same classroom) in terms of: acquiring content; processing, constructing, or making sense of ideas; and developing teaching materials and assessment measures so that all students within a classroom can learn effectively, regardless of differences in ability.

District Curriculum Accommodation Plan(DCAP) - A plan that is designed to assist administrators and teachers to ensure that all possible efforts have been made to meet students' needs in general education classrooms. It supports teachers in analyzing and accommodating diverse learning styles of all children.

Document-Based Question - The form of text-based question that is used on Advanced Placement History exams. Typically, students are given 3-12 documents, including primary source excerpts, images, maps, charts, and political cartoons, and asked to analyze and synthesize them, and write in response to this analysis.

Dual-enrollment-A program that allows high school students usually juniors and seniors to enroll in college courses for credit prior to graduation.

Flexible groupings - A system of grouping students that are made within/between a classroom or grade level that can be changed depending on specific criteria.

Individualized Education Program (IEP) - When a child qualifies for special education services, the IEP team comprised of the parents and educators creates a written plan to address the student's academic and behavioral needs.

Informational Text - The purpose of informational text is to convey information about a topic. It may include newspaper articles, magazines, biographies, websites, non-fiction, videos and many more.

Intentional Grouping - to place students in groups based on some criteria of their learning. Students can be intentionally placed in homogenous or heterogeneous groups according to purpose.

Learning Experience\* - refers to any interaction, course, program, or other experience in which learning takes place, whether it occurs in traditional academic settings (schools, classrooms) or nontraditional settings (outside-of-school locations, outdoor environments), or whether it includes traditional educational interactions (students learning from teachers and professors) or nontraditional interactions (students learning through games and interactive software applications).

Learning Objectives\* – A brief statement that conveys what students are expected to learn throughout the school year, course, lesson, or class period

Learning Pathways\* – learning pathway refers to the specific courses, academic programs, and learning experiences that individual students complete as they progress in their education toward graduation. Learning pathways typically refers to the various courses, programs, and learning opportunities offered by schools, community organizations, or local businesses that allow students to earn academic credit and satisfy graduation requirements.

Learning Standards\* - Learning standards are concise, written descriptions of what students are expected to know and be able to do at a specific stage of their education. Learning standards describe educational objectives—i.e., what students

should have learned by the end of a course, grade level, or grade span—but they do not describe any particular teaching practice, [curriculum](#), or [assessment](#) method

Literary Text - A literary text is primarily fiction including short stories, fables, myths, folktales, novels, drama, poetry and more.

Literature Circles - An instructional strategy used in English Language Arts where small-groups of students independently or teacher-led read, discuss, and write about the same text. Literature Circles provide a way for students to engage in critical thinking and reflection as they read, discuss, and respond to books

Modifications - A significant change in the curriculum or assessment that gives students an opportunity to participate meaningfully and productively along with the other students in the classroom. Modifications can only be made if required and agreed upon by a student's Individualized Education Program (IEP).

Multi-Tiered System of Supports (MTSS) - An evidenced based framework for instruction that uses data-based problem solving to provide a range of supports, interventions, and extension that is responsive to the academic and non-academic needs of **all** students. including students with disabilities, English language learners, and students who are academically advanced.

Personalized Learning\* - The modification of instruction, courses, and learning environments by or for learners with the goal of meeting their different learning needs

Positive Behavior Intervention System (PBIS) - A proactive approach to establishing the behavioral and social supports needed for all students in a school to achieve social, emotional, and academic success.

Professional Development - The continuous process of acquiring new knowledge and skills that relate to one's profession, job responsibilities, or work environment. Professional developed is designed to advance the collective goals of the district and with the intent of improving the academic outcomes for students. An annual district professional development plan is presented to the School Committee each year for review and consideration based on stakeholder feedback.

Proficiency\* - A high degree of competence or skill demonstrated by consistently superior performance measured against established benchmarks or standards.

Proficiency-based learning\* - refers to systems of instruction, [assessment](#), grading, and academic reporting that are based on students demonstrating that they have learned the knowledge and skills they are expected to learn as they progress through their education.

Project Based Learning - A teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to a complex question, problem, or challenge.

Reciprocal Teaching - A research based instructional strategy used by teachers and students involving four key comprehension strategies of predicting, summarizing, clarifying, and asking questions. Students read in partners, small groups, or teacher guided groups.

Rigor\* - widely used by educators to describe instruction, schoolwork, [learning experiences](#), and educational expectations that are academically, intellectually, and personally challenging.

Standards-Based - A system of academic reporting based on students' demonstration of the mastery of the knowledge and skills they are expected to learn as they advance through their education

Text-Based Questions - Questions that require students to look back into the text to find specific evidence.

Text Complexity - Students read a wide range of text that are not too easy and not too hard. When students read more challenging text, the teacher supports their understanding of the text through close readings and text-based questions.

Understanding by Design (UbD) - A tool for curriculum mapping used by groups of teachers that focuses on teaching for understanding. The mapping process requires teachers to clarify student learning goals, devise assessments of students' understanding, and craft effective and engaging learning activities.

Universal Design for Learning (UdL) - A framework of principles for curriculum development that gives all individuals equal opportunities to learn. UDL addresses the “what,” the “how,” and the “why” of learning.

Within-class Intentional Grouping – Grouping students for a specific purpose only with other students from their classroom.

### **Technology**

Aspen - The district's student information management system. All districts are required to have a SIS that can exchange information directly with the Department of Elementary and Secondary Education's databases. Aspen has a number of functions for record keeping and communication including attendance and discipline records, grades, teacher pages, calendar, etc.

Blended Learning - Blended learning is an instructional approach in which a student learns through a combination of classroom instruction and through content and instruction provided digitally and online.

## Elementary Literacy Core Instructional Practices

<b>Core Instructional Practice</b>	<b>What Is It?</b>	<b>Why Is It Important?</b>
<b>Partner Reading</b>	Students sit with a partner and take turns reading a passage or book. Students can take turns reading sentence by sentence, paragraph by paragraph, or page by page. The goal is for 30 minutes of partner reading everyday, which means students are reading 15 each day. Students can also engage in talk about their reading and also support in modeling fluency for each other.	Partner reading adds accountability to reading. Students are less likely to be off task when two students are reading. Partner reading is an excellent intervention to develop reading fluency.
<b>Writing in Response to Text</b>	Students write a response to what they have read. The response could be persuasive, narrative, or informational. The response could be open ended or be text-based requiring use of the text and evidence.	Writing is thinking down on paper. Writing requires the student to formulate their thinking. It is also a means to support the assessment of comprehension.
<b>Text Based Questioning</b>	Text based questions are questions that focus on gathering evidence from the text. Students look at the main idea and details, author's purpose, vocabulary, and forming opinions.	Text based questions require a close reading. They require students to gather evidence from the text to support and defend their answers. Text based questions support students in meeting multiple standards in the ELA Curriculum Frameworks.
<b>Reciprocal Teaching</b>	Reciprocal teaching consists of four key comprehension strategies that are used with a passage. Students read and apply the strategies	Reciprocal teaching has a strong research base and has been shown to increase reading comprehension. Students focus on four key

	<p>of predicting, summarizing, clarifying, and asking questions. It can be used within small groups to support comprehension and as an intervention. It should be used as a grouping structure for literature circles also.</p>	<p>comprehension strategies applied to a variety of different tasks.</p>
<p><b>Small Group Instruction</b></p>	<p>Teacher meets with small groups of students based upon their needs. Data from benchmarks and progress monitoring and teacher assessments are used to form the groups. Instruction in the small group is based upon student need and revolves around direct phonics/phonemic awareness, fluency, comprehension, and vocabulary instruction.</p>	<p>Small group instruction has the most impact on students who are struggling. Students receive immediate feedback on their progress. Teachers are also able to differentiate based upon student need.</p>
<p><b>Turn and Talk or Think Pair Share</b></p>	<p>Students turn to a partner to share their thinking. In a think, pair, share, students are given think time before turning to a partner to share. After sharing, the teacher selects a few students to share their responses with the whole group.</p>	<p>Student talk is important for helping students to explain their thinking, use vocabulary, generate questions, make predictions, and summarize new learning.</p>
<p><b>Anchor Charts</b></p>	<p>Key ideas or class thinking are recording on a chart for students and the teacher to refer to as needed during a unit or over several lessons. In order for students to take ownership of the concepts presented in an anchor chart, the chart</p>	<p>As the name implies, it is an “anchor” to which students and teachers can use a reference tool.</p>

	should be created with students.	
<b>Comprehension Focus Wall</b>	A focus wall highlights key comprehension strategies that the class is working on. The focus wall names the comprehension strategy, define it, and give sentence frames to help students use the strategy.	A focus wall is a dedicated anchor chart to focus on comprehension strategies presented and spiraled through the year.
<b>Writer's Workshop</b>	A writer's workshop is organized to begin with a mini-lesson, time for independent writing while the teacher conferences with students, and an opportunity to share at the end. The focus of mini-lessons is one topic that will support improvement of students' writing.	A writer's workshop allows for a dedicated time to teach writing. Students are able to develop their understanding of the genres represented in the ELA Curriculum Frameworks and write extensively across the genres.

### Elementary Math Core Instructional Practices

<b>Core Instructional Practice</b>	<b>What Is It?</b>	<b>Why Is It Important?</b>
<b>Number Talks</b>	Number talks are short 5-10 minute discussion where the focus is on mental math. A problem or series of problems is presented to the students and they are asked to solve using mental math. Hand signals can be used by the teacher to help engage all students. Three to four student strategies are shared with the whole class.	Number talks allow children the opportunity to engage in rich meaningful conversations. Students have a chance to share and explain strategies. They justify answers while thinking and acting like mathematicians. They develop mental math skills.
<b>Talk Moves</b>	Talk moves are used by the teacher and students	Student talk reveals understanding and

	to help create student centered discussions. The moves include revoicing, say more, repeat, press for reasoning agree/disagree, wait time, and partner talk.	misunderstanding. Student talk supports academic language development and supports deeper reasoning. Student talk supports social development and perspective taking.
<b>Visual Models with Problem Solving</b>	Students represent their understanding of the relationship between the numbers represented in a problem. A bar diagram can be used to model the relationship between the numbers and help students see which problem structure is being used.	Students can model with mathematics using a visual model and they can reason abstractly and quantitatively.
<b>Problem Solving Approach</b>	Teacher leads the class in understanding the problem and explains expectations for solving the program. While students work on the problem, the teacher provides hints but no solutions. The teacher asks questions to facilitate student thinking. Observe and assess as students work. In the end, conduct a discussion where students justify and explain strategies for solving the problem. Accept student solutions without evaluation.	Students are provided an opportunity to engage in real world problems and the standards for mathematical practices.
<b>Math Journals</b>	Math journals provide a means for students to write about math. Writing is thinking down on paper.	Students are provided with an opportunity to use multiple standards for mathematical practices. Students construct viable arguments and critique the reasoning of others in writing and also model with mathematics. All of the mathematical practices might be evidenced in a

		math journal dependent on the problem.
<b>Anchor Charts</b>	Key ideas or class thinking are recording on a chart for students and the teacher to refer to as needed during a unit or over several lessons. In order for students to take ownership of the concepts presented in an anchor chart, the chart should be created with students.	As the name implies, it is an “anchor” to which students and teachers can use a reference tool.
<b>DICE</b>	Students approach a problem by first dissecting which asks them to make sense of the problem. Students then illustrate the problems focused on seeing the relationships between the ideas. The problem is then represented in numbers. Students explain their thinking in words and/or orally.	The mathematical practices ask students to develop their arguments including critique the arguments of others.
<b>Small Group Instruction</b>	Teacher meets with small groups of students based upon their needs. Data from benchmarks and progress monitoring and teacher assessments are used to form the groups. Instruction in the small group is based upon student need and revolves around conceptual understanding, procedural fluency, strategic competency, productive disposition, and adaptive reasoning.	Small group instruction has the most impact on students who are struggling. Students receive immediate feedback on their progress. Teachers are also able to differentiate based upon student need.

<b>Math Focus Wall</b>	A focus wall highlights the math strategies and skills that the class is working on.	A focus wall is a dedicated anchor chart to focus on the math strategies presented in a unit or topic.
<b>Mixed Review</b>	Mixed reviews include concept and skills previously taught. They should be consistently administered and might be used as warm-ups, homework, or for independent practice.	Students' retention of the mathematical concepts is improved with cumulative review. Providing a mixed review ensures mastery and allows one's working memory to absorb more challenging concepts. The review also provides assessment information to the teacher to use for instruction and forming small groups.

## Elementary Science Core Instructional Practices

Core Instructional Practice	What Is It?	Why Is It Important?
<b>Inquiry Learning Cycle in Science</b>	<p><b>Engage:</b> Students explore, notice, wonder, and speculate about the topic they will learn about.</p> <p><b>Design and Conduct Investigations:</b> Students determine a question, predict, and plan an investigation. They collect and record data. The data is organized, interpreted, and analyzed.</p> <p><b>Draw Conclusions:</b> Based upon analyze and synthesis of the data, students make claims based on the evidence.</p> <p><b>Communicate:</b> Students write, present, defend or debate their results.</p>	<p>Scientific inquiry reflects how scientists come to understand the natural world, and it is at the heart of how students learn. Students learn how to ask questions and use evidence to answer them. In the process of learning the strategies of scientific inquiry, students learn to conduct an investigation and collect evidence from a variety of sources, develop an explanation from the data, and communicate and defend their conclusions.</p>
<b>Engineering Design Process</b>  <b>Define</b>  <b>Propose</b>  <b>Design</b>  <b>Test</b>	<p>The Engineering Design process involves articulating a problem and investigating possible solutions to the problem (leading to a better solution to the problem). In other words, engineering design is a way to put science to work to solve problems.</p> <p>The Engineering Design process is not a rigid set of rules for solving every problem but more of a tool to focus and direct the process of problem</p>	<p>Professional engineers use a variety of processes to solve problems.</p> <p>By the very nature of engineering design, students will be required to read and comprehend a variety of text, write clearly and accurately, and to apply mathematics to projects outside of their math textbook. Engineering design requires students to listen actively, speak clearly and coherently (team-based projects), think critically and analytically, and often to use technology such as a</p>

<b>Evaluate</b>	solving and ways of thinking. Each problem is different and the solution may or may not go through each step in the process.	computer and computer software to help solve a problem. If students focus on solving problems to make a better world, they will also be developing the essential skills of demonstrating civic and community engagement and global literacy.
<b>Science Talk</b>	Talk moves in science are used by the teacher and students to help create student-centered discussions. The moves include revoicing, say more, repeat, press for reasoning agree/disagree, wait time, and partner talk.	Student talk reveals understanding and misunderstanding in science. Student talk supports academic language development and supports deeper reasoning. Student talk supports social development and perspective taking.
<b>Scientific Writing</b>  <b>Claim</b>  <b>Evidence</b>  <b>Reasoning</b>	Students make a claim, state their evidence, and link the claim and evidence with reasoning.  <b>Claim:</b> a conclusion about a problem  <b>Evidence:</b> scientific data that supports the claim  <b>Reasoning:</b> a justification that shows why the data counts as evidence to support the claim and includes appropriate scientific principles.	Reading, interpreting, and producing text are fundamental practices of science in particular, and they constitute at least half of engineers and scientists total working time. Writing requires scientists to describe, clarify their thinking, and justify their arguments.
<b>Science Journals</b>	Science journals provide a means for students to write about science. Writing is thinking down on paper.	Students are provided with an opportunity to use multiple science practices. Students construct viable arguments and critique the reasoning of others in writing and also create models.



## ELA Middle School Core Instructional Practices

Core Instructional Practice	What Is It?	Why Is It Important?
<b>Literature Circles</b>	Students select a text. The group reads the text either independently or in groups. Students discuss the text based upon specific roles to support comprehension of the text.	Students have some element of choice in selecting a text and taking on roles in the group while engaging in student led discussions and using comprehension strategies.
<b>Writing in Response to Text</b>	Students write a response to what they have read. The response could be persuasive, narrative, or informational. The response could be open ended or be text-based requiring use of the text and evidence.	Writing is thinking down on paper. Writing requires the student to formulate their thinking. It is also a means to support the assessment of comprehension.
<b>Independent Reading</b>	Students select their own text, plan to complete the reading, read in a variety of environments and monitor their own comprehension.	Students increase the amount and frequency of reading while developing stamina and comprehension.
<b>Dialectical Journals</b>	Students select or are assigned a quotation from a text. Students respond analyzing and evaluating the relevance and importance of the quote.	Students engage in the close reading of a portion of text. They analyze, evaluate, apply and synthesize their learning in relation to the text.
<b>Text Based Questioning</b>	Text based questions are questions that focus on gathering evidence from the text. Students look at the main idea and details, author's purpose, vocabulary, and forming	Text based questions require a close reading. They require students to gather evidence from the text to support and defend their answers. Text based questions support students in

	opinions.	meeting multiple standards in the ELA Curriculum Frameworks.
<b>Reciprocal Teaching</b>	Reciprocal teaching consists of four key comprehension strategies that are used with a passage. Students read and apply the strategies of predicting, summarizing, clarifying, and asking questions. It can be used within small groups to support comprehension and as an intervention. It should be used as a grouping structure for literature circles also.	Reciprocal teaching has a strong research base and has been shown to increase reading comprehension. Students focus on four key comprehension strategies applied to a variety of different tasks.
<b>Turn and Talk or Think Pair Share</b>	Students turn to a partner to share their thinking. In a think, pair, share, students are given think time before turning to a partner to share. After sharing, the teacher selects a few students to share their responses with the whole group.	Student talk is important for helping students to explain their thinking, use vocabulary, and
<b>Writer's Workshop</b>	A writer's workshop is organized to begin with a mini-lesson, time for independent writing while the teacher conferences with students, and an opportunity to share at the end. The focus of mini-lessons is one topic that will support improvement of students'	A writer's workshop allows for a dedicated time to teach writing. Students are able to develop their understanding of the genres represented in the ELA Curriculum Frameworks and write extensively across the genres.

	writing.	
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### Math Core Instructional Practices Grades 6-8

Core Instructional Practice	What Is It?	Why Is It Important?
<p><b>Type One Writing/Questions (Open Questions)</b></p>	<p>Type One Writing is used to capture students' ideas on paper. It is timed, and has a quota. The quota is the minimum number of lines or number of things students know or notice. Type 1 Writing can take the form of written lines, a list, a drawing, or labeled diagram. It is simple to evaluate (✓ or -) based on evidence of thoughtful effort.</p>	<p>It is used to draw out and shape background knowledge of students. It gives all students an entry point into the content. Students are given the opportunity to brainstorm what they notice, wonder, and identify as similar/different as well as practice using mathematical vocabulary and complete error analysis. Students may turn and talk to compare responses to Type One questions and check what they have in common, add something new, or agree on and star the best ideas.</p>
<p><b>Type Two Writing/Questions (Exit Tickets)</b></p>	<p>Type Two Writing is a short quiz that is designed to be quick and easy to correct in order to give immediate feedback to both the teacher and the students. It has a specific limit and it is graded for correctness based on required criteria.</p>	<p>It is used to measure student understanding to see if students met the objectives. It shows what the student knows about the topic. Students and teachers get immediate, formative feedback. Grading it as a quiz holds students accountable for the content as they are learning it. Students can learn from their mistakes with these low stakes assessments in preparation for their cumulative exams. Teachers use this data to adapt instruction, identify misconceptions, and common errors. Students use this data to determine what they</p>

		know.
<b>Pepper Cards</b>	A pepper card is a prepared card organized in two columns. The card has questions with answers about a problem or image that is on the top of the card. The left column has the questions and right column has the answers.	It provides students with model responses and practice with conceptual questions. The pepper cards can be saved and used later as review. They can be used as a study tool. Students can quiz themselves or their peers by covering one side of the pepper card. Family members can quiz their student. Students can also make their own pepper cards to use as a reference.
<b>One Penny or Mini Whiteboards</b>	A one penny whiteboard is made with a sheet protector that students can write on with dry erase markers. A template such as a number line or coordinate grid is slipped into the sheet protector. Students display their work or answer on the penny whiteboards or the mini whiteboard and hold them up.	Teachers use whiteboards as a means to check for understanding. Teachers are able to quickly view all student responses to several questions as students hold up their whiteboards. The teacher and student receive timely, immediate feedback on student progress with the content. The use of the whiteboards provides a lot of practice and repetition in a short period of time. Also, students have an opportunity to learn from each other and help their peers when they check answers with a partner.
<b>Talk Moves</b>	Talk moves are strategies used to enhance class discussion. The main talk moves are: revoicing, repeating/rephrasing, agreeing/disagreeing, adding on, wait time,	Students need to be able to discuss and share ideas during class time. In order for students to make viable arguments and critique each other's reasoning they need to practice in class. Talk moves help frame classroom

	<p>and partner talk.</p> <p>For example, students are asked if they can add anything to another student's response or if they agree or disagree with the response and why.</p>	<p>discussion and give students some useful guidelines to engage in respectful and productive discourse. They also promote class discussion amongst students, an effective alternative to the typical back and forth from teacher to one student.</p>
<b>Sorting Cards and Stand and Sort</b>	<p>Multiple representations of a concept are written on different cards. Students work collaboratively to sort, organize, or group cards. There can be more than one way to group the cards depending on the goal. Sorting can be done in small groups or students can be assigned a card and sort while standing.</p>	<p>This activity promotes focused student talk. Students collaborate agreeing and disagreeing about why certain cards match. This gives students an opportunity to explain their reasoning and critique each other's reasoning which is one of the important math practices. Additionally, there are many ways to adapt the activity to meet students at all levels. For example, cards can be added or subtraction from a set. Also, students can be challenged to create a new card that would fit into a group or sort cards another way that makes sense.</p>
<b>Think Aloud</b>	<p>Teachers or students say aloud what they are thinking as they solve a problem.</p>	<p>The student has a model for the mathematical thinking and concepts as they are applied to problem solving. Students can then apply the model to their own problem solving.</p>
<b>Quiz-Quiz-Trade</b>	<p>Each student has a problem that has an answer on the back. Students become masters of their initial problem and then they find a peer to quiz. They quiz their peer and then trade their card so they are now a</p>	<p>Students are provided with an engaging way to review concepts with each other. Students make sense of problems, explain their reasoning, and ask and answer questions with their peers. Students can review many</p>

	master of the new problem. This strategy can be used in whole or small group.	problems in a short period of time.
<b>Parallel Tasks</b>	Sets of related tasks that explore the same big idea but are designed to suit the needs of students at different developmental levels. You can give students all the tasks and allow them to choose which to complete.	Students are able to work on problems at their own pace. A range of difficulty in the tasks will allow all students to work through problems based upon their current level of understanding of the concept.
<b>Vocabulary (word wall, name game, 10,000 pyramid)</b>	A word wall is a list of vocabulary terms displayed on a wall in the classroom. The name game and 10,000 pyramid game are both vocabulary games that allow students to describe the meaning of words in multiple ways while other students guess the word or phrase. Games could be played in both small and whole groups.	These games allow students to assess how well they understand the meaning of a word by whether they can describe it in their own words, make connections, and give examples. The students will learn to be more precise with their use of vocabulary and communication.
<b>I do, We do, You do Gradual Release of Responsibility</b>	This is a gradual release structure that teachers use to build procedural skills. The teacher demonstrates how to do a problem, the class completes a problem together with the facilitation of the teacher, and then the students try a problem independently.	Students learn by observing the teacher modeling how to solve a problem and practicing with peer and/or teacher feedback before proceeding to completing tasks independently. Some students will need a little modeling while others will need more. The amount of modeling or teacher feedback can also vary depending on the content.
<b>Write About It/Writing to Explain</b>	Students explain their thinking on paper. They can explain why a rule works, how	One of the mathematical practice standards asks students to be able to give explanations

	<p>they found an answer, which of two answers is correct and why. This may take the form of a Type One or Type Two writing. Students may complete writing as a whole group, small group, or as a homework assignment.</p>	<p>and provide arguments for their reasoning. Writing is often considered thinking on paper. Writing also provides another means for students to demonstrate their knowledge.</p>
<b>Cumulative Review-Think Back</b>	<p>Mixed reviews include concept and skills previously taught. They should be consistently administered and might be used as warm-ups, homework, or for independent practice.</p>	<p>Students' retention of the mathematical concepts is improved with cumulative review. Providing a mixed review ensures mastery and allows one's working memory to absorb more challenging concepts. The review also provides assessment information to the teacher to use for instruction and forming small groups.</p>
<b>Link sheets/Rule of Four</b>	<p>The primary goal is to present <i>multiple representations</i> in <i>math</i>: symbolic, numerical, graphical, and verbal. Typically, these are used to represent mathematical functions with <i>graphs, tables, equations, and words</i>. They can be used to represent any mathematical idea in four different forms.</p>	<p>This helps students make connections and understand how a concept can be represented in multiple ways. This helps students to develop a deeper understanding of math as they start seeing the connections and do not just look at each topic in isolation.</p>
<b>Stations/Centers</b>	<p>Students work through a series of different tasks in small groups or independently. Teachers may work with a small group during that time to provide remediation or challenge.</p>	<p>Students receive feedback from their peers or by other means as they work. Students are able to work on a range of tasks at their level. This structure provides teachers an opportunity</p>

		to meet with smaller groups.
<b>D.I.C.E</b>	Students approach a problem by first making sense of the problem. Students then illustrate the problems focused on seeing the relationships between the ideas. Students then perform calculations to solve the problem and explain their thinking in words and/or orally.	This approach gives students a strategy for problem solving. Students learn to identify the important information and the specific question(s). The mathematical practices ask students to develop their arguments, justify their reasoning, and critique the arguments of others.
<b>Small Group Instruction</b>	The teacher meets with small groups of students based upon their needs. Data from benchmarks, progress monitoring, and teacher assessments are used to form the groups. Instruction in the small group is based upon student need and revolves around conceptual understanding, procedural fluency, strategic competency, productive disposition, and adaptive reasoning. Groups are flexible changing based upon review of assessment.	Students receive immediate feedback on their progress. Teachers are also able to differentiate based upon student need and provide more individualized instruction, as need. Students are able to move at their own pace.

**Middle School/High School Core Instructional Practices**

<b>Core Instructional Practice</b>	<b>What Is It?</b>	<b>Why Is It Important?</b>
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<b>Mastery Objectives</b>	A mastery objective is what the students should know and be able to do in terms of the academic curriculum. Mastery objectives should be appropriate, i.e. linked to standards, indicators, worth knowing, matched to students (challenging and attainable), assessable, and time-bound.	Objectives (goals) are the reason classroom activities are designed. Without clear objectives (goals), classroom activities are without direction. The research strongly implies that the more specific objectives are, the better they are. That is, objectives that are specific in nature are more strongly related to student achievement than objectives that are not.
<b>Posted Agenda</b>	The “Agenda” highlights at a glance the topics or activities that will be completed in the class period. Post an agenda at the beginning of each class. After reviewing the objective at the beginning of class, review the agenda highlighting the sequence of the lesson for students.	Students want to know what to expect, so they can be ready for the activities and procedures in the lesson. Routines and procedures for sharing the agenda with students will support its use by students.
<b>“Do Now”</b>	The “Do Now” is a 3-4 minute pen to paper task related to the instructional aims of the lesson that requires critical thinking, involves no interaction and no movement. The “Do Now” lasts approximately 5 minutes for student completion and teacher debriefing at the beginning of the class session.	The purpose of the "Do Now" is the following: <ul style="list-style-type: none"> <li>• to get students in an active, focused, accountable learning mode.</li> <li>• to help students transition from one class to the next.</li> <li>• to get students actively engaged in reviewing, reflecting and writing about focal lesson content.</li> <li>• to provide the teacher with an efficient formative assessment of students’ grasp of critical lesson content.</li> </ul>
<b>10-2 or Chunk and Chew</b>	The purpose is to ensure that students are not inundated with input from the teacher without being given appropriate time to process the information. Teachers deliver their lessons in small “chunks” and then give	Chunk and Chew is backed by brain research indicating that all learners at all ages need time to process new learning and move new ideas from short/working memory to long term memory.

	<p>students time to “chew” the information either individually, with partners, or in small groups. Teachers should follow this simple rule: for every 10 minutes of teacher input, students should be given 2 minutes to process the information.</p>	
<p><b>Turn and Talk or Think Pair Share</b></p>	<p>Students turn to a partner to share their thinking. In a think, pair, share, students are given think time before turning to a partner to share. After sharing, the teacher selects a few students to share their responses with the whole group.</p>	<p>Student talk is important for helping students to explain their thinking, use vocabulary, ask questions, make predictions, and summarize new learning.</p>
<p><b>Annotating Texts</b></p>	<p>Annotating text means to analyse and write notes in the margins or in any space you have around the text. It requires students to look deeper into the text and applying extra knowledge by making different connections to it. Students annotate by noting questions, descriptions, observations, connections, opinions, or vocabulary words they do not know.</p>	<p>Comprehending text involves thinking about it and responding to it in some way. Annotating texts supports students in producing evidence that supports their knowledge. It requires students to interact with the text to understand the author’s meaning and intent.</p>
<p><b>Two-Column Notes</b></p>	<p>As the student reads or listens, major headings or concepts are recorded in the space to the left, supporting details in the space to the right. At the end of the page, students write a summary of the main ideas and details</p>	<p>Two-column note taking requires active reading. Students must process the information as they take notes. The act of separating main ideas from details strengthens the understanding and memory of the content area.</p>

<b>Summaries</b>	Summaries are a way to distill the essence of a reading to its most important points. A summary is a potent statement of the essential ideas from any given text packed into a "paragraph shell" about 15% the size of the original text. The writer and reader need to find the main ideas of a text and to capture the original author's conclusions without using his/her exact words.	Strong readers summarize during and after reading. Summarizing helps students learn to determine essential ideas and consolidate important details that support them. It enables students to focus on keywords and phrases of an assigned text that are worth noting and remembering. It teaches students how to take a large selection of text and reduce it to the main points for more concise understanding.
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