

CONNECTICUT CORE STANDARDS CLASSROOM “LOOK FORs”

English Language Arts/Literacy (ELA/L) and Mathematics



Adapted from the Instructional Practice Guides by Student Achievement Partners (www.achievethecore.org) and information found within the Common Core State Standards Initiative website (www.corestandards.org)

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English Language Arts/Literacy (ELA/L) and Mathematics

The Connecticut Core Standards “Look Fors” should be evident to Connecticut principals, assistant principals, and other leaders during classroom visits and walk-throughs. **This guide is not intended for evaluation purposes.** Rather, it is intended to assist principals regarding the instructional shifts and rigor inherent in the standards. For each lesson, “Look Fors” might include the use of texts and other materials, the design of instructional tasks for students, direct teacher instruction, student discussion and other learning behaviors, as well as student work.

ENGLISH LANGUAGE ARTS/LITERACY

The Grades K–2 and 3–5 guides include:

RC **Reading Comprehension** and

RF **Reading Foundational Skills**

The Grades 6–12 guide includes:


SCI-T **Literacy in Science and Technology Subjects** and

HIS/SS **Literacy in History/Social Studies**

Use the appropriate section based on the lesson being taught. When observing only a portion of a lesson, some “Look Fors” may not be present.


RC

FOCUS EACH LESSON ON A HIGH QUALITY TEXT (OR MULTIPLE TEXTS).

INSTRUCTIONAL PRACTICE	PRINCIPAL "LOOK FORs" (ON A CONTINUUM) 	
A. A majority of read aloud time is spent reading, listening to, speaking, or writing about texts.	There is no text under consideration in this lesson.	The lesson is focused on a text or multiple texts.
B. The texts are at or above the complexity level expected for the grade and time in the school year. CCSS Lexile Text Range Grade K = below 190L Grade 1 = 190L–530L Grade 2 = 420L–620L	The texts are below both the quantitative and qualitative complexity expected for the grade and time in the school year.	The texts are at or above the qualitative and quantitative complexity expected for the grade and time in the school year.
C. The texts exhibit exceptional craft and thought and/or provide useful information; where appropriate, the texts are richly illustrated.	The quality of the texts is low—they are poorly written and do not provide useful information.	The quality of the texts is high—they are well written and/or provide useful information.

RC

EMPLOY QUESTIONS AND TASKS THAT ARE TEXT DEPENDENT AND TEXT SPECIFIC.

INSTRUCTIONAL PRACTICE	PRINCIPAL "LOOK FORs" (ON A CONTINUUM) 	
A. Questions and tasks address the text by attending to its particular structure, concepts, ideas, events, and details.	Questions and tasks do not refer directly to the text and instead elicit opinion answers.	Questions and tasks repeatedly return students to the text to build understanding.
B. Questions and tasks require students to use details from the text to demonstrate understanding and to support their ideas about the text. These ideas are expressed through both written and spoken responses.	Questions and tasks can be answered without reference to evidence from the text.	Questions and tasks require students to cite evidence from the text.
C. Questions and tasks attend to the academic language (i.e., vocabulary and syntax) in the text.	Questions and tasks do not explicitly attend to academic language or focus exclusively on domain-specific vocabulary.	Questions and tasks intentionally support students in developing facility with academic language.
D. Questions are sequenced to guide students in delving deeper into text and graphics. These inferences should relate to key ideas of the text.	Questions do not follow a clear sequence or are all at the same level of depth.	Questions are sequenced to support and challenge students in deep examination of the text.

RC

PROVIDE ALL STUDENTS WITH OPPORTUNITIES TO ENGAGE IN THE WORK OF THE LESSON.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. The teacher uses strategies to keep all students persevering with challenging tasks.	Students persist in efforts to seek evidence for their responses by returning to the text or recalling portions of the text read aloud.
B. The teacher creates the conditions for student conversations and plans tasks where students are encouraged to talk about each other’s thinking.	Students build on each other’s observations or insights about the text when discussing or collaborating.
C. The teacher acts on knowledge of individual students to promote progress toward independence in grade-level literacy tasks.	When possible, students demonstrate independence in completing literacy tasks.


RF

ENSURE THAT INSTRUCTION AND MATERIALS EXPLICITLY AND SYSTEMATICALLY PROVIDE ALL STUDENTS WITH THE OPPORTUNITY TO MASTER FOUNDATIONAL SKILLS.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM)	
A. The foundational skills being taught are aligned to the standards for this grade.	Foundational skills are unconnected to the standards for the grade.	Foundational skills addressed fully align with the standards for the grade.
B. Instruction and materials address foundational skills by attending to phonological awareness, concepts of print, letter recognition, phonetic patterns, and word structure.	Instruction and materials are disjointed and fail to comprehensively address the foundational skills.	Instruction and materials coherently address the foundational skills.
C. The teacher focuses the majority of student reading time on reading, listening to, speaking, or writing about text.	There is no text under consideration in this lesson.	The lesson is focused on a text.
D. Instruction and materials provide many opportunities for students of all abilities to practice newly acquired foundational skills.	Instruction and materials fail to provide sufficient opportunity for students of all abilities to practice newly acquired foundational skills.	Instruction and materials provide many opportunities to practice newly acquired foundational skills for the range of students in the classroom.

continued

RF **ENSURE THAT INSTRUCTION AND MATERIALS EXPLICITLY AND SYSTEMATICALLY PROVIDE ALL STUDENTS WITH THE OPPORTUNITY TO MASTER FOUNDATIONAL SKILLS, continued.**

INSTRUCTIONAL PRACTICE	PRINCIPAL "LOOK FORs" (ON A CONTINUUM) 	
E. Whenever possible, instruction and materials connect acquisition of foundational skills to making meaning from reading.	Instruction and materials do not connect foundational skills to making meaning from reading.	Instruction and materials connect foundational skills to making meaning from reading.
F. Instruction and materials are responsive to students' understanding of the skills being taught through careful monitoring of student progress.	Instruction and materials do not monitor or adapt to student progress.	Instruction and materials monitor and respond flexibly to student progress.

RF

PROVIDE ALL STUDENTS WITH OPPORTUNITIES TO ENGAGE IN THE WORK OF THE LESSON.

INSTRUCTIONAL PRACTICE	PRINCIPAL "LOOK FORs"
A. The teacher uses strategies to keep all students persevering with challenging tasks.	Even after reaching a point of frustration, students persist in efforts to achieve foundational reading skills.
B. The teacher orchestrates conversations and plans tasks in which students talk about each other's thinking.	When discussing and practicing foundational skills, students actively respond to teacher prompts and build on each other's contributions.

RC

FOCUS EACH LESSON ON A HIGH QUALITY TEXT (OR MULTIPLE TEXTS).

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM)	
A. A majority of read aloud time is spent reading, listening to, speaking, or writing about texts.	There is no text under consideration in this lesson.	The lesson is focused on a text or multiple texts.
B. The texts are at or above the complexity level expected for the grade and time in the school year. CCSS Lexile Text Range Grade 3 = 620L–820L Grades 4–5 = 740L–1010L	The texts are below both the quantitative and qualitative complexity expected for the grade and time in the school year.	The texts are at or above the qualitative and quantitative complexity expected for the grade and time in the school year.
C. The texts exhibit exceptional craft and thought and/or provide useful information.	The quality of the texts is low—they are poorly written and do not provide useful information.	The quality of the texts is high—they are well written and/or provide useful information.

RC

EMPLOY QUESTIONS AND TASKS THAT ARE TEXT DEPENDENT AND TEXT SPECIFIC.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM)	
A. Questions and tasks address the text by attending to its particular structure, concepts, ideas, events, and details.	Questions and tasks do not refer directly to the text and instead elicit opinion answers.	Questions and tasks repeatedly return students to the text to build understanding.
B. Questions and tasks require students to use details from the text to demonstrate understanding and to support their ideas about the text. These ideas are expressed through both written and spoken responses.	Questions and tasks can be answered without reference to evidence from the text.	Questions and tasks require students to cite evidence from the text.
C. Questions and tasks attend to the academic language (i.e., vocabulary and syntax) in the text.	Questions and tasks do not explicitly attend to academic language or focus exclusively on domain-specific vocabulary.	Questions and tasks intentionally support students in developing facility with academic language.
D. Questions are sequenced to guide students in delving deeper into text and graphics. These inferences should relate to key ideas of the text.	Questions do not follow a clear sequence or are all at the same level of depth.	Questions are sequenced to support and challenge students in deep examination of the text.


RC

PROVIDE ALL STUDENTS WITH OPPORTUNITIES TO ENGAGE IN THE WORK OF THE LESSON.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORs”
A. The teacher provides the conditions for all students to focus on text.	Students persist in efforts to read, speak and/or write about demanding grade-level texts.
B. The teacher expects evidence and precision from students and probes students’ answers accordingly.	Students habitually provide textual evidence to support answers and responses.
C. The teacher creates the conditions for student conversations and plans tasks where students are encouraged to talk about each other’s thinking.	Students use evidence to build on each other’s observations or insights during discussion or collaboration.
D. The teacher acts on knowledge of individual students to promote progress toward independence in grade-level literacy tasks.	When possible, students demonstrate independence in completing literacy tasks.
E. When appropriate, the teacher explicitly and systematically attends to strengthening students’ reading foundational skills.	Students demonstrate use of word-level diagnostic skills, activating such strategies as needed to read with grade-level fluency and comprehension.

ENSURE THAT INSTRUCTION AND MATERIALS EXPLICITLY AND SYSTEMATICALLY PROVIDE ALL STUDENTS WITH THE OPPORTUNITY TO MASTER FOUNDATIONAL SKILLS.

RF


INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORs” (ON A CONTINUUM) 	
A. The foundational skills being taught are aligned to the standards for this grade.	Foundational skills are unconnected to the standards for the grade.	Foundational skills addressed fully align with the standards for the grade.
B. Instruction and materials address foundational skills by attending to phonological awareness, concepts of print, letter recognition, phonetic patterns, and word structure. (Note: not all elements will be addressed in each lesson.)	Instruction and materials are disjointed or fail to comprehensively address the foundational skills.	Instruction and materials coherently address the foundational skills.
C. The teacher focuses the majority of student reading time on reading, listening to, speaking, or writing about text.	There is no text under consideration in this lesson.	The lesson is focused on a text.
D. Instruction and materials provide many opportunities for students of all abilities to practice newly acquired foundational skills.	Instruction and materials fail to provide sufficient opportunity for students of all abilities to practice newly acquired foundational skills.	Instruction and materials provide many opportunities to practice newly acquired foundational skills for the range of students in the classroom.
E. Whenever possible, instruction and materials connect acquisition of foundational skills to making meaning from reading.	Instruction and materials do not connect foundational skills to making meaning from reading.	Instruction and materials connect foundational skills to making meaning from reading.
F. Instruction and materials are responsive to students’ understanding of the skills being taught through careful monitoring of student progress.	Instruction and materials do not monitor or adapt to student progress.	Instruction and materials monitor and respond flexibly to student progress.

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PROVIDE ALL STUDENTS WITH OPPORTUNITIES TO ENGAGE IN THE WORK OF THE LESSON.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORs”	
A. The teacher uses strategies to keep all students persevering with challenging tasks.	Even after reaching a point of frustration, students persist in efforts to achieve foundational reading skills.	
B. The teacher orchestrates conversations and plans tasks in which students talk about each other’s thinking.	When discussing and practicing foundational skills, students actively respond to teacher prompts and build on each other’s contributions.	

FOCUS EACH LESSON ON A HIGH QUALITY TEXT (OR MULTIPLE TEXTS).

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM) 	
A. A majority of the lesson is spent reading, speaking, or writing about texts.	There is no text under consideration in this lesson.	The lesson is focused on a text or multiple texts.
B. The texts are at or above the complexity level expected for the grade and time in the school year. CCSS Lexile Text Range Grade 6–8 = 925L–1185L Grades 9–10 = 1050L–1335L Grades 11–12 = 1185L–1385L	The texts are below both the quantitative and qualitative complexity expected for the grade and time in the school year.	The texts are at or above the qualitative and quantitative complexity expected for the grade and time in the school year.
C. The texts exhibit exceptional craft and thought and/or provide useful information.	The quality of the texts is low—they are poorly written and do not provide useful information.	The quality of the texts is high—they are well written and/or provide useful information.


EMPLOY QUESTIONS AND TASKS THAT ARE TEXT DEPENDENT AND TEXT SPECIFIC.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM) 	
A. Questions and tasks address the text by attending to its particular structure, concepts, ideas, events, and details.	Questions and tasks do not refer directly to the text and instead elicit opinion answers.	Questions and tasks repeatedly return students to the text to build understanding.
B. Questions and tasks require students to cite evidence from the texts and support analysis, inferences, and claims.	Questions and tasks can be answered without reference to evidence from the text.	Questions and tasks require students to cite evidence from the text.
C. Questions and tasks attend to the academic language (i.e., vocabulary and syntax) in the text.	Questions and tasks do not explicitly attend to academic language or focus exclusively on domain-specific vocabulary.	Questions and tasks intentionally support students in developing facility with academic language.
D. Questions are sequenced to guide students in delving deeper into text and graphics. These inferences should relate to key ideas of the text.	Questions do not follow a clear sequence or are all at the same level of depth.	Questions are sequenced to support and challenge students in deep examination of the text.


PROVIDE ALL STUDENTS WITH OPPORTUNITIES TO ENGAGE IN THE WORK OF THE LESSON.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. The teacher provides the conditions for all students to focus on text.	Students persist in efforts to read, speak and/or write about demanding grade-level texts.
B. The teacher expects evidence and precision from students and probes students’ answers accordingly.	Students habitually provide textual evidence to support answers and responses.
C. The teacher creates the conditions for student conversations and plans tasks where students are encouraged to talk about each other’s thinking.	Students use evidence to build on each other’s observations or insights during discussion or collaboration.
D. The teacher acts on knowledge of individual students to promote progress toward independence in grade-level literacy tasks.	When possible, students demonstrate independence in completing literacy tasks.

FOCUS EACH LESSON ON A HIGH QUALITY TEXT (OR MULTIPLE TEXTS).

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM) 	
A. Text-based instruction engages students in reading, speaking, or writing about texts.	There is no text under consideration in this lesson.	A text (or multiple texts) is directly addressed in this lesson.
B. The texts are at or above the complexity level expected for the grade and time in the school year. CCSS Lexile Text Range Grade 6–8 = 925L–1185L Grades 9–10 = 1050L–1335L Grades 11–12 = 1185L–1385L	The texts are below both the quantitative and qualitative complexity expected for the grade and time in the school year.	The texts are at or above both the qualitative and quantitative complexity expected for the grade and time in the school year.
C. The texts are clear and build knowledge relevant to the content being studied.	The quality of the texts is low—they are unclear and are not relevant to the content being studied.	The quality of the texts is high—they are clear and build knowledge relevant to the content being studied.


EMPLOY QUESTIONS AND TASKS THAT ARE TEXT DEPENDENT AND TEXT SPECIFIC.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS” (ON A CONTINUUM) 	
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B. Questions and tasks require students to cite evidence from the texts and support analysis, inferences, and claims.	Questions and tasks can be answered without reference to evidence from the text or data.	Questions and tasks require students to cite evidence from the text or data.
C. Questions and tasks require students to appropriately use academic language (i.e., vocabulary and syntax) from the text in their responses or claims.	Questions and tasks do not explicitly require use of academic language or domain-specific language.	Questions and tasks intentionally support students in developing facility with academic and domain-specific language.
D. Sequences of questions support students in delving deeper into text, data, or graphics to support inquiry analysis, and appropriate procedures.	Questions do not follow a clear sequence or are all at the same level of depth.	Questions are sequenced to support and challenge students in deep examination of the text.


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C. Questions and tasks require students to appropriately use academic language (i.e., vocabulary and syntax) from the text in their responses or claims.	Questions and tasks do not explicitly require use of academic language or domain-specific language.	Questions and tasks intentionally support students in developing facility with academic and domain-specific language.
D. Sequences of questions support students in delving deeper into text, data, or graphics to support inquiry analysis, and appropriate procedures.	Questions do not follow a clear sequence or are all at the same level of depth.	Questions are sequenced to support and challenge students in deep examination of the text.

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C. The teacher creates the conditions for student conversations and plans tasks where students are encouraged to talk about each other’s thinking.	Students use evidence to build on each other’s observations or insights during discussion or collaboration.
D. The teacher acts on knowledge of individual students to promote progress toward independence in grade-level literacy tasks.	When possible, students demonstrate independence in completing literacy tasks.

MATHEMATICS

The Grades K–2, 3–5, 6–8 and 9–12 guides include:

MS Mathematics Shifts (**F** Focus, **C** Coherence, and **R** Rigor)

The Grades K–12 guide includes:

ST Standards for Mathematical Practice

Use both sections when observing CT Core Standards in the classroom. When observing only a portion of a lesson, some “Look Fors” may not be present.

F

THE LESSON FOCUSES STRONGLY WHERE THE STANDARDS FOCUS.

INSTRUCTIONAL PRACTICE	PRINCIPAL "LOOK FORs"
A. In kindergarten , instructional time is focused on two critical areas.	<ol style="list-style-type: none"> 1. Representing and comparing whole numbers, initially with sets of objects. 2. Describing shapes and space.
B. In Grade 1 , instructional time is focused on four critical areas.	<ol style="list-style-type: none"> 1. Developing understanding of addition, subtraction, and strategies for addition and subtraction within 20. 2. Developing understanding of whole number relationships and place value, including grouping in tens and ones. 3. Developing understanding of linear measurement and measuring lengths as iterating length units. 4. Reasoning about attributes of, and composing and decomposing geometric shapes.
C. In Grade 2 , instructional time is focused on four critical areas.	<ol style="list-style-type: none"> 1. Extending understanding of base-ten notation. 2. Building fluency with addition and subtraction. 3. Using standard units of measure. 4. Describing and analyzing shapes.

C

THE LESSON INTENTIONALLY RELATES NEW CONCEPTS TO STUDENTS' PRIOR SKILLS AND KNOWLEDGE.

INSTRUCTIONAL PRACTICE	PRINCIPAL "LOOK FORs"
A. The teacher builds on the mathematics standards across grades, and links the major topics within grades.	<ol style="list-style-type: none"> 1. Prior knowledge is activated through a variety of activities, including but not limited to questions eliciting prior learning, introductory activities requiring previously learned standards, and summary activities that help in building connections. 2. The closure of the lesson summarizes the math content learned by enforcing it with evidence in the student work and class discussions.
B. Major topics in the grade are reinforced by utilizing supporting and complementary topics.	<ol style="list-style-type: none"> 1. Lessons are designed around the major work of the grade but integrate necessary and supporting concepts, knowledge, and skills. For example, instead of presenting the topic of "data displays" as an end in itself, the topic is used to support grade-level word problems in which students apply mathematical skills to solve problems.

**AS APPROPRIATE FOR THE STANDARDS BEING ADDRESSED,
THE LESSON TARGETS THE THREE ASPECTS OF RIGOR.**

R

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
<p>A. As appropriate for the standards being addressed, instructional tasks are designed to build the conceptual understanding.</p>	<ol style="list-style-type: none"> 1. The teacher makes the mathematics of the lesson explicit by using representations, examples, multiple pathways to solutions, explanations, and/or classroom discourse. 2. Effective questioning strategies are used to clarify and extend student thinking, as well as support discussions that contain a balance of eliciting feedback, publicizing ideas, and making connections or justifications. 3. The teacher checks for understanding throughout the lesson, using informal but deliberate methods (questioning, assigning short problems, etc.). 4. Students access concepts from a number of perspectives to see math as more than a set of mnemonics or discrete procedures.
<p>B. As appropriate for the standards being addressed, instructional tasks are designed to build procedural skills and fluency.</p>	<ol style="list-style-type: none"> 1. Students are expected to have speed and accuracy with simple calculations. 2. Students are given extensive opportunity within the lesson to work with grade-level problems. 3. The teacher structures class time and/or homework time for students to memorize, through repetition, core functions.
<p>C. As appropriate for the standards being addressed, instructional tasks are designed to build application skills.</p>	<ol style="list-style-type: none"> 1. Students apply mathematical knowledge in problem-solving situations. 2. A variety of student-solution methods is shared and examined together to support understanding.

F

THE LESSON FOCUSES STRONGLY WHERE THE STANDARDS FOCUS.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
<p>A. In Grade 3, instructional time is focused on four critical areas.</p>	<ol style="list-style-type: none"> 1. Developing understanding of multiplication and division and strategies for multiplication and division within 100. 2. Developing understanding of fractions, especially unit fractions (fractions with numerator 1). 3. Developing understanding of the structure of rectangular arrays and of area. 4. Describing and analyzing two-dimensional shapes.
<p>B. In Grade 4, instructional time is focused on three critical areas.</p>	<ol style="list-style-type: none"> 1. Developing understanding and fluency with multidigit multiplication, and developing understanding of dividing to find quotients involving multidigit dividends. 2. Developing an understanding of fraction equivalence, addition and subtraction of fractions with like denominators, and multiplication of fractions by whole numbers. 3. Understanding that geometric figures can be analyzed and classified based on their properties, such as having parallel sides, perpendicular sides, particular angle measures, and symmetry.
<p>C. In Grade 5, instructional time is focused on three critical areas.</p>	<ol style="list-style-type: none"> 1. Developing fluency with addition and subtraction of fractions, and developing understanding of the multiplication of fractions and of division of fractions in limited cases (unit fractions divided by whole numbers and whole numbers divided by unit fractions). 2. Extending division to two-digit divisors, integrating decimal fractions into the place value system and developing understanding of operations with decimals to hundredths, and developing fluency with whole number and decimal operations. 3. Developing understanding of volume.

C

LEARNING IS CAREFULLY CONNECTED ACROSS GRADES SO THAT STUDENTS CAN BUILD NEW UNDERSTANDING ONTO FOUNDATIONS BUILT IN PREVIOUS YEARS.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. The teacher builds on the mathematics standards across grades, and links the major topics within grades.	<ol style="list-style-type: none"> 1. Prior knowledge is activated through a variety of activities, including but not limited to questions eliciting prior learning, introductory activities requiring previously learned standards, and summary activities that help in building connections. 2. The closure of the lesson summarizes the math content learned by enforcing it with evidence in the student work and class discussions.
B. Major topics in the grade are reinforced by utilizing supporting and complementary topics.	<ol style="list-style-type: none"> 1. Lessons are designed around the major work of the grade but integrate necessary and supporting concepts, knowledge, and skills. For example, instead of presenting the topic of “data displays” as an end in itself, the topic is used to support grade-level word problems in which students apply mathematical skills to solve problems.

R

AS APPROPRIATE FOR THE STANDARDS BEING ADDRESSED, THE LESSON TARGETS THE THREE ASPECTS OF RIGOR.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. As appropriate for the standards being addressed, instructional tasks are designed to build the conceptual understanding.	<ol style="list-style-type: none"> 1. The teacher makes the mathematics of the lesson explicit by using representations, examples, multiple pathways to solutions, explanations, and/or classroom discourse. 2. Effective questioning strategies are used to clarify and extend student thinking, as well as support discussions that contain a balance of eliciting feedback, publicizing ideas, and making connections or justifications. 3. The teacher checks for understanding throughout the lesson, using informal but deliberate methods (questioning, assigning short problems, etc.). 4. Students access concepts from a number of perspectives to see math as more than a set of mnemonics or discrete procedures.
B. As appropriate for the standards being addressed, instructional tasks are designed to build procedural skills and fluency.	<ol style="list-style-type: none"> 1. Students are expected to have speed and accuracy with simple calculations. 2. Students are given extensive opportunity within the lesson to work with grade-level problems. 3. The teacher structures class time and/or homework time for students to memorize, through repetition, core functions.
C. As appropriate for the standards being addressed, instructional tasks are designed to build application skills.	<ol style="list-style-type: none"> 1. Students apply mathematical knowledge in problem-solving situations. 2. A variety of student-solution methods is shared and examined together to support understanding.

F

THE LESSON FOCUSES STRONGLY WHERE THE STANDARDS FOCUS.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. In Grade 6 , instructional time is focused on four critical areas.	<ol style="list-style-type: none"> 1. Connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems. 2. Completing understanding of division of fractions and extending the notion of number to the system of rational numbers, which includes negative numbers. 3. Writing, interpreting, and using expressions and equations. 4. Developing understanding of statistical thinking.
B. In Grade 7 , instructional time is focused on four critical areas.	<ol style="list-style-type: none"> 1. Developing understanding of and applying proportional relationships. 2. Developing understanding of operations with rational numbers and working with expressions and linear equations. 3. Solving problems involving scale drawings and informal geometric constructions, and working with two- and three-dimensional shapes to solve problems involving area, surface area, and volume. 4. Drawing inferences about populations based on samples.
C. In Grade 8 , instructional time is focused on three critical areas.	<ol style="list-style-type: none"> 1. Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations. 2. Grasping the concept of a function and using functions to describe quantitative relationships. 3. Analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem.
D. In high school-level algebra , instructional time is focused on four critical areas.	<ol style="list-style-type: none"> 1. Seeing structure in expression and create equations. 2. Reasoning with equations and inequalities. 3. Interpreting and building functions. 4. Modeling with linear, quadratic, and exponential models.
E. In high school-level geometry , instructional time is focused on six critical areas.	<ol style="list-style-type: none"> 1. Extending understanding of congruence, similarity, right triangles, and circles. 2. Defining trigonometric ratios to solve problems involving right triangles and applying trigonometry to general triangles. 3. Expressing geometric properties with equations. 4. Visualizing relationships between two- and three-dimensional objects. 5. Modeling with geometry. 6. Understanding conditional probability, the rules of probability, and using probability to make decisions.

LEARNING IS CAREFULLY CONNECTED ACROSS GRADES SO THAT STUDENTS CAN BUILD NEW UNDERSTANDING ONTO FOUNDATIONS BUILT IN PREVIOUS YEARS.

C

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. The lesson intentionally relates new concepts to students’ prior skills and knowledge.	<ol style="list-style-type: none"> 1. Prior knowledge is activated through a variety of activities, including but not limited to questions eliciting prior learning, introductory activities requiring previously learned standards, and summary activities that help in building connections. 2. The closure of the lesson summarizes the math content learned by enforcing it with evidence in the student work and class discussions.
B. Major topics in the grade are reinforced by utilizing supporting and complementary topics.	<ol style="list-style-type: none"> 1. Lessons are designed around the major work of the grade but integrate necessary and supporting concepts, knowledge, and skills. For example, instead of presenting the topic of “data displays” as an end in itself, the topic is used to support grade-level word problems in which students apply mathematical skills to solve problems.

PURSUING CONCEPTUAL UNDERSTANDING, PROCEDURAL SKILLS AND FLUENCY, AND APPLICATION WITH EQUAL INTENSITY.

R

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. As appropriate for the standards being addressed, instructional tasks are designed to build the conceptual understanding.	<ol style="list-style-type: none"> 1. The teacher makes the mathematics of the lesson explicit by using representations, examples, multiple pathways to solutions, explanations, and/or classroom discourse. 2. Effective questioning strategies are used to clarify and extend student thinking, as well as support discussions that contain a balance of eliciting feedback, publicizing ideas, and making connections or justifications. 3. The teacher checks for understanding throughout the lesson, using informal but deliberate methods (questioning, assigning short problems, etc.). 4. Students access concepts from a number of perspectives to see math as more than a set of mnemonics or discrete procedures.
B. As appropriate for the standards being addressed, instructional tasks are designed to build procedural skills and fluency.	<ol style="list-style-type: none"> 1. Students are expected to have speed and accuracy with simple calculations. 2. Students are given extensive opportunity within the lesson to work with grade-level problems. 3. The teacher structures class time and/or homework time for students to memorize, through repetition, core functions.
C. As appropriate for the standards being addressed, instructional tasks are designed to build application skills.	<ol style="list-style-type: none"> 1. Students apply mathematical knowledge in problem-solving situations. 2. A variety of student-solution methods is shared and examined together to support understanding.

F

THE LESSON FOCUSES STRONGLY WHERE THE STANDARDS FOCUS.

INSTRUCTIONAL PRACTICE	PRINCIPAL “LOOK FORS”
A. Modeling	<ol style="list-style-type: none"> 1. Modeling means using mathematics or statistics to describe a real world situation and deduce additional information about the situation by mathematical or statistical computation and analysis. Modeling produces information about the real world situation via the mathematical model; therefore, modeling should be evident in all high school courses.
B. In high school-level algebra , instructional time is focused on four critical areas.	<ol style="list-style-type: none"> 1. Seeing structure in expression and create equations. 2. Reasoning with equations and inequalities. 3. Interpreting and building functions. 4. Modeling with linear, quadratic, and exponential models.
C. In high school-level geometry , instructional time is focused on six critical areas.	<ol style="list-style-type: none"> 1. Extending understanding of congruence, similarity, right triangles, and circles. 2. Defining trigonometric ratios to solve problems involving right triangles and applying trigonometry to general triangles. 3. Expressing geometric properties with equations. 4. Visualizing relationships between two- and three-dimensional objects. 5. Modeling with geometry. 6. Understanding conditional probability, the rules of probability, and using probability to make decisions.
D. In high school-level algebra 2 , instructional time is focused on six critical areas.	<ol style="list-style-type: none"> 1. Developing understanding of the complex number system. 2. Seeing structure in expression and creating equations. 3. Performing arithmetic with polynomials and rational expressions. 4. Extending understanding of reasoning with equations and inequalities and interpreting and building functions. 5. Developing understanding of trigonometric functions. 6. Interpreting data, making inferences, justifying conclusions, and using probability to make decisions.
E. Additional critical areas may be present in high school courses but must be present in courses designed to enable students to take advanced mathematics (calculus, advanced statistics and discrete mathematics).	<ol style="list-style-type: none"> 1. Extending understanding of the complex number system. 2. Representing, modeling, and performing operations with vectors and matrices. 3. Reasoning with systems of equations. 4. Extending understanding of interpreting functions, building functions and trigonometric functions. 5. Expressing geometric properties with equations. 6. Extending understanding of using probability to make decisions.

**LEARNING IS CAREFULLY CONNECTED ACROSS GRADES SO THAT STUDENTS CAN BUILD
NEW UNDERSTANDING ONTO FOUNDATIONS BUILT IN PREVIOUS YEARS.**

C

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**PURSUE CONCEPTUAL UNDERSTANDING, PROCEDURAL SKILLS
AND FLUENCY, AND APPLICATION WITH EQUAL INTENSITY.**

R

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K-12 STANDARDS FOR MATHEMATICAL PRACTICE CLASSROOM “LOOK FORs” GUIDE

*Adapted from Elementary Mathematics Specialists & Teacher Leaders Project 2012
Engaging in the Mathematical Practices (Look-Fors)*

MATHEMATICS PRACTICES	STUDENT “LOOK FORs”	TEACHER “LOOK FORs”
Overarching Habits of Mind of a Productive Math Thinker	1. Make sense of problems and persevere in solving them. <ul style="list-style-type: none"> Understand the meaning of the problem and look for entry points to its solution. Analyze information (givens, constraints, relationships, goals). Make conjectures and plan a solution pathway. Monitor and evaluate the progress and change course as necessary. Check answers to problems and ask, “Does this make sense?” 	<ul style="list-style-type: none"> Involve students in rich problem-based tasks that encourage them to persevere to reach a solution. Provide opportunities for students to solve problems that have multiple solutions. Encourage students to represent their thinking while problem solving.
	2. Attend to precision. <ul style="list-style-type: none"> Communicate precisely using clear definitions. State the meaning of symbols, carefully specifying units of measure, and providing accurate labels. Calculate accurately and efficiently, expressing numerical answers with a degree of precision. Provide carefully formulated explanations. Label accurately when measuring and graphing. 	<ul style="list-style-type: none"> Emphasize the importance of precise communication by encouraging students to focus on clarity of the definitions, notation, and vocabulary used to convey their reasoning. Encourage accuracy and efficiency in computation and problem-based solutions, expressing numerical answers, data, and/or measurements with a degree of precision appropriate for the context of the problem.
Reasoning and Explaining	3. Reason abstractly and quantitatively. <ul style="list-style-type: none"> Make sense of quantities and relationships in problem situations. Represent abstract situations symbolically and understand the meaning of quantities. Create a coherent representation of the problem at hand. Consider the units involved. Flexibly use properties of operations. 	<ul style="list-style-type: none"> Facilitate opportunities for students to discuss/ use representations to make sense of quantities and relationships. Encourage the flexible use of properties of operations, objects, and solution strategies when solving problems. Provide opportunities for students to decontextualize (abstract a situation) and/or contextualize (identify referents for symbols involved) the mathematics they are learning.
	4. Construct viable arguments and critique the reasoning of others. <ul style="list-style-type: none"> Use definitions and previously established causes/ effects (results) in constructing arguments. Make conjectures and use counterexamples to build a logical progression of statements to explore and support ideas. Communicate and defend mathematical reasoning using objects, drawings, diagrams, and/or actions. Decide if the arguments of others make sense and ask probing questions to clarify or improve the arguments. 	<ul style="list-style-type: none"> Provide and orchestrate opportunities for students to listen to the solution strategies of others, discuss alternative solutions, and defend their ideas. Ask higher-order questions that encourage students to defend their ideas. Provide prompts that encourage students to think critically about the mathematics they are learning.

	MATHEMATICS PRACTICES	STUDENT "LOOK FORS"	TEACHER "LOOK FORS"
Modeling and Using Tools	5. Model with mathematics.	<ul style="list-style-type: none"> Apply prior knowledge to solve real world problems. Identify important quantities and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts, and/or formulas. Use assumptions/approximations to make a problem simpler. Check to see if an answer makes sense within the context/situation and change a model when necessary. 	<ul style="list-style-type: none"> Use mathematical models appropriate for the focus of the lesson. Encourage student use of developmentally and content-appropriate mathematical models (e.g., variables, equations, coordinate grids). Remind students that a mathematical model used to represent a problem's solution is "a work in progress," and may be revised as needed.
	6. Use appropriate tools strategically.	<ul style="list-style-type: none"> Make sound decisions about the use of specific tools. (Examples might include calculator, concrete models, digital technologies, pencil/paper, ruler, compass, etc.) Use technological tools to visualize the results of assumptions, explore consequences, and compare predications with data. Identify relevant external math resources (digital content on a website) and use them to pose/solve problems. Use technological tools to explore and deepen understanding of concepts 	<ul style="list-style-type: none"> Use appropriate physical and/or digital tools to represent, explore, and deepen student understanding. Help students make sound decisions concerning the use of specific tools appropriate for the grade level and content focus of the lesson. Provide access to materials, models, tools and/or technology-based resources that assist students in making conjectures necessary for solving problems.
Seeing Structure and Generalizing	7. Look for and make use of structure.	<ul style="list-style-type: none"> Look for patterns or structure, recognizing that quantities can be represented in different ways. Recognize the significance in concepts and models and use the patterns or structure for solving related problems. View complicated quantities both as single objects or as compositions of several objects and use operations to make sense of problems. 	<ul style="list-style-type: none"> Engage students in discussions emphasizing relationships between particular topics within a content domain or across content domains. Recognize that the quantitative relationships modeled by operations and their properties remain important regardless of the operational focus of a lesson. Provide activities in which students demonstrate their flexibility in representing mathematics in a number of ways, e.g., $76 = (7 \times 10) + 6$; discussing types of quadrilaterals, etc.
	8. Look for and express regularity in repeated reasoning.	<ul style="list-style-type: none"> Notice repeated calculations and look for general methods and shortcuts. Continually evaluate the reasonableness of intermediate results (comparing estimates), while attending to details, and make generalizations based on findings. 	<ul style="list-style-type: none"> Engage students in discussion related to repeated reasoning that may occur in a problem's solution. Draw attention to the prerequisite steps necessary to consider when solving a problem. Urge students to continually evaluate the reasonableness of results.

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