TEACHFEST

CONNECTICUT PRINCIPALS ACADEMY

TeachFest Guide

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CONNECTICUT
STATE DEPARTMENT
OF EDUCATION

TEACHFEST

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English Language Arts & Content Area Literacy

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STATE DEPARTMENT OF EDUCATION

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Common Core Shifts for English Language Arts/Literacy

1. Regular practice with **complex text** and its **academic language**

Rather than focusing solely on the skills of reading and writing, the Standards highlight the growing complexity of the texts students must read to be ready for the demands of college and careers. The Standards build a staircase of text complexity so that all students are ready for the demands of college- and career-level reading no later than the end of high school. Closely related to text complexity—and inextricably connected to reading comprehension—is a focus on academic vocabulary: words that appear in a variety of content areas (such as *ignite* and *commit*).

2. Reading, writing and speaking grounded in **evidence from text**, both literary and informational

The Standards place a premium on students writing to sources, i.e., using evidence from texts to present careful analyses, well-defended claims, and clear information. Rather than asking students questions they can answer solely from their prior knowledge or experience, the Standards expect students to answer questions that depend on their having read the text or texts with care. The Standards also require the cultivation of narrative writing throughout the grades, and in later grades a command of sequence and detail will be essential for effective argumentative and informational writing.

Likewise, the reading standards focus on students' ability to read carefully and grasp information, arguments, ideas and details based on text evidence. Students should be able to answer a range of *text-dependent* questions, questions in which the answers require inferences based on careful attention to the text.

3. **Building knowledge** through **content-rich nonfiction**

Building knowledge through content rich non-fiction plays an essential role in literacy and in the Standards. In K–5, fulfilling the standards requires a 50–50 balance between informational and literary reading. Informational reading primarily includes content rich non-fiction in history/social studies, science and the arts; the K–5 Standards strongly recommend that students build coherent general knowledge both within each year and across years. In 6–12, ELA classes place much greater attention to a specific category of informational text—literary nonfiction—than has been traditional. In grades 6–12, the Standards for literacy in history/social studies, science and technical subjects ensure that students can independently build knowledge in these disciplines through reading and writing.

To be clear, the Standards do require substantial attention to literature throughout K–12, as half of the required work in K–5 and the core of the work of 6–12 ELA teachers.

What is the LearnZillion definition of close reading?

At LearnZillion, we are defining close reading as the process of reading and rereading a complex text over an extended period of time in order to develop grade level thinking skills, as well as word and world knowledge. In the LearnZillion close reading model, close reading lessons take place over a 5-day period. During this time, students explore and analyze the text at the word, phrase, sentence, paragraph/section, and whole text level with the goal of uncovering multiple layers of meaning through a scaffolded approach. Teachers play a critical role in the close reading process not only by posing carefully crafted and sequenced text-dependent questions and guiding productive discussions, but also through modeling, think-alouds, and direct instruction that is essential to developing student reading skills. The ultimate goal of close reading, in concert with other essential instructional practices, is to grow strong readers who are equipped to tackle complex text independently and who take joy in the process of reading, writing, and thinking about text.

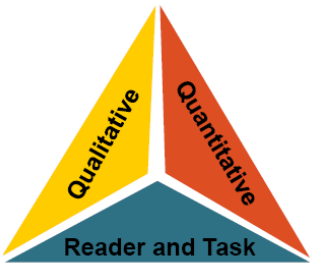
LearnZillion Close Reading Lesson Plans have the following features:

- Close reading and re-reading of a text over five sessions.
- Lessons are ~45 minutes long.
- Texts used in lessons are short, complex texts (including picture books) or passages from a longer text, that fall within the recommended Lexile band of the given grade-level. Teachers play a critical role in supporting all students, regardless of their reading abilities, to access the text.
- Students engage in writing and speaking about the text and use evidence to justify and support ideas.
- Student engagement with the text is critical not only for making meaning of it but also for skill growth and mastery.
- Student mastery is measured through participation in accountable discussion and a range of written products, such as short written responses of one to ten sentences, longer written pieces, and other products such as notes and sketches.

Guide to Selecting a Complex Text for Close Reading: 4 Considerations

1. Consider text complexity

- Three measures of text complexity:
    - Qualitative
    - Quantitative
    - Reader & Task



- Hard words don't automatically mean that a text is complex! The difficulty of the words (readability) is just one measure of text complexity. A text can contain words that are easier to read and still be complex due to its qualitative measures or due to the specific reader or task.

- Become familiar with the levels of text complexity for your grade level band.

- Become familiar with common texts within your grade level band.

- Complex texts should stretch towards the higher end of the grade level complexity band to ensure that all students are given access to and are being taught how to comprehend grade-level texts. If a complex text is beyond a student's independent reading level, the teacher will use instructional scaffolds to ensure access to the text.

> *"Complex texts require a slower labor. Readers can't proceed to the next paragraph without grasping the previous one, they can't glide over unfamiliar words and phrases, and they can't forget what they read four pages earlier. They must double back, discern ambiguities, follow tricky transitions, and keep a dictionary close at hand. Complex texts force readers to acquire the knack of slow linear reading. If they rarely encounter complex texts, young students won't even realize that such a reading tack is a necessary means of learning. Unready students might be just as intelligent and motivated as the ready ones are, but they don't possess the habits and strategies needed to carry on."*
>
> Mark Bauerlein, "Too Dumb for Complex Texts?" Educational Leadership, February 2011

A Balance of Three Measures of Text Complexity

Measure	How Measured?	Example
Qualitative	**By an attentive reader:** Levels of meaning/purpose, structure, language conventionality and clarity, knowledge demands, emotional/age-appropriateness	Qualitative Measures Rubric for Literary and Informational text Fountas & Pinnell Levels
Quantitative	**By computer software:** Readability measures, including word and sentence analysis	Lexile (see "Lexile Ranges" chart on the following page") Fry ATOS
Matching Text to Reader and Task	**By a skilled educator:** Considerations of reader and considerations of task	Motivation Knowledge Experiences Emotional/age-appropriateness Purpose of task Complexity of task Complexity of questions posed

Common Core State Standards Text Complexity Bands and Associated Lexile Ranges
From the Common Core State Standards for English Language Arts Literacy in History/social studies, science, and technical subjects, Appendix A

Text Complexity Grade Band in the Standards	Old Lexile Ranges	Lexile Ranges Aligned to College and Career Readiness (CCR) expectations**
K-1*	N/A	N/A
2-3	450L-725L	420L-820L
4-5	645L -845L	740L-1010L
6-8	860L -1010L	925L-1185L
9-10	960L -1115L	1050L-1335L
11-CCR	1070L-1220L	1185L-1385L

*Note that there are not Lexile ranges for grades K-1, often texts for these grades are not suitable for quantitative analysis. Teachers of primary grades should conduct close readings in a read aloud format.

**Certain genres of text, particularly poetry, are not suitable for quantitative analysis. Rich close reads of these texts can and should still be done. For poetry, teachers should heavily weigh reader and task considerations when selecting a poem.

2. Consider your readers

- Reflect on your students as readers, including studying their reading data.
- What types and kinds of texts have been complex for your students? Why?
- What specific reading tasks have been complex for your students? Why?
- In close reading, students should struggle and grapple with texts that are increasingly complex for them. This is an opportunity for students to take reading strategies and turn them into automatic skills through instruction and practice.

3. Consider worth and length of text

- Does the text you're considering merit a deep dive and require repeated readings for true comprehension?
- An ideal text for close reading is rich and contains many teaching and thinking possibilities.
- Not every text should be read through close reading. Close reading is one structure within a teaching repertoire, and some wonderful texts that you love may not be good candidates for a close reading.
- Short texts work best! In a complex text, the reader will need to engage in multiple readings. Constraining the length of the text allows the reader to focus on more in a shorter period of time.
- Teachers may focus on a shorter section of a longer text. Complexity levels for the longer text may not be the same for the short section you choose. Be sure to evaluate the short section on its own merits.

4. Consider purpose for using text

- What units, genres, and/or kinds of texts will you be teaching next?
- Are there any genres or sub-genres that have been particularly complex for your students?
- Is there a genre or kind of text you've already taught that you'd like to teach again or that, based on student achievement, you need to teach again?
- Is there a genre or kind of text you've been unsuccessful with?

Online sources for texts

Can't find a text? Try looking for high quality, short texts for close reading using these resources.

Kindergarten - 5th grade

- National Geographic for Kids
- Time for Kids
- Ranger Rick
- ReadWorks
- Newsela
- Cricket Magazine
- Washington Post for Kids
- Project Gutenberg (public domain stories and poems, e.g., fairytales)
- America's Library (from the Library of Congress)
- Federal agency websites for kids (e.g., NASA Kids' Club, NOAA Education Resources)

Grades 6 -12

- Project Gutenberg (public domain stories and poems)
- Smithsonian Magazine
- Newsela
- National Geographic
- National Archives
- Washington Post for Kids (Kids' Post)
- Newspaper or news magazine articles/opinion pieces
- Federal agency websites for kids (e.g., NASA Kids' Club, NOAA Education Resources)

Annotation: A critical close reading tool

What is annotating?

Annotating is the process of marking and taking notes **on a text** to make the most of the reading process. Usually this includes highlighting, underlining, circling, arrows, and making notes in the form of paraphrasing, summary, or original ideas.

Why annotate?

Whether you're annotating as an adult reader, as a teacher planning your close reading, or guiding your *students* to annotate, annotation is an important part of finding meaning in the text and a critical element of close reading. It serves to deepen comprehension by thinking beyond the words and it makes it easy to go back to the text to find important information or key moments. This supports Common Core instructional shifts such as close reading and writing-about-reading. As a teacher, it's not only important to help your students annotate, it is also critical that ***you*** annotate the texts you plan to teach as an early step in planning for close reading.

How do you annotate?

There are many approaches to annotating a text, but the key is that your annotations should go beyond noting the plot or the important facts. Your annotations should dig below the surface to reveal your observations about connections across the text, repeated themes, symbols, words, questions that you still have, and the bigger points the author is trying to make. Here's one process that you may want to try:

- Read the text the first time through, noting unfamiliar or difficult words or concepts.

- Reread the text many times, each time with a different lens. Depending on your purpose for reading, lenses you apply might include:
    - Important ideas, key understandings, big takeaways, deeper meaning, author's message
    - Development of ideas or arguments across a text
    - Relationships between ideas and elements in the text or story (characters, setting, plot, etc.)
    - Significant craft moves such as organization and structure, use of metaphor, imagery, symbolism, tone, and mood
    - Vocabulary and word choice
    - Use of rhyme or rhythm
    - Use of illustrations or other text features
    - Common Core State Standards in your grade-level. Are there any standards that the text simply "screams" to teach?

- When reading longer texts, it's important to annotate across the text. Paraphrasing or summarizing key sections or chapters, jotting down what stands out, or even creating a new "title" for each chapter can help readers pick up the text later and remember its meaning so far.

- Develop a system of annotation that is meaningful to you. For example, check marks could indicate ideas or arguments you find particularly strong, stars could mark evidence, boxes or circles could indicate Tier 2 and Tier 3 vocabulary, exclamation points could note important or surprising moments, and question marks highlight confusing places.

What does annotation look like?

What annotation looks like can vary widely depending on the person and the text. For example, when reading poetry, annotation tends to be much more dense, whereas in longer texts, there may be less annotation. The bottom line, however, is that annotating a text is a personal process that reflects the individual reader's approach to making meaning of text. The following page shows an example annotated text, and more examples can be found online.

Speech on the Assassination of Martin Luther King

By Robert F. Kennedy

Delivered on April 4, 1968 in Indianapolis, Indiana

audience

In April 1968, Robert F. Kennedy was running for President of the United States. His older brother, former President John F. Kennedy, had been shot and killed four-and-a-half years earlier in Dallas, Texas. While on the way to speak to a large, mostly African American crowd in downtown Indianapolis, Kennedy learned of the assassination of Martin Luther King, Jr. Many in the crowd had not yet heard the news, and Kennedy's staff worried that it could spark riots and violence. Kennedy delivered the following speech. While the news of King's death did result in rioting in cities across the country, Indianapolis remained relatively calm. Two months later, Kennedy himself was shot and killed in California.[1]

How is the meaning of the speech impacted knowing RFK is assassinated months later?

Ladies and Gentlemen,

I'm only going to talk to you just for a minute or so this evening, because I have some -- some very sad news for all of you -- Could you lower those signs, please? -- I have some very sad news for all of you, and, I think, sad news for all of our fellow citizens, and people who love peace all over the world; and that is that Martin Luther King was shot and was killed tonight in Memphis, Tennessee.

audience

item - so violently killed

Martin Luther King dedicated his life to love and to justice between fellow human beings. He died in the cause of that effort. In this difficult day, in this difficult time for the United States, it's perhaps well to ask what kind of a nation we are and what direction we want to move in. For those of you who are black -- considering the evidence evidently is that there were white people who were responsible -- you can be filled with bitterness, and with hatred, and a desire for revenge.

what does this mean?

We can move in that direction as a country, in greater polarization -- black people amongst blacks, and white amongst whites, filled with hatred toward one another. Or we can make an effort, as Martin Luther King did, to understand, and to comprehend, and replace that violence, that stain of bloodshed that has spread across our land, with an effort to understand, compassion, and love.

difference?

difference?

For those of you who are black and are tempted to fill with -- be filled with hatred and mistrust of the injustice of such an act, against all white people, I would only say that I can also feel in my own heart the same kind of feeling. I had a member of my family killed, but he was killed by a white man.

Why not 'and'?

But we have to make an effort in the United States. We have to make an effort to understand, to get beyond, or go beyond these rather difficult times.

what are the dashes for?

My favorite poem, my -- my favorite poet was Aeschylus. And he once wrote:

from Agamemnon

Ancient Greek play

Even in our sleep, pain which cannot forget
falls drop by drop upon the heart,
until, in our own despair, - uses 'despite'
against our will,
comes wisdom
through the awful grace of God. ← oxymoron

What is RFK's point? he can't generalize about killer?

What we need in the United States is not division; what we need in the United States is not hatred; what we need in the United States is not violence and lawlessness, but is love, and wisdom, and

Rule of 3

contrast

compassion toward one another, and a feeling of justice toward those who still suffer within our country, whether they be white or whether they be black. -speaks to everybody's pain.

So I ask you tonight to return home, to say a prayer for the family of Martin Luther King -- yeah, it's true -- but more importantly to say a prayer for our own country, which all of us love -- a prayer for understanding and that compassion of which I spoke.

We can do well in this country. We will have difficult times. We've had difficult times in the past, but we -- and we will have difficult times in the future. It is not the end of violence; it is not the end of lawlessness; and it's not the end of disorder. Rule of 3/ tone

But the vast majority of white people and the vast majority of black people in this country want to live together, want to improve the quality of our life, and want justice for all human beings that abide in our land.

the vision

And let's dedicate ourselves to what the Greeks wrote so many years ago: to tame the savageness of man and make gentle the life of this world. Let us dedicate ourselves to that, and say a prayer for our country and for our people.

Thank you very much.

same contrast/word choice

appeal to a higher force

revisate 'difficult times' to live the vision of 'justice, understanding & compassion' - the goal of MLK.

[1] Boomhower, Ray E. (2008). *Robert F. Kennedy and the 1968 Indiana Primary.* Bloomington, IN: Indiana University Press.

Guide to facilitating successful text talks with your colleagues

Why start the close reading planning process with text talks?

The Common Core State Standards demand that students read and comprehend complex literary and informational texts and speak and write logically, using evidence to support their conclusions, about the text. The first, and oft-overlooked, step to moving students to meet the Standards, however, is making sure that we as instructional leaders fully understand the meaning of texts ourselves. Implementing a text-talk with your colleagues is a great place to start this process and help you prepare for teaching a complex text at the level of the Standards. Sometimes, this process can reveal new or more nuanced understandings of a text that you have taught for many years. By tapping into the wisdom and expertise of your colleagues, text talks can jump start your planning for a given text.

Step 1: Select a text and a "team"

We recommend working in grade-level or grade-band teams of three to six colleagues. Working with a team that represents different subject areas and experience levels will add to the richness of your discussion. All Common Core State Standards support literacy, so don't overlook your colleagues in other content areas and ancillary subjects such as art and physical education. There are many different factors that go into selecting a text for a text-talk. In addition to text-complexity considerations, you will want choose a text that is short enough for you and your colleagues. You may also want to focus on a text that you plan on teaching in the upcoming weeks.

Step 2: Read the text independently, annotating

Share the text with your team at least a few days in advance of the text talk and set the expectation that everyone will arrive at the talk having read and annotated the text at least once. The more deeply and thoroughly your colleagues have read the text, the more successful your talk will be.

Step 3: Come together for a text talk

We've found that the following agenda works well (times are suggestions only and can vary depending on time available):

I) Welcome your team to the text talk (1 minute)
II) Introduce the objectives of the text talk (5 minutes)
   a. Enjoying the text together
   b. Completing a text-complexity analysis
   c. Identifying the big takeaways in the text and the textual evidence that led to this thinking
III) Start by discussing the text as adult readers (take your teacher hat off) using the guiding questions on the next page (15-25 minutes).
IV) Move into a discussion of text-complexity using the qualitative rubrics as necessary and the guiding questions on the next page (15-25 minutes). Chart your thinking on a text-analysis template.
V) Reflect together (10 minutes).
   a. How did the text talk change your initial conclusions about the text?
   b. Did your understanding of text-complexity shift?
   c. What next steps can we take to integrate these insights into our instruction?

Guiding Questions for Text Talks

Use the questions below as a guide and jumping off place for exploring your text.

Take your teacher-hat off:

- What sections or moments of the text speak to you? Why?
- What choices did the author make about introducing information or telling the story?
- What "craft moves" (e.g. structure, word choice, figurative language, etc.) stand out to you?
- How does the author develop ideas, arguments, or themes across the text?
- How does the author use words and phrases for effect? What other literary devices jump out at you?
- What or who in the text do you want to know more about?
- Are there parts where you needed to slow down or reread? What caused you to do this?
- Why did the author write this text in this way?
- What message, theme, or central idea do you take away from this text?

With your teacher hat on:

- What is the big takeaway that you would want a student to understand after studying this text?
- Which parts of the text are the most challenging? Where will students struggle the most? Why?
- What questions are worth exploring further?
- What is left unsaid in the text? Why?
- What choices did the author make in the way that he/she introduced information and/or told the story? Why did he/she make these choices? What is their effect?
- What does the text simply "scream" for you to teach?
- As a reader, what do you gravitate towards in this text? What is most interesting to you? Why?
- What standards in your grade-level seem particularly well-suited to teach using this text?

Text Complexity: Qualitative Measures Rubric[1]

LITERATURE

Text Title_____ Text Author_____

	Exceedingly Complex	Very Complex	Moderately Complex	Slightly Complex
TEXT STRUCTURE	○ **Organization:** Is intricate with regard to such elements as point of view, time shifts, multiple characters, storylines and detail ○ **Use of Graphics:** If used, illustrations or graphics are essential for understanding the meaning of the text	○ **Organization:** May include subplots, time shifts and more complex characters ○ **Use of Graphics:** If used, illustrations or graphics support or extend the meaning of the text	○ **Organization:** May have two or more storylines and occasionally be difficult to predict ○ **Use of Graphics:** If used, a range of illustrations or graphics support selected parts of the text	○ **Organization:** Is clear, chronological or easy to predict ○ **Use of Graphics:** If used, either illustrations directly support and assist in interpreting the text or are not necessary to understanding the meaning of the text
LANGUAGE FEATURES	○ **Conventionality:** Dense and complex; contains abstract, ironic, and/or figurative language ○ **Vocabulary:** Complex, generally unfamiliar, archaic, subject-specific, or overly academic language; may be ambiguous or purposefully misleading ○ **Sentence Structure:** Mainly complex sentences with several subordinate clauses or phrases; sentences often contain multiple concepts	○ **Conventionality:** Fairly complex; contains some abstract, ironic, and/or figurative language ○ **Vocabulary:** Fairly complex language that is sometimes unfamiliar, archaic, subject-specific, or overly academic ○ **Sentence Structure:** Many complex sentences with several subordinate phrases or clauses and transition words	○ **Conventionality:** Largely explicit and easy to understand with some occasions for more complex meaning ○ **Vocabulary:** Mostly contemporary, familiar, conversational; rarely unfamiliar or overly academic ○ **Sentence Structure:** Primarily simple and compound sentences, with some complex constructions	○ **Conventionality:** Explicit, literal, straightforward, easy to understand ○ **Vocabulary:** Contemporary, familiar, conversational language ○ **Sentence Structure:** Mainly simple sentences
MEANING	○ **Meaning:** Multiple competing levels of meaning that are difficult to identify, separate, and interpret; theme is implicit or subtle, often ambiguous and revealed over the entirety of the text	○ **Meaning:** Multiple levels of meaning that may be difficult to identify or separate; theme is implicit or subtle and may be revealed over the entirety of the text	○ **Meaning:** Multiple levels of meaning clearly distinguished from each other; theme is clear but may be conveyed with some subtlety	○ **Meaning:** One level of meaning; theme is obvious and revealed early in the text.
KNOWLEDGE DEMANDS	○ **Life Experiences:** Explores complex, sophisticated or abstract themes; experiences portrayed are distinctly different from the common reader ○ **Intertextuality and Cultural Knowledge:** Many references or allusions to other texts or cultural elements	○ **Life Experiences:** Explores themes of varying levels of complexity or abstraction; experiences portrayed are uncommon to most readers ○ **Intertextuality and Cultural Knowledge:** Some references or allusions to other texts or cultural elements	○ **Life Experiences:** Explores several themes; experiences portrayed are common to many readers ○ **Intertextuality and Cultural Knowledge:** Few references or allusions to other texts or cultural elements	○ **Life Experiences:** Explores a single theme; experiences portrayed are everyday and common to most readers ○ **Intertextuality and Cultural Knowledge:** No references or allusions to other texts or cultural elements

[1] Adapted from Appendix A: Research Supporting Key Elements of the Standards, Common Core State Standards for English Language Arts and Literacy in History/Social Studies and Science and Technical Subjects (2010).

Text Complexity: Qualitative Measures Rubric

INFORMATIONAL TEXTS

Text Title_____ Text Author_____

	Exceedingly Complex	Very Complex	Moderately Complex	Slightly Complex
TEXT STRUCTURE	○ **Organization:** Connections between an extensive range of ideas, processes or events are deep, intricate and often ambiguous; organization is intricate or discipline-specific ○ **Text Features:** If used, are essential in understanding content ○ **Use of Graphics:** If used, intricate, extensive graphics, tables, charts, etc., are extensive are integral to making meaning of the text; may provide information not otherwise conveyed in the text	○ **Organization:** Connections between an expanded range ideas, processes or events are often implicit or subtle; organization may contain multiple pathways or exhibit some discipline-specific traits ○ **Text Features:** If used, directly enhance the reader's understanding of content ○ **Use of Graphics:** If used, graphics, tables, charts, etc. support or are integral to understanding the text	○ **Organization:** Connections between some ideas or events are implicit or subtle; organization is evident and generally sequential or chronological ○ **Text Features:** If used, enhance the reader's understanding of content ○ **Use of Graphics:** If used, graphic, pictures, tables, and charts, etc. are mostly supplementary to understanding the text	○ **Organization:** Connections between ideas, processes or events are explicit and clear; organization of text is chronological, sequential or easy to predict ○ **Text Features:** If used, help the reader navigate and understand content but are not essential to understanding content. ○ **Use of Graphics:** If used, graphic, pictures, tables, and charts, etc. are simple and unnecessary to understanding the text but they may support and assist readers in understanding the written text
LANGUAGE FEATURES	○ **Conventionality:** Dense and complex; contains considerable abstract, ironic, and/or figurative language ○ **Vocabulary:** Complex, generally unfamiliar, archaic, subject-specific, or overly academic language; may be ambiguous or purposefully misleading ○ **Sentence Structure:** Mainly complex sentences with several subordinate clauses or phrases and transition words; sentences often contains multiple concepts	○ **Conventionality:** Fairly complex; contains some abstract, ironic, and/or figurative language ○ **Vocabulary:** Fairly complex language that is sometimes unfamiliar, archaic, subject-specific, or overly academic ○ **Sentence Structure:** Many complex sentences with several subordinate phrases or clauses and transition words	○ **Conventionality:** Largely explicit and easy to understand with some occasions for more complex meaning ○ **Vocabulary:** Mostly contemporary, familiar, conversational; rarely overly academic ○ **Sentence Structure:** Primarily simple and compound sentences, with some complex constructions	○ **Conventionality:** Explicit, literal, straightforward, easy to understand ○ **Vocabulary:** Contemporary, familiar, conversational language ○ **Sentence Structure:** Mainly simple sentences
PURPOSE	○ **Purpose:** Subtle and intricate, difficult to determine; includes many theoretical or abstract elements	○ **Purpose:** Implicit or subtle but fairly easy to infer; more theoretical or abstract than concrete	○ **Purpose:** Implied but easy to identify based upon context or source	○ **Purpose:** Explicitly stated, clear, concrete, narrowly focused
KNOWLEDGE DEMANDS	○ **Subject Matter Knowledge:** Relies on extensive levels of discipline-specific or theoretical knowledge; includes a range of challenging abstract concepts ○ **Intertextuality:** Many references or allusions to other texts or outside ideas, theories, etc.	○ **Subject Matter Knowledge:** Relies on moderate levels of discipline-specific or theoretical knowledge; includes a mix of recognizable ideas and challenging abstract concepts ○ **Intertextuality:** Some references or allusions to other texts or outside ideas, theories, etc.	○ **Subject Matter Knowledge:** Relies on common practical knowledge and some discipline-specific content knowledge; includes a mix of simple and more complicated, abstract ideas ○ **Intertextuality:** Few references or allusions to other texts or outside ideas, theories, etc	○ **Subject Matter Knowledge:** Relies on everyday, practical knowledge; includes simple, concrete ideas ○ **Intertextuality:** No references or allusions to other texts, or outside ideas, theories, etc.

Support for using the Qualitative Rubrics

Meaning/Central Ideas	Text Structure/Organization
• How dense and complex are the ideas presented in the text? • How many levels of meaning are included? • Are the levels of meaning clearly stated? • Is the purpose of the text clear? • How clear is the theme or message? How hard does the reader have to work to determine theme or message?	• How simple or complex is the structure and the connections between ideas? • Does the author follow or bend the rules of a specific genre? • Does the text follow traditional text structures that the reader could use to support their reading? • Does the narrative follow chronological order, or is time used more complexly? • How reliable is the narrator? Does the narrator stay consistent through the text? Does the narrator have a complete or a limited perspective? • What text features are included to help the reader navigate the text? • What graphics or illustrations are included, how easy are they to understand, and how vital are they to understanding the main ideas of the text?
Prior Knowledge Demands	**Language Features**
• How much content knowledge or background knowledge does a reader need to have to access the text? • Would a typical student at this grade level have gained this knowledge in his or her personal life or academic experiences or is the story clearly fantastical? • Is the cultural knowledge/perspective included in the text likely to match up with the cultural experiences of a typical student at this grade level? • Does the text require the reader to be familiar with other texts?	• How conventional and clear is the language of the text? • Is the text written in standard English, or is a variation (such as regional dialects or vernaculars) used? • Is the language modern and conversational, or is it archaic, formal, scholarly, or from only one certain time period? • Are literary devices (such as metaphors, personification, symbolism, irony, idioms, or clichés) used? • Are the sentences straightforward or complex?

This document includes information adapted from Rigorous Reading by Nancy Frey and Douglas Fisher (2013), Falling in Love with Close Reading by Christopher Lehman and Kate Roberts (2013), and Student Achievement Partners' "Companion to the Qualitative Dimensions Scale." See these resources for further information.

Identifying and sorting high value vocabulary words

As the Common Core State Standards demand the use of more complex texts in classrooms across the country, it is imperative to rethink one of the biggest obstacles to comprehension--vocabulary. Making meaning of text is directly connected to knowing the meaning of words as they are used in context. Yet, so may of us struggle to find the time or an effective means for teaching vocabulary to our students regardless of their individual reading level. Close reading offers teachers a new pathway to incorporating more vocabulary into instruction and student learning.

Three Tiers of words
Appendix A of the Common Core State Standards notes that the three "tiers" of words outlined by Isabel L. Beck, et. al. (2002, 2008) are a helpful frame for sorting vocabulary words that students will encounter while reading.

- Tier 1: These words are common in everyday speech, typically learned in early grades, and will be very familiar to most native English speakers.
    - *Examples: house, walk, skinny, red*

- Tier 2: Sometimes called "general academic vocabulary" these words are more likely to appear in written texts than in speech and often represent more nuanced or precise language
    - *Examples: dwelling, traipse, gaunt, crimson*

- Tier 3: These are referred to in the Standards as domain-specific words and are those specific to a particular topic or field of study. They are often key to understanding information and concepts in non-fiction texts and are frequently defined within the text or text features
    - *Examples: ecosystem, bipedalism, cachectic, erythematous*

While all three tiers are critical for readers' comprehension, Tier 2 and Tier 3 words typically demand more deliberate teaching time.

Steps for identifying worthy vocabulary words in a complex text
1. Reread your text and earlier annotations noting the Tier 2 and Tier 3 vocabulary words.
2. Note the "high value" words by asking yourself:
    - "Which of these words are essential to understanding the text?"
    - "Which of these words have a high potential for appearing in future texts or in life?"
    - "Which of these words are inherently valuable teaching opportunities (e.g., are part of a word family, use common roots, prefixes and suffixes, etc.)?"
3. Jot your notes in the vocabulary analysis quadrant template.

Further Reading

Common Core State Standards for English Language and Literacy in History/Social Studies, Science and Technical Subjects Appendix A: Research Supporting Key Elements of the Standards, "Vocabulary," pages 32-35.

Liben, David. "Which Words do I Teach and How?" Student Achievement Partners, 2013, http://achievethecore.org/content/upload/Liben_Vocabulary_Article.pdf

Example vocabulary quadrant from the text "When I grow up, I want to be" (4th grade)

	Words that demand less teaching time (i.e. the definition is singular and concrete)	**Words that demand more teaching time (i.e. words with multiple meanings and/or that are part of a word family)**
Words that can be determined in context	• Neurosurgeon (Tier 3) • Dyslexia (Tier 3) • Primates (Tier 3) • Lemur (Tier 3) • Jungle (Tier 2) • Endangered (Tier 2) • Uakari (Tier 3) • Microphone (Tier 2) • Trophy (Tier 2) • Amazon (Tier 2) Although these words can likely be determined in context, given their concrete and singular nature, they do not need excessive exploration or classroom time. The teacher will give definitions to students directly during the read aloud. Depending on grade-level, students may define these words using notes on the text as they follow along during the read aloud.	• Operates (Tier 2) • Pursue (Tier 2) • Bookworm (Tier 2) • Skyrocketed (Tier 2) • Misbehaved (Tier 2) Vocabulary in this quadrant can be defined in context and offers value to building student word knowledge because they are likely to have multiple meanings or occur frequently in text and life. These words may be used to teach students how to use context clues to define an unfamiliar word and are the subject of a text-dependent question (e.g., "What does the word…mean in that sentence? How do you know?").
Words that cannot be determined in context	• Captivity (Tier 2) • Scholarships (Tier 2) • Tarzan (Tier 3) • Species (Tier 2) Like the words in the quadrant above, these words generally will have a singular and concrete meaning. However, they typically cannot be determined in context. They also may not offer as much value in building word knowledge, so teachers may simply give students the meaning quickly and directly.	• Anchor (news anchor) (Tier 2) • Foundation (Tier 2) • Order ("order of mammals") (Tier 3) • Order (as in, sequence) (Tier 2) • Impression (Tier 2) This group of words cannot be defined using context and will usually have multiple meanings. These are the words that demand teaching and discussion. They can be explored as part of a text-dependent question response or directly as the subject of a text-dependent question. This work builds both word and world knowledge.

Vocabulary Analysis Template (K-1 Supplement)

Use the guidance below to help you determine which words to address before, during, and after reading the text aloud.

	Words that demand less teaching time (i.e. the definition is singular and concrete)	**Words that demand more teaching time (i.e. words with multiple meanings and/or that are part of a word family)**
Words that can be determined in context	These words should be addressed…. ● Before initial read aloud ● Reinforced during read aloud and subsequent rereading (point to the word, give a quick definition).	These words should be addressed…. ● Through a supporting or focus text-dependent question.
Words that cannot be determined in context	These words should be addressed…. ● During read aloud, defined quickly in-context as you come across them during the read aloud or subsequent rereadings.	These words should be addressed…. ● Through a text-dependent question.

Big Takeaways

A big takeaway is the key idea that the teacher most wants students to get out of the text when they are finished reading. It is such a big understanding that if the student misses it, they will miss the point of reading the text! Many texts that are worthy of close reading and rereading have more than one big takeaway. One of the teacher's jobs is to determine one big takeaway to focus on, dependent on their purpose for reading the text with students. Think about the process of comprehending a text like climbing a mountain. The summit of the mountain is the big takeaway.

Big takeaways often include:

- theme
- author's point of view/purpose
- central idea
- author's claims
- a powerful craft move
- author's bias
- relationships between ideas
- procedures/processes
- character's relationships
- relationships among ideas in text

Examples of Big Takeaways:

- In *Little Red Riding-Hood*, author E. Louise Smythe teaches the lesson that you shouldn't talk to strangers through a series of events in which the characters' actions lead to Red Riding-Hood and Grandma being eaten by the wolf.
- Turning a dream into reality takes hard work and perseverance. The four professionals profiled in the article "When I Grow Up" had to overcome many obstacles to achieve their childhood dreams, including poverty, learning disabilities, behavioral challenges, and people who said that they would never be successful. By taking risks, persevering, and staying focused, the individuals in the article prove, that "the difference between wanting to do something when you grow up, and actually doing it, is how hard you work for it."
- Robert F. Kennedy made this speech in Indianapolis in front of a large African American audience who expected a campaign message; instead they were told of the assassination of Martin Luther King. Indianapolis was quiet that night while black communities in the rest of the country raged violently. Kennedy's speech had such a powerful impact because RFK was able to identify with his audience and send a very succinct and meaningful message.
- Throughout *All Summer in a Day,* Ray Bradbury uses figurative language and unexpected craft moves such as onomatopoeia, untagged dialogue, and personification in order to bring the setting to life. Bradbury casts the "raining world" of Venus in a role as important as any of the human characters in the story. Through his description and word choice, the setting becomes a pivotal force that drives nearly every interaction and moment in the plot.
- Leo is affected very differently by the different settings in the story. He has drastically different thoughts, words, and actions when he is at school than when he is at home and in the car. At school he is "slower than the rest" but outside of school he is fast, even though he doesn't think of himself as such.

Steps for Determining a Big Takeaway

1. Use your text annotations and text complexity analysis to begin to identify the big takeaway in your text:
   - Why am I using this text?
   - What makes this text complex?
   - What do I really want students to get out of reading and rereading this piece?
   - What should students understand after they read this text closely?
   - What conclusion(s) should students draw from this text?
   - What do students need to understand about the text in order to draw these conclusions?

2. Ensure that your big takeaway is about the whole text! Use the Pathway from Fisher and Frey to guide you to key ideas about the whole text.

   Word -> Sentence -> Paragraph -> Chunks -> Entire Text -> Across Texts

3. Vertically analyze the reading standards to find the "sweet spot" for the text and grade level.
   - Look at your idea for your big takeaway,
   - Ask, "What reading, analytical, or thinking skills did I have to apply in order to arrive at this understanding?" and "What comprehension skills did I need in order to draw these conclusions?"
   - Jot down the skills.
   - Review the standards at your grade level, looking for the key nouns/verbs/expectations that align with your list of skills. Especially focus on standards 2-9, since standard 1 is implicit in every question.
   - Once you have a standard that the takeaway addresses, do a vertical analysis by looking at the corresponding standards in the grade above and below asking, "What is the sweet spot for my grade-level?"
   - Reread the original takeaway asking, "Does this understanding as written really require the student to meet the grade-level standard?" Revise language of takeaway if necessary.

An example of vertical standards analysis:

Big Takeaway Idea: Throughout Chapter 1 of Charlotte's Web, Fern Arable is already set up by E.B. White to be a kind and thoughtful character. As an example of this, she convinces her father to not kill the pig, Wilbur.

Skills Needed: Name character traits that the character exhibits; provide an example.

3rd grade	4th grade	5th grade
RL.3 Describe characters in a story (e.g., their traits, motivations, or feelings) and explain how their actions contribute to the sequence of events.	**RL.3** Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text (e.g., a character's thoughts, words, or actions).	**RL.3** Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text (e.g., how characters interact).

Revised, Standards-Aligned Big Takeaway:
In Chapter 1 of Charlotte's Web, E.B. White establishes that Fern Arable is thoughtful, persistent, and passionate. She asks her father, "If I had been born small, would you have killed me?", which helps to convince her father to not kill the pig, Wilbur. Fern's reaction to being allowed to keep Wilbur as a pet shows her to be responsible, caring, and loving. For example, she teaches Wilbur how to drink milk from a bottle as though he were an "infant." At school, as she daydreams about her new pet, Fern is revealed to be a dreamer with an imagination.

Annotated Text Complexity Analysis Template

Text complexity analysis			
Created by:	*Your first and last name goes here.*	**Event/Date:**	*E.g., TeachFest Connecticut: Summer Academy, July '14*
Text and Author	*Insert the full title of your text and its author (E.g., "A Midsummer Night's Dream, Act 1, Scene 1" by William Shakespeare).*	**Where to Access Text**	*Directions for how teachers can find this text (E.g., "Download this text from Time for Kids" or "Check out from your school or local library").*

Text Description
Enter a brief description of this text here, just enough for someone who is unfamiliar with the text to get a basic summary and understand any major context or critical background.

Quantitative			
Lexile and Grade Level	*Insert Lexile Level and grade. Lexile levels can be found online using a source such as Lexile.com. Publishers of trade books also often include this information in the book jacket or make it available online.*	**Text Length**	*Insert approximate text length in words, if possible.*

Qualitative *Use the Qualitative Measures Rubrics to determine the particular features of your text that make it complex.*	
Meaning/Central Ideas	**Text Structure/Organization**
What are the big ideas in the text? Is there a single meaning, or are there multiple levels of meaning? How so? Are the big ideas stated explicitly? Can the ideas be easily inferred or are they difficult to determine?	*How is the text organized? How sophisticated are the means of relaying the information or story? Are there graphics to support or extend the meaning? Are connections between ideas explicit or implied?*
Prior Knowledge Demands	**Language Features**
Does comprehension of the text demand prior knowledge of particular events, processes, topics, or life experiences? To what extent does perspective of the author or characters shape the reader's ability to make meaning of the text or situation? Is there content or discipline-specific knowledge readers must have? Are there cultural references or literary allusions? Will familiarity with a particular genre (e.g., myths) or type (e.g., scientific reporting) of writing assist the reader?	*What language features do you notice? Is the language literal or are there figurative, connotative, or ironic uses? Is the language contemporary or archaic? Overall, is the vocabulary likely to be familiar to students or are there many new words?*

Potential Reader/Task Challenges
What motivational, emotional, comprehension skill, knowledge, or experience challenges does this task pose for readers at your grade-level? Thinking about the big ideas in the text and potential questions/tasks that may address those ideas, what challenges will this text pose for readers at your grade-level?

Big Takeaway
What is the key idea that you want students to get out of the text when they finish reading? If you see more than one, try to focus on the one that seems most relevant for your instructional goals and your students. Big takeaways often include: theme, author's bias, author's point of view/purpose, relationships between ideas, central ideas, procedures/processes, author's claims, character's relationships, a powerful craft moves, or relationships among ideas in text.

Annotated Vocabulary Analysis Template

	Words that demand less teaching time (i.e. the definition is singular and concrete)	Words that demand more teaching time (i.e. words with multiple meanings and/or that are part of a word family)
Words that can be determined in context	• *What words in the text can be determined in context?* • *And/or, which words have a concrete and singular definition and do not demand lengthy exploration?* • *Which words are you likely to "give" to students in-the-moment with a brief definition?*	• *What words in the text can be determined in context but also present opportunities to build student word knowledge?* • *Which words have multiple meanings or are likely to occur frequently in the future?*
Words that cannot be determined in context	• *What words in the text have a singular or concrete meaning but cannot be determined in context?* • *What words cannot be determined in context and are unlikely to appear frequently in the future?* • *Which words are you likely to "give" to students quickly and directly?*	• *What words in the text cannot be determined in context and have multiple meanings?* • *Which words are you most likely to spend class time exploring?* • *Which words present opportunities to build student word and world knowledge for the future?*

Text Complexity Analysis Template

Text complexity analysis			
Created by:		Event/Date:	
Text and Author		Where to Access Text	

Text Description

Quantitative			
Lexile and Grade Level		Text Length	

Qualitative	
Meaning/Central Ideas	Text Structure/Organization
Prior Knowledge Demands	Language Features

Potential Reader/Task Challenges

Big Takeaway

Vocabulary Analysis Template

	Words that demand less teaching time (i.e. the definition is singular and concrete)	Words that demand more teaching time (i.e. words with multiple meanings and/or that are part of a word family)
Words that can be determined in context		
Words that cannot be determined in context		

KidsPost

EVER WONDERED how it snows?

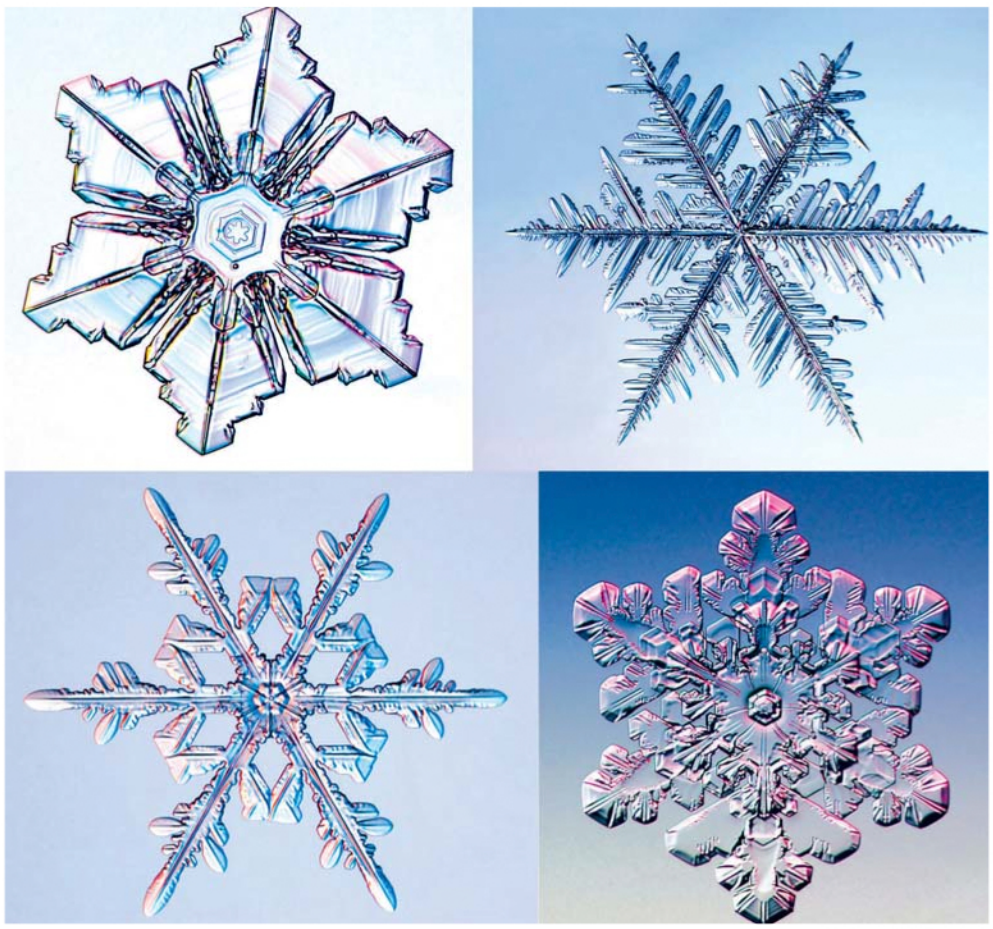
"Cumulonimbus" or "nimbostratus" may sound like names for your big brother after he steals your iPod and loads it with songs you don't like, but they are actually the names of clouds that most often bring snow.

Clouds are made of drops of water attached to foreign particles such as dust or pollen. When the temperature reaches 32 degrees or colder in a cloud, the droplets turn to small bits of ice. As the ice particles move through a cloud, they bump into other ice particles, creating snowflakes. When the snowflakes get heavy, gravity pulls them down. If it's cold enough below, they will hit the ground as snow.

It has snowed in every state, even Hawaii! But since it has to be cold to snow, it snows mostly in northern climates and places that are at high elevation. Elevation is how far above the sea a place sits. Mount Rainier in Washington state has an elevation of more than 14,000 feet. It's the snowiest place in the United States, getting about 680 inches (about 57 feet) a year. In the area around Washington, D.C., it usually snows about 17 inches a year — although we've already had more than that this winter!

It is never too cold to snow, but prime snow conditions are often associated with milder temperatures. That's because very cold air is usually dry, meaning it doesn't contain much water. If there is no water in the air, then there is no potential for snow.

It's true that no two snowflakes are identical, but they are all hexagonal, meaning they have six sides. In 1951, the International Commission on Snow and Ice began classifying snowflakes into 16 categories.



KENNETH G. LIBBRECHT

No two snowflakes are identical, but all have something in common: a hexagonal shape.

Most snowflakes are less than half an inch across, but some measure almost two inches. No one knows for sure how big snowflakes can be. (Can you *imagine* trying to measure all the snowflakes that fall in the world? That would be a big job!) A California physicist named Ken Libbrecht does study snowflakes, however. On his Web site (*www.snowcrystals.com*), he encourages people to use a magnifying glass to check out flakes for themselves. He calls snowflakes "remarkably complex and beautiful structures."

For adults who don't get the day off when it snows, snow can be a pain. For you, snow can mean no school, sledding and hot chocolate. And that is truly beautiful, too!

— Moira E. McLaughlin

Speech on the Assassination of Martin Luther King

By Robert F. Kennedy

Delivered on April 4, 1968 in Indianapolis, Indiana

In April 1968, Robert F. Kennedy was running for President of the United States. His older brother, former President John F. Kennedy, had been shot and killed four-and-a-half years earlier in Dallas, Texas. While on the way to speak to a large, mostly African American crowd in downtown Indianapolis, Kennedy learned of the assassination of Martin Luther King, Jr. Many in the crowd had not yet heard the news, and Kennedy's staff worried that it could spark riots and violence. Kennedy delivered the following speech. While the news of King's death did result in rioting in cities across the country, Indianapolis remained relatively calm. Two months later, Kennedy himself was shot and killed in California.[1]

Ladies and Gentlemen,

I'm only going to talk to you just for a minute or so this evening, because I have some -- some very sad news for all of you -- Could you lower those signs, please? -- I have some very sad news for all of you, and, I think, sad news for all of our fellow citizens, and people who love peace all over the world; and that is that Martin Luther King was shot and was killed tonight in Memphis, Tennessee.

Martin Luther King dedicated his life to love and to justice between fellow human beings. He died in the cause of that effort. In this difficult day, in this difficult time for the United States, it's perhaps well to ask what kind of a nation we are and what direction we want to move in. For those of you who are black -- considering the evidence evidently is that there were white people who were responsible -- you can be filled with bitterness, and with hatred, and a desire for revenge.

We can move in that direction as a country, in greater polarization -- black people amongst blacks, and white amongst whites, filled with hatred toward one another. Or we can make an effort, as Martin Luther King did, to understand, and to comprehend, and replace that violence, that stain of bloodshed that has spread across our land, with an effort to understand, compassion, and love.

For those of you who are black and are tempted to fill with -- be filled with hatred and mistrust of the injustice of such an act, against all white people, I would only say that I can also feel in my own heart the same kind of feeling. I had a member of my family killed, but he was killed by a white man.

But we have to make an effort in the United States. We have to make an effort to understand, to get beyond, or go beyond these rather difficult times.

My favorite poem, my -- my favorite poet was Aeschylus. And he once wrote:

> *Even in our sleep, pain which cannot forget*
> *falls drop by drop upon the heart,*
> *until, in our own despair,*
> *against our will,*
> *comes wisdom*
> *through the awful grace of God.*

What we need in the United States is not division; what we need in the United States is not hatred; what we need in the United States is not violence and lawlessness, but is love, and wisdom, and compassion toward one another, and a feeling of justice toward those who still suffer within our country, whether they be white or whether they be black.

So I ask you tonight to return home, to say a prayer for the family of Martin Luther King -- yeah, it's true -- but more importantly to say a prayer for our own country, which all of us love -- a prayer for understanding and that compassion of which I spoke.

We can do well in this country. We will have difficult times. We've had difficult times in the past, but we -- and we will have difficult times in the future. It is not the end of violence; it is not the end of lawlessness; and it's not the end of disorder.

But the vast majority of white people and the vast majority of black people in this country want to live together, want to improve the quality of our life, and want justice for all human beings that abide in our land.

And let's dedicate ourselves to what the Greeks wrote so many years ago: to tame the savageness of man and make gentle the life of this world. Let us dedicate ourselves to that, and say a prayer for our country and for our people.

Thank you very much.

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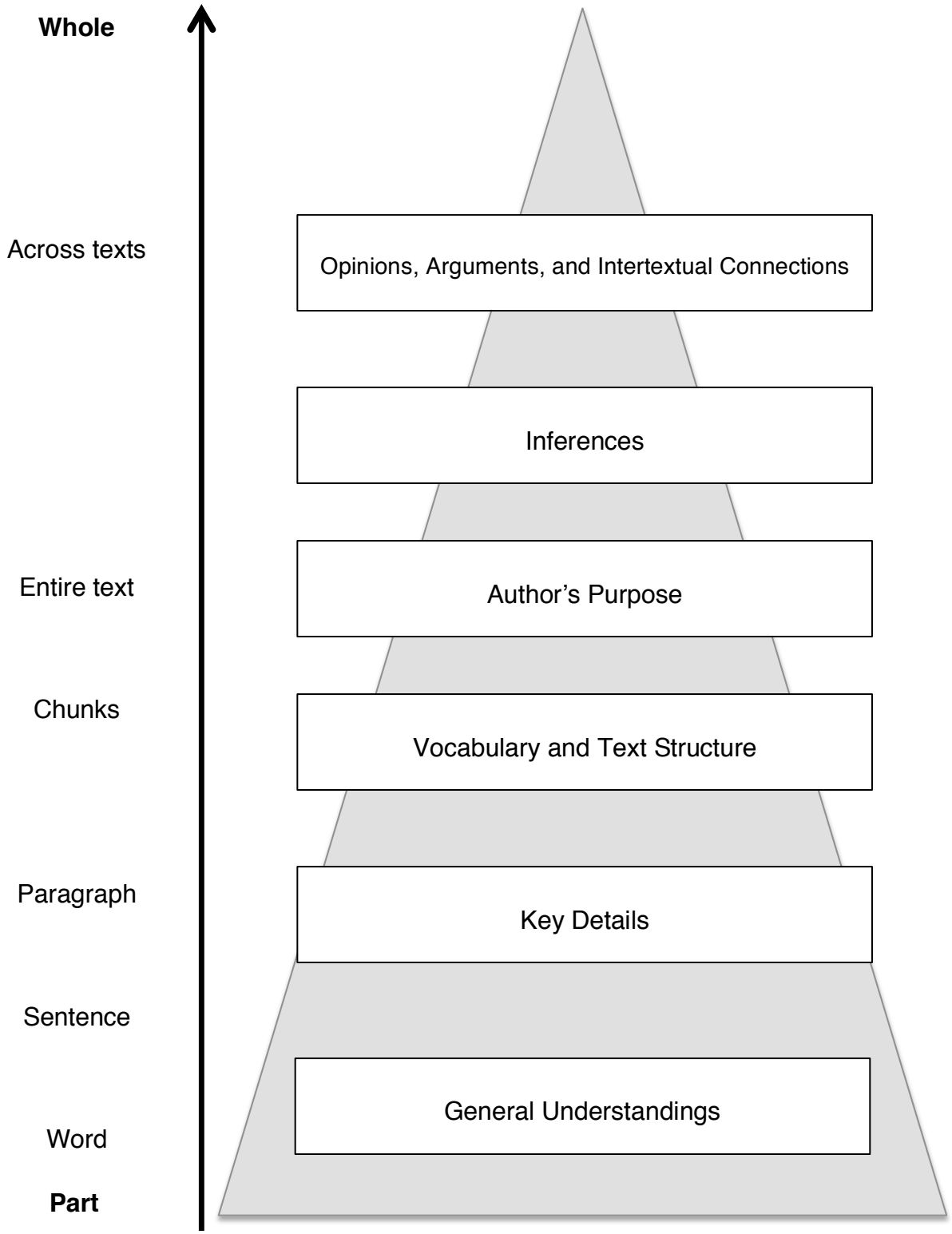
[1] Boomhower, Ray E. (2008). *Robert F. Kennedy and the 1968 Indiana Primary*. Bloomington, IN: Indiana University Press.

Pathways for Considering Ideas in Texts



Adapted from: Frey, Nancy and Douglas Fisher, *Rigorous Reading: 5 Access Points for Comprehending Complex Texts*, Corwin Literacy, London: 2013. Page 52.

Pathway of text-dependent questions

Staircase of Complexity	Text Dependent Questions (Write your text dependent questions below to confirm a staircase of complexity)
Opinions, Arguments, Intertextual Connections	
Inferences	
Author's Purpose	
Vocabulary and Text Structure	
Key Details	
General Understandings	

Adapted from: Frey, Nancy and Douglas Fisher, *Rigorous Reading: 5 Access Points for Comprehending Complex Texts*, Corwin Literacy, London: 2013. Page 52.

Stems for writing text-dependent questions

This guide provides some commonly used structures for writing text-dependent questions and is intended to jump-start thinking when developing such questions, however, it is in no way intended to serve as an exhaustive list.

Questions about….	May start with...
General understandings/ gist *What are the "basics" in this text?*	• Who... • When…. • Where… • What… • Why did… • What happened first...next...then...last...
Key details *What information or parts of the text support the big ideas?*	• What key details tell you about… • Describe the major events/scenes that led to... • Explain why/how… • What key details in the text support the topic/idea/claim/argument that… • Describe...using key details to support your description… • Reread/look at…what does this tell you about...how do you know? • How are...and...similar/different? How do you know? • Why did/is…. • How does ...idea/character/setting/etc. develop over the course of the text… • What role does...play in advancing the plot? • How did….respond to/impact/effect/change/...
Vocabulary, word choice, and meaning *How are words and phrases used for effect in the text?*	• What does….mean? • Reread….what does...mean there? • Why did the author choose to use….instead of…. • What is the impact of….on meaning/tone/mood/etc.? (6-12) • What role does figurative language like….play to advance the text's meaning/plot/theme/etc.? • What does the word/phrase….tell us about… • How does...shape the meaning/tone/mood/etc.? (6-12) • What role does (literary device, e.g., rhythm, rhyme, onomatopoeia, alliteration, etc.) play in the development of… • How is the author defining...how do you know? • What role do….(part of speech)...play in this text? • What is the impact of the (part of speech) in this text?
Text structure *How the text is organized?*	• What is the relationship between…. • Describe the structure used to organize...information/an idea/argument/plotline/inform • Describe the beginning/middle/end of...Why did the author choose to start/continue/end this way? • How do….and...connect/connect to…. • How does the author show…. • How does the text structure support… • What is the relationship/connection between this word/sentence/ paragraph and…. • How do the sentences/sections/paragraphs fit together to… • How does the (*text feature*) support… • Reread...Who is speaking/narrating? How do you know?

	• What does the illustration of...tell you about… • How does the structure support/help/explain/clarify… • What ideas about...are connected in this text? How are they connected?
Author's purpose and viewpoint *Why did the author write the text? What was his/her goal?* *What message is the author trying to send?*	• Why did the author choose…. • What was the author trying to teach/say/convey about…. • What choices did the author make about… • Who said/did/felt...how do you know? • What clues/evidence from the text tell you who is… • What important conclusions can you draw from this text…. • Why was this text written... • What can you tell about …(author/time period/event/perspective/place)…based on… • How does the author feel about….? How do you know?
Big takeaways *What conclusions can you draw about the author's point of view, main idea or opinion?*	• What is the author's stance/argument/opinion of….? Why? • What is the main topic/idea/theme/central idea...how do you know? • How does the author develop the topic/theme/central idea… • How does the author convey his/her viewpoint about… • Was the author successful in…why or why not? • What reasons and evidence support the author's claim that...Which do not? (6-12) • Evaluate the author's claim/argument that…(6-12)
Comparing across texts and multimedia *How do texts and different forms of media interact around a topic or idea?*	• Explain how the…(illustration)…impacts the meaning of the text… (K-5) • How do the choices made by the…(author/director/photographer /actor/etc.)…impact the meaning of the…(text/section/scene/stanza/etc.) (6-12) • Trace the influence of…(mythology/religious work/Shakespeare/literature movement) on…(character/storyline/theme/etc.) (8-12) • How do the authors/pieces reflect their perspective on… • How do the multiple texts/pieces teach the reader different dimensions/aspects of… • Which representation of…makes a more compelling…(argument/point/ statement)? Why? • How does the use of…(graph/illustration/feature) impact the meaning of the text compared to… • How do the…(words/image/film/song/graphics) convey….(the bigger understanding)?

Text-dependent questions checklist*

Use the questions below as a checklist to help you write high-quality text-dependent questions, evaluate text-dependent questions, and guide discussions and feedback with your coach and group.

✔	Criteria	Notes/comments
	Are the questions truly text-dependent? (Do they require the student to read the text to answer the questions?)	
	Are the questions logically grounded in the text? (Can they be answered by careful reading of the text, or do they require background knowledge?)	
	Is it clear to students that they must use evidence from the text to support their claims? (Standard 1)	
	Do the questions provide appropriate scaffolding so that all students can understand what is being asked?	
	Do the questions linger over the trickiest or most complex parts of the text, providing students with multiple opportunities to explore and interact with those parts?	
	Are the questions being asked worthwhile and worthy of further time and exploration?	
	Do the questions provide students with the opportunity to use academic and domain-specific vocabulary in context? When possible, do some of the questions go beyond just asking about the vocabulary but also explore some aspect of the text?	
	Do the questions provide opportunities for students to build world knowledge through the lens of the text?	
	Is there a sufficient range and diversity of questions matching the complexity of the text? Do the questions address components of both the "Key Ideas and Details" Standards as well as "Craft and Structure" and "Integration of Knowledge and Ideas" standards?	
	Are the questions sequenced in a logical, coherent progression that gradually builds towards a key understanding?	
	Do the questions sequenced earlier in the series provide students with the opportunity to build confidence and gain understandings that will be put to use to answer later questions?	
	Are the questions appropriately aligned to a Common Core Standard at the right grade-level?	
	Do the questions leave out any key ideas, or pivotal understandings in the text?	

*Adapted in part from Student Achievement Partner's "Checklist for Evaluating Question Quality."

GAP: Guided Action Plan for
Choosing the Right Text, Asking the Right Questions

The purpose of this document is to make a plan to ensure that your big takeaways from today's session make it into teachers' classrooms (and ultimately impact students).

My role/title:

My strengths: ● ● ●	**I want to learn more about:** ● ● ●
Who I will work with: How I will start the conversation: ● ● ●	**When and where we will do the work:** To dos: ● ● ●
Quick wins: To dos: ● ● ●	**Barriers to success:** To dos: ● ● ●

- **Your role:** What is your title? Main responsibilities? How is this related to supporting teachers in improving learning opportunities for students?
- **My strengths:** What do you know about supporting teachers in close reading?
- **Who:** Individuals? Groups? Grade-alike or bands? Online or Onsite?
- **When and Where:** Be specific! Is there a room to reserve? A time set aside?
- **Quick wins:** Think about ways to score some "Quick Wins". Is there a teacher with great classroom management who could handle a different structure? A teacher with deep content knowledge who can help you analyze texts? What steps will you take to support those teachers?
- **Barriers to success:** (Don't worry! We'll brainstorm solutions!): What are the challenges you anticipate when supporting teachers in analyzing text complexity and planning close reading units? Be specific.

Additional Resources

Text Complexity Analysis Template

Text complexity analysis			
Created by:		**Event/Date:**	TeachFest
Text and Author	Ever Wondered How It Snows? By Moira E. McLaughlin	**Where to Access Text**	Washington Post for Kids, Kids' Post

Text Description

This KidsPost news article teaches readers how snow is formed and what the characteristics of snowflakes are.

Quantitative

Lexile and Grade Level	820L , 3rd grade	**Text Length**	~500

Qualitative

Meaning/Central Ideas

- The author is teaching the reader about the science behind snow.
  - The process of how snow is formed includes five steps in P2
  - The weather conditions needed for snow
  - The characteristics of snowflakes
  - Many numbers have to be integrated into the reader's thinking in order to make full meaning of the text.

Complexity level: VERY COMPLEX

Text Structure/Organization

- Each paragraph addresses a different aspect of snow or the meteorological conditions necessary to create snow.
- The text is a newspaper article and reading an article in columns may present challenges, especially to struggling readers. The graphic supports student understanding of paragraph 5.
- The author's use of parenthetical "asides" may cause confusion for some readers.

Complexity level: MODERATELY COMPLEX

Prior Knowledge Demands

- The text assumes prior experience with snow, so if readers live in a climate where it doesn't snow at all or very often, then this text may be more challenging. For example, concepts like "snow days" may be especially inaccessible.
- The article mentions the 1951 International Commission on Snow and Ice and a California physicist, which will likely be unfamiliar ideas to young readers.

Complexity level: MODERATELY COMPLEX

Language Features

- The language is largely conversational and establishes a playful tone.
- There are many content-specific Tier 3 vocabulary words and some are defined in the text.
- The scenario in first paragraph and its reference an iPad may be lost on many young readers
- The sentence structure is varied with compound sentences as well as many dependent phrases

Complexity level: VERY COMPLEX

Potential Reader/Task Challenges

This text is a newspaper article, so it may challenge readers not familiar with reading this type of text. Each step of snow creation and the characteristics of snowflakes have to be linked by the reader in order to make full meaning of the text. Additionally, if the reader is not familiar with snow in their daily lives, there may be a motivational challenge based on the topic itself. Many Tier 3 vocabulary words may be intimidating to struggling readers in particular who must lean into the text to obtain their definitions.

Big Takeaway

The formation of and conditions necessary for snowfall to occur are particular. In order to have snowfall, certain weather conditions such as air temperature and moisture, must be met. Therefore different parts of the US have varied experiences with snowfall. When snow does fall, snowflakes are uniquely formed inside particular types of clouds.

Vocabulary Analysis Template

	Words that demand less teaching time (i.e. the definition is singular and concrete)	Words that demand more teaching time (i.e. words with multiple meanings and/or that are part of a word family)
Words that can be determined in context	• Cumulonimbus (Tier 3) • Nimbostratus (Tier 3) • Elevation (Tier 2) • Hexagonal (Tier 2) • Washington, DC (Tier 2) • Mount Rainier, Washington (Tier 2)	• foreign particles (Tier 2) • potential (Tier 2) • identical (Tier 2) • classifying (Tier 2) • categories (Tier 2)
Words that cannot be determined in context	• gravity (Tier 2) • climates (Tier 2) • “prime snow conditions” (Tier 2) • International Commission on Snow and Ice (Tier 2)	• droplets (Tier 2) • physicist (Tier 2)

Text Complexity Analysis Template

Text complexity analysis			
Created by:		**Event/Date:**	TeachFest
Text and Author	Robert Kennedy's Speech: April, 1968 Indianapolis-Announcing death of Dr. Martin Luther King	**Where to Access Text**	Public Domain

Text Description

RFK's speech delivered April 4, 1968 and transcribed directly from audio.
A public address to an unforeseen crisis with the potential for fury or transcendence as the outcome. Upon arriving in Indianapolis, Indiana as a senator from NY pursuing a presidential nomination, RFK learns of MLK's assassination and uses the opportunity to speak to the community, to it's pain, and to our deepest failures as a society. Many call it the greatest speech ever given .

Quantitative

Lexile and Grade Level	1220L (9-10th grd. band)	**Text Length**	615 words

Qualitative

Meaning/Central Ideas	**Text Structure/Organization**
1. Neutralize violent reaction to MLK assassination 2. Inspire love, stave off swelling hatred and potential violence 3. Illuminate a vision for the future with blacks and whites living in harmony Text Complexity: MODERATELY COMPLEX	1. Rhythm created through repetition to engage listener and emphasize a point (Rule of 3). 2. Minimal structure-almost haphazard and meandering with an attempt at circular by the end. Historians are not clear about whether the speech was drafted or not. 3. Inclusion of an ancient Greek poem without a stated purpose by RFK. Text Complexity: VERY COMPLEX
Prior Knowledge Demands	**Language Features**
An average student should have much of this world knowledge in place, but for those who do not, this will be the greatest challenge to deep comprehension. 1. Civil Rights Movement 2. MLK's ascendancy in the Civil Rights Movement 3. JFK's assassination 4. Race relations in the US leading up to this day 5. Aeschylus's poem 6. Greek saying Text Complexity: EXCEEDINGLY COMPLEX	1. An ancient poem by Aeschylus and a Greek saying are a challenge to deeper comprehension that a reader must connect to the author's overall purpose. 2. Analysis of the text must consider the oral delivery of the speech when interpreting syntax and punctuation (repeated words, dashes). Text Complexity: VERY COMPLEX

Potential Reader/Task Challenges

Although the actual vocabulary demands are minimal, the elements of the text that make it an effective speech are challenging and are critical to comprehension. A lack of world knowledge will limit comprehension and curb motivation. Even a reader with ample background knowledge will be challenged by connecting the ideas set forth in a meandering structure, so she can appreciate how effective and compelling this speech was at that moment in history. Choosing this speech for close reading also supports the CCSS directive to study seminal US texts because it both illuminates a pivotal moment in US history while developing the idea of what it means to be a citizen in this country.

Big Takeaway

By balancing tragic news with optimism for a future of justice, and directly calling on the audience to respond with prayer and a commitment to gentleness, RFK brilliantly staves off the violence that raged around the rest of the country on April 4, 1968.

Vocabulary Analysis Template

	Words that demand less teaching time (i.e. the definition is singular and concrete)	Words that demand more teaching time (i.e. there are multiple meanings and/or are part of a word family)
Words that can be determined in context	assassination (Tier 2) savageness (Tier 2)	polarization (Tier 2) tame (Tier 2) abide (Tier 2)
Words that cannot be determined in context	despair (Tier 2) compassion (Tier 2) Aeschylus (Tier 3)	

Text Complexity Analysis Template

Text complexity analysis			
Created by:		Event/Date:	
Text and Author		Where to Access Text	
Text Description			
Quantitative			
Lexile and Grade Level		Text Length	
Qualitative			
Meaning/Central Ideas		**Text Structure/Organization**	
Prior Knowledge Demands		**Language Features**	
Potential Reader/Task Challenges			
Big Takeaway			

Vocabulary Analysis Template

	Words that demand less teaching time (i.e. the definition is singular and concrete)	Words that demand more teaching time (i.e. words with multiple meanings and/or that are part of a word family)
Words that can be determined in context		
Words that cannot be determined in context		

TEACHFEST

CONNECTICUT PRINCIPALS ACADEMY

Mathematics

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STATE DEPARTMENT OF EDUCATION

Table of Contents

Criteria for a Worthwhile Task

What is a Worthwhile Task?

"A worthwhile task is a project, question, problem, construction, application, or exercise that engages students to reason about mathematical ideas, make connections, solve problems, and develop mathematical skills."

- National Council for Teachers of Mathematics

Effective mathematics instruction engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow for multiple entry points and varied solution strategies.[1] The tasks teachers select to engage students in studying mathematics have a significant impact on students' opportunities to learn and their perceptions about what mathematics is. This document lists some of the key criteria that make an instructional task worthwhile.

A worthwhile task has content that…

- Is directed at essential mathematical content addressed by the grade level standards and is aligned to the lesson objective.
- Revolves around an interesting real-world or mathematical problem.
- Allows for connections between concepts and procedures.
- Elicits connections between different mathematics topics.
- Requires reasoning (non-algorithmic), higher-level thinking, and problem solving.
- Is appropriately accessible and challenging (has an "entry point" for all students, and is extendable for students are ready for an additional challenge).
- Provides multiple ways to demonstrate understanding of mathematics concepts and procedures.
- Allows for various solutions or can be approached by students in multiple ways using different solution strategies.
- Provides an opportunity to practice important skills.

A worthwhile task elicits (from students)…

- Illustrations or explanations of mathematical ideas.
- Engagement, discourse, and argument.
- Connections to other important mathematical ideas.
- Productive struggle and opportunities to explore and unravel misconceptions.

[1] *Leinwand, S., Brahier, D., and Huinker, D., Principles to Action*, 2014, pg. 17

Other Sources:

The NCTM Brief *Why is Teaching with Problem-Solving Important to Student Learning* (April 8, 2010); Schrock, C. Norris, Norris, K., Pugalee, D., et. al, *NCSM Great Tasks for Mathematics* (2013)

Common Core State Standards Shifts in Mathematics

1. **Focus** strongly where the Standards focus

Focus: The Standards call for a greater focus in mathematics. Rather than racing to cover topics in a mile-wide, inch-deep curriculum, the Standards require us to significantly narrow and deepen the way time and energy is spent in the math classroom. We focus deeply on the major work* of each grade so that students can gain strong foundations: solid conceptual understanding, a high degree of procedural skill and fluency, and the ability to apply the math they know to solve problems inside and outside the math classroom.

2. **Coherence**: **think** across grades, and **link** to major topics within grades

Thinking across grades: The Standards are designed around coherent progressions from grade to grade. Learning is carefully connected across grades so that students can build new understanding onto foundations built in previous years. Each standard is not a new event, but an extension of previous learning.

Linking to major topics: Instead of allowing additional or supporting topics to detract from the focus of the grade, these concepts serve the grade level focus. For example, instead of data displays as an end in themselves, they are an opportunity to do grade-level word problems.

3. **Rigor**: in major topics* pursue:
   - **conceptual understanding**,
   - procedural skill and **fluency**, and
   - **application** with equal intensity.

Conceptual understanding: The Standards call for conceptual understanding of key concepts, such as place value and ratios. Students must be able to access concepts from a number of perspectives so that they are able to see math as more than a set of mnemonics or discrete procedures.

Procedural skill and fluency: The Standards call for speed and accuracy in calculation. Students are given opportunities to practice core functions such as single-digit multiplication so that they have access to more complex concepts and procedures.

Application: The Standards call for students to use math flexibly for applications in problem-solving contexts. In content areas outside of math, particularly science, students are given the opportunity to use math to make meaning of and access content.

High-level Summary of Major Work in Grades K–8

K–2	Addition and subtraction—concepts, skills, and problem solving; place value
3–5	Multiplication and division of whole numbers and fractions—concepts, skills, and problem solving
6	Ratios and proportional relationships; early expressions and equations
7	Ratios and proportional relationships; arithmetic of rational numbers
8	Linear algebra and linear functions

*For a list of major, additional and supporting clusters by grade, please refer to 'Focus in Math' at achievethecore.org/focus pp. 4–12

K-12 Standards for Mathematical Practice (SMP)

1. **Make sense of problems and persevere in solving them.**

   Mathematically proficient students: Seek and explain the meaning of the problem. Look for efficient ways to represent and solve it. Ask themselves "Does this make sense?" and "Can I solve the problem in a different way?" Identify the connections between two different approaches to a problem.

2. **Reason abstractly and quantitatively.**

   Mathematically proficient students: Decontextualize – to manipulate symbolic representations by applying properties of operations. Contextualize – to understand the meaning of the number or variable as related to the problem. Understand the meaning of the quantities, not just how to compute them.

3. **Construct viable arguments and critique the reasoning of others.**

   Mathematically proficient students: Construct arguments using verbal or written explanations (expressions, equations, graphs, etc.) Evaluate their own thinking and the thinking of others by asking questions like, "How did you get that?" "Why is that true?" "Does that always work?"

4. **Model with mathematics.**

   Mathematically proficient students: Model problem situations symbolically, graphically, and contextually. Connect and explain the connections between different representations. Use all the different representations as appropriate to a problem context. Modeling is defined as the act of constructing a mathematical representation of a situation (not a noun).

5. **Use appropriate tools strategically.**

   Mathematically proficient students: are sufficiently familiar with appropriate tools to decide when each tool is helpful, knowing both the benefit and limitations. They can detect possible errors and identify relevant external mathematical resources, and use them to pose or solve problems.

6. **Attend to precision.**

   Mathematically proficient students: Use clear and precise language/definitions in their discussions with others and in their own reasoning. State the meaning of symbols. Specify units of measure**.** Calculate accurately and efficiently with an appropriate degree of precision for the problem context.

7. **Look for and make use of structure.**

   Mathematically proficient students: Look for patterns or structures to model and solve problems. Example – Addition is the same, no matter which number system is used; to add, one must add like units. This practice is about making observations.

8. **Look for and express regularity in repeated reasoning.**

   Mathematically proficient students: Use repeated reasoning to: understand algorithms, make generalizations about patterns, derive formulas and evaluate the reasonableness of intermediate results. This practice is about "doing" (performing operations).

Grade: **Mathematics Lesson/Unit Title:** **Overall Rating:**

I. Alignment to the Depth of the CCSS	II. Key Shifts in the CCSS	III. Instructional Supports	IV. Assessment
The lesson/unit aligns with the letter and spirit of the CCSS: ○ Targets a set of grade-level CCSS mathematics standard(s) to the full depth of the standards for teaching and learning. ○ Standards for Mathematical Practice that are central to the lesson are identified, handled in a grade-appropriate way, and well connected to the content being addressed. ○ Presents a balance of mathematical procedures and deeper conceptual understanding inherent in the CCSS.	*The lesson/unit reflects evidence of key shifts that are reflected in the CCSS:* ○ **Focus:** Lessons and units targeting the major work of the grade provide an especially in-depth treatment, with especially high expectations. Lessons and units targeting supporting work of the grade have visible connection to the major work of the grade and are sufficiently brief. Lessons and units do not hold students responsible for material from later grades. ○ **Coherence:** The content develops through reasoning about the new concepts on the basis of previous understandings. Where appropriate, provides opportunities for students to connect knowledge and skills within or across clusters, domains and learning progressions. ○ **Rigor:** Requires students to engage with and demonstrate challenging mathematics with appropriate balance among the following: – **Application:** Provides opportunities for students to independently apply mathematical concepts in real-world situations and solve challenging problems with persistence, choosing and applying an appropriate model or strategy to new situations. – **Conceptual Understanding:** Develops students' conceptual understanding through tasks, brief problems, questions, multiple representations and opportunities for students to write and speak about their understanding. – **Procedural Skill and Fluency:** Expects, supports and provides guidelines for procedural skill and fluency with core calculations and mathematical procedures (when called for in the standards for the grade) to be performed quickly and accurately.	*The lesson/unit is responsive to varied student learning needs:* ○ Includes clear and sufficient guidance to support teaching and learning of the targeted standards, including, when appropriate, the use of technology and media. ○ Uses and encourages precise and accurate mathematics, academic language, terminology and concrete or abstract representations (e.g., pictures, symbols, expressions, equations, graphics, models) in the discipline. ○ Engages students in productive struggle through relevant, thought-provoking questions, problems and tasks that stimulate interest and elicit mathematical thinking. ○ Addresses instructional expectations and is easy to understand and use. ○ Provides appropriate level and type of scaffolding, differentiation, intervention and support for a broad range of learners. – Supports diverse cultural and linguistic backgrounds, interests and styles. – Provides extra supports for students working below grade level. – Provides extensions for students with high interest or working above grade level. *A unit or longer lesson should:* ○ Recommend and facilitate a mix of instructional approaches for a variety of learners such as using multiple representations (e.g., including models, using a range of questions, checking for understanding, flexible grouping, pair-share). ○ Gradually remove supports, requiring students to demonstrate their mathematical understanding independently. ○ Demonstrate an effective sequence and a progression of learning where the concepts or skills advance and deepen over time. ○ Expect, support and provide guidelines for procedural skill and fluency with core calculations and mathematical procedures (when called for in the standards for the grade) to be performed quickly and accurately.	*The lesson/unit regularly assesses whether students are mastering standards-based content and skills:* ○ Is designed to elicit direct, observable evidence of the degree to which a student can independently demonstrate the targeted CCSS. ○ Assesses student proficiency using methods that are accessible and unbiased, including the use of grade-level language in student prompts. ○ Includes aligned rubrics, answer keys and scoring guidelines that provide sufficient guidance for interpreting student performance. *A unit or longer lesson should:* ○ Use varied modes of curriculum-embedded assessments that may include pre-, formative, summative and self-assessment measures.
Rating: 3 2 1 0	**Rating: 3 2 1 0**	**Rating: 3 2 1 0**	**Rating: 3 2 1 0**

EQuIP Rubric for Lessons & Units: Mathematics

Directions: The Quality Review Rubric provides criteria to determine the quality and alignment of lessons and units to the Common Core State Standards (CCSS) in order to: (1) Identify exemplars/ models for teachers' use within and across states; (2) provide constructive criteria-based feedback to developers; and (3) review existing instructional materials to determine what revisions are needed.

Step 1 – Review Materials

- Record the grade and title of the lesson/unit on the recording form.
- Scan to see what the lesson/unit contains and how it is organized.
- Read key materials related to instruction, assessment and teacher guidance.
- Study and work the task that serves as the centerpiece for the lesson/unit, analyzing the content and mathematical practices the tasks require.

Step 2 – Apply Criteria in Dimension I: Alignment

- Identify the grade-level CCSS that the lesson/unit targets.
- Closely examine the materials through the "lens" of each criterion.
- Individually check each criterion for which clear and substantial evidence is found.
- Identify and record input on specific improvements that might be made to meet criteria or strengthen alignment.
- Enter your rating 0 – 3 for Dimension I: Alignment.

Note: Dimension I is non-negotiable. In order for the review to continue, a rating of 2 or 3 is required. If the review is discontinued, consider general feedback that might be given to developers/teachers regarding next steps.

Step 3 – Apply Criteria in Dimensions II – IV

- Closely examine the lesson/unit through the "lens" of each criterion.
- Record comments on criteria met, improvements needed and then rate 0 – 3.

When working in a group, individuals may choose to compare ratings after each dimension or delay conversation until each person has rated and recorded their input for the remaining Dimensions II – IV.

Step 4 – Apply an Overall Rating and Provide Summary Comments

- Review ratings for Dimensions I – IV adding/clarifying comments as needed.
- Write summary comments for your overall rating on your recording sheet.
- Total dimension ratings and record overall rating E, E/I, R, N – adjust as necessary.

If working in a group, individuals should record their overall rating prior to conversation.

Step 5 – Compare Overall Ratings and Determine Next Steps

- Note the evidence cited to arrive at final ratings, summary comments and similarities and differences among raters. Recommend next steps for the lesson/unit and provide recommendations for improvement and/or ratings to developers/teachers.

Additional Guidance on Dimension II: Shifts - When considering *Focus* it is important that lessons or units targeting additional and supporting clusters are sufficiently brief – this ensures that students will spend the strong majority of the year on major work of the grade. See the *K-8 Publishers Criteria for the Common Core State Standards in Mathematics*, particularly pages 8-9 for further information on the focus criterion with respect to major work of the grade at www.corestandards.org/assets/Math_Publishers_Criteria_K-8_Summer%202012_FINAL.pdf. With respect to *Coherence* it is important that the learning objectives are linked to CCSS cluster headings (see www.corestandards.org/Math).

Rating Scales

Rating for Dimension I: Alignment is non-negotiable and requires a rating of 2 or 3. If rating is 0 or 1 then the review does not continue.

Rating Scale for Dimensions I, II, III, IV:

3: Meets most to all of the criteria in the dimension
2: Meets many of the criteria in the dimension
1: Meets some of the criteria in the dimension
0: Does not meet the criteria in the dimension

Descriptors for Dimensions I, II, III, IV:

3: **Exemplifies CCSS Quality -** meets the standard described by criteria in the dimension, as explained in criterion-based observations.
2: **Approaching CCSS Quality -** meets many criteria but will benefit from revision in others, as suggested in criterion-based observations.
1: **Developing toward CCSS Quality -** needs significant revision, as suggested in criterion-based observations.
0: **Not representing CCSS Quality -** does not address the criteria in the dimension.

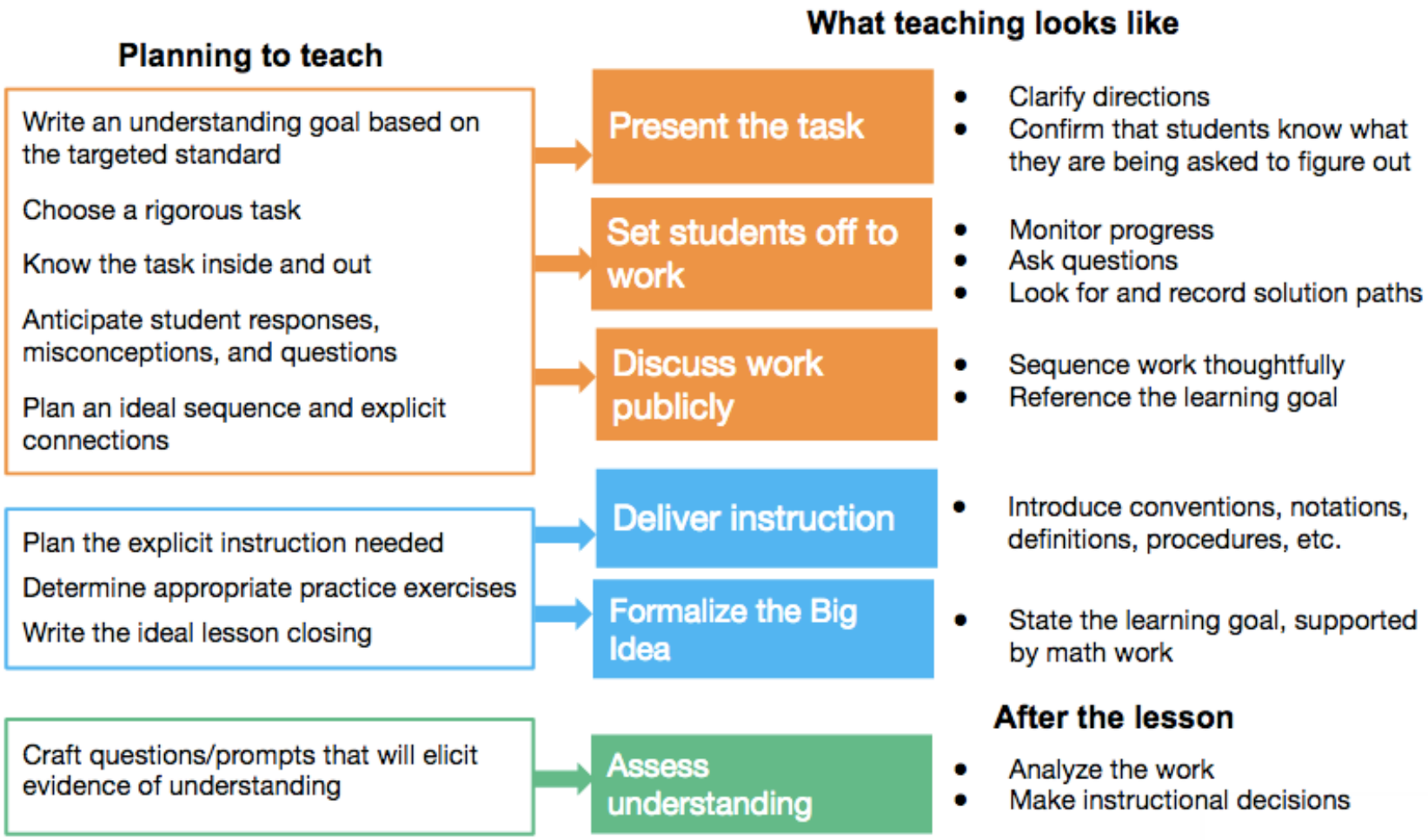
Overall Rating for the Lesson/Unit:

E: Exemplar – Aligned and meets most to all of the criteria in dimensions II, III, IV **(total 11 – 12)**
E/I: Exemplar *if* Improved – Aligned and needs some improvement in one or more dimensions **(total 8 – 10)**
R: Revision Needed – Aligned partially and needs significant revision in one or more dimensions **(total 3 – 7)**
N: Not Ready to Review – Not aligned and does not meet criteria **(total 0 – 2)**

Descriptor for Overall Ratings:

E: Exemplifies CCSS Quality – Aligned and exemplifies the quality standard and exemplifies most of the criteria across Dimensions II, III, IV of the rubric.
E/I: Approaching CCSS Quality – Aligned and exemplifies the quality standard in some dimensions but will benefit from some revision in others.
R: Developing toward CCSS Quality – Aligned partially and approaches the quality standard in some dimensions and needs significant revision in others.
N: Not representing CCSS Quality – Not aligned and does not address criteria.

Task-Based Lesson Components



Part A: Example Task Research

Name: Belinda Thompson

Grade: 5
Original Task Title: Banana Pudding
Source: https://www.illustrativemathematics.org/illustrations/1196

Original Learning Goal: Students will draw pictures to illustrate division of whole numbers by unit fractions.

Domain & Cluster	Content Standard(s)	Mathematical Practice(s)
Domain: NF: Number and Operations---Fractions **Cluster:** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B.7.B Interpret division of a whole number by a unit fraction, and compute such quotients. *For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4.*	(1.) Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. (4.) Model with mathematics 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Shifts of the Common Core State Standards		
Focus	**Coherence**	**Rigor** Select all that apply
(Major) Supporting Additional	**Builds from:** 3.OA.2, 4.NF.4 **Connects to:** 5.NF.4, 5.NF.6 **Builds up to:** 6.NS.1	*Conceptual Understanding:* Understand that division asks "how many of this size scoop are needed of this size measuring cup are needed for this total amount?" *Procedural Fluency: NA* *Application:* See fraction division in a recipe calculation

Original Task:

Carolina's Banana Pudding Recipe

- 2 cups sour cream
- 5 cups whipped cream
- 3 cups vanilla pudding mix
- 4 cups milk
- 8 bananas

Carolina is making her special banana pudding recipe. She is looking for her cup measure, but can only find her quarter cup measure.

a. How many quarter cups does she need for the sour cream? Draw a picture to illustrate your solution, and write an equation that represents the situation.

b. How many quarter cups does she need for the milk? Draw a picture to illustrate your solution, and write an equation that represents the situation.

c. Carolina does not remember in what order she added the ingredients but the last ingredient added required 12 quarter cups. What was the last ingredient Carolina added to the pudding? Draw a picture to illustrate your solution, and write an equation that represents the situation.

Part B: Example Task Analysis

The purpose of a task analysis is to identify strengths and weaknesses of tasks. While a task may not meet every criterion, teachers should use their judgment to determine if the task meets enough of the criteria to be a useful instructional tool, or needs improvement. Use "1" for "needs significant revision", and "4" for "Fine as is."

Task Analysis		
Criteria of Worthwhile Task	**Rating**	**Notes**
1. Is grade-level appropriate *Does the task align to the grade-level standard?*	1 2 3 **(4)**	
2. Makes connections be concept and procedures *What conceptual understandings are embedded that students should take away as a result of working on this task?* *Does the task support students in understanding the concept(s) upon which the procedure is based?* *What misunderstandings or roadblocks may be surfaced by the task?*	1 2 **(3)** 4	Ss may not make the connection that finding the number of quarter cups needed requires fraction division. (Need to make this explicit in the public discussion of work.)
3. Makes connections between different mathematics topics *What other cluster(s) or standard(s) does the task directly connect or potentially connect to?*	1 **(2)** 3 4	Ss could solve with pictures or fraction sense. Need to add a component to help develop the connection between fraction multiplication and division. Need to develop debrief questions to support the connection.
4. Requires reasoning (non-algorithmic thinking) *Does the task require students to do more than just reproduce a procedure?*	1 2 3 **(4)**	Because Ss may not connect the task with division (or any mathematical operation), keep the equation component to support making a mathematical connection.
5. Connects to real situations that are familiar and relevant to students *Does the task connect mathematical concepts and procedures to their real world applications?* *What contextual features of the task must students understand in order to successfully engage in the task?*	1 2 **(3)** 4	Select a recipe students may want to make and add a component that requires students to reason about how using different measuring cup sizes affects the number of "scoops" needed.
6. Is appropriately challenging and accessible (low barrier to entry, high ceiling)? *What modifications or accommodations may need to be in place to support learning by all students (e.g., ELLs, students with IEPs or 504s, as well as students whose understanding is beyond the task)?*	1 2 **(3)** 4	Maybe add a part that requires students to consider how changing the cup size (divisor) would change the solution or how doubling the recipe would change the solution.
7. Invites multiple ways to demonstrate understanding of the mathematical concepts and procedures *How might students solve the problem? What prior knowledge might they apply to the task?* *Is there more than one approach students could take to solve the task? Is there more than one solution?*	1 2 **(3)** 4	Specify that students can use words, pictures, models, and/or numbers to represent their solutions. In class be sure to select multiple representations (pictures, number lines, and equations) showing the number of cups needed for each ingredient.
8. Requires students to illustrate or explain mathematical ideas *What representations could be used to model the mathematical concepts and procedures embedded in this task?* *How will students explain or justify their thinking?*	1 2 3 **(4)**	Possibly add a component that requires students to explain why solutions are reasonable.

Part C: Example Task Rewrite

Created by:	Belinda Thompson
Task Title	Oreo Dirt Pudding Task
Grade:	5
Standard:	5.NF.B.7b
Original Task:	https://www.illustrativemathematics.org/illustrations/1196
Learning Goal:	Students will understand the connection between division of a whole number by a unit fraction and division of whole numbers. Students will also understand the inverse relationship of multiplication and division by investigating the number of ¼ cup scoops in whole numbers of cups.

Rewritten or revised task

Oreo Dirt Pudding Recipe

3 cups Oreo cookies (crushed)
2 cups of milk
1 cup chocolate pudding mix
1 ½ cups Cool Whip

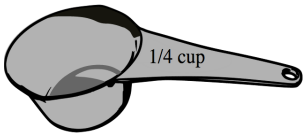
Optional: Gummy Worms

Yields 8 cups

http://www.ohnuts.com/blog/dirt-pudding-cups-with-gummy-worms-recipe/

Alison has this for measuring liquids.

Alison has this for dry ingredients and Cool Whip.



Your friend Alison who is in 3rd grade wants to make your famous "Oreo Dirt Pudding". She wants to triple the recipe so there's enough for her whole class.

She calls you to ask for directions for the recipe, and tells you that she has a liquid measuring cup for the milk and a ¼ cup for dry ingredients and Cool Whip.

She's only in 3rd grade so she doesn't know much about fractions. How will you tell her how much of each ingredient to use?

Task extensions

Alison called back and she found a half cup! She claims she will need half as many cups for each ingredient. Is her claim true? Explain why or why not using numbers, words, or pictures.

Explain how the number of cups you would need for each ingredient would change if you used each of the measuring cups listed below to make the recipe.

$\frac{1}{3}$ cup $\frac{3}{4}$ cup

A Tale of Two Tasks: Grades K-3

Grades K-2
CCSS: *2.MD.C.8*

Task A If I have two pennies, one nickel, two dimes, and one quarter, how much money do I have?
Task B I have 6 coins in my pocket: one penny, two nickels, two dimes, and one quarter. If I reach into my pocket and pull out three coins, how much money might I have in my hand?
Inspired by: *Hull, Miles, & Balka, 2014, pg. 23*

Grades 2-3
CCSS: *2.NBT.B.7 /3.NBT.A.2*

Task A Find the difference 731 – 256 =
Task B Arrange the digits to make two three-digit numbers so that the difference is between 100 and 200. 7 3 1 2 5 6
Inspired by: *Making Sense of Mathematics: Reasoning and Discourse*, Scholastic, 2012, pg. 10

A Tale of Two Tasks: Grades 3-5

Grades 3-5
CCSS: *4.NF.A.2*

Task A

Order these fractions from least to greatest:

$$\frac{3}{5} \quad \frac{7}{8} \quad \frac{5}{9}$$

Task B

Tommy says that $\frac{7}{8}$ is greater than $\frac{3}{5}$ because 7 and 8 are both greater than 3 and 5.

Is Tommy's claim true for all fraction pairs? Use a visual model to show why you agree or disagree with Tommy's claim.

Source: LearnZillion

Grades 4-5
CCSS: *4.MD.A.3*

Task A

Martha wants to buy carpet for her bedroom, which is 15 feet long and 10 feet wide. How many square feet of carpet will she need to purchase to cover the whole floor?

Task B

Ms. Brown's class decides to raise rabbits for their spring science fair. The students want to build a rectangular pen such that their rabbits have as much room as possible. A local farmer has donated 16 feet of fencing, and the hardware store has donated 8 feet of the same fencing. It is possible that more fencing will be donated before building begins.

The principal has agreed that the students can use as much space in the schoolyard as they need to build the pen, but they have to present a plan for the size of the pen to the principal before they build it.

Design a pen for the rabbits, and organize your work so that the principal will accept the plan. Your plan should include how the design will change if more fencing is donated before the deadline.

Inspired by: *Stein, Smith, Henningsen, & Silver, 2000*

A Tale of Two Tasks: Grades 6-7

Grades 6-7
CCSS: *6.RP.A.3*

Task A

James earns $90 in 5 hours mowing lawns. At this rate, how much will he earn in 8 hours?

Task B

Part 1:
James earns $90 in 5 hours mowing lawns. The table shows how much free time he has each day this week. What is the maximum amount of money he could earn for the week if he uses all his free time to mow lawns?

Day	M	T	W	Th	F	S	
Hours available	10	1	7.5	6	3.5	2.5	
Money to be earned							

Part 2:
Add another row to the table to show how much money James could earn if he lowers his hourly rate by $3.

Task Source: LearnZillion

Grades 6-7
CCSS: *6.SP.A.3*

Task A

Members of the Smith family are aged 3, 8, 9, 10, and 15. What is their average age?

Task B

The average height (in cm) of our class is _____.

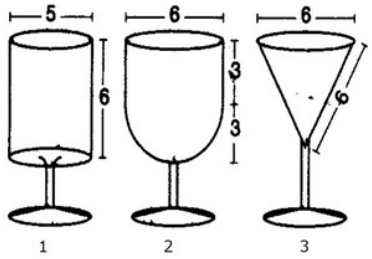
Using our class heights, make groups of four people that have the same average height as our class average.

Task A Source: *Making Sense of Mathematics: Reasoning and Discourse*, Scholastic, 2012, pg. 10

Task B Inspired by: Referenced in Sullivan, P, Clarke, D., Clarke, B., (2013.) *Teaching with Tasks for Effective Mathematics Learning.* New York: Springer

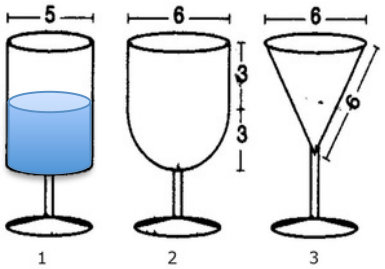
Grade 8
CCSS: *8.G.C.9*

Task A



a.) What is the height of Glass 3?
b.) What is the volume of each?
c.) When Glass 1 is $\frac{1}{2}$ full, the height of the liquid is 3 cm. What are the heights of the liquid in Glasses 2 and 3 when they are $\frac{1}{2}$ full?

Task B



When Glass 1 is half full, it holds 118 mL of water. Is this more or less than the amount of water glasses 2 and 3 hold when half full? Organize your work so that someone else could be convinced of your claim.

Inspired by: *Adapted from Illustrative Mathematics*

Note: Students are not expected to derive volume formulas.

A Tale of Two Tasks: High School

High School
CCSS: *A.REI.C.6*

Task A

Solve each of the following systems:

$$-4x - 2y = -12$$
$$4x + 8y = -24$$

$$x - y = 11$$
$$2x + y = 19$$

$$8x + y = -1$$
$$-3x + y = -5$$

$$5x + y = 9$$
$$10x - 7y = -18$$

Task B

Patricio says that the sum of two numbers is always larger than the difference of the same two numbers. Marley says that the sum of two numbers can be larger or smaller than the difference of the same two numbers, but the sum and difference can't be the same.

Do you agree with Patricio or Marley or neither one? Construct an argument to convince them who made a correct statement.

OR

Textaphone, Inc. is a new phone service provider that wants to offer two different plans. They found that the average American sends between 40 and 50 texts each day. The company wants to offer unlimited texting with only one of plan, and to charge a fee per text message for the other.

They've already decided to offer two different flat rates for phone service:

Plan A: $30 and some amount for texting
Plan B: $50 and some amount for texting

Textaphone, Inc. has hired your marketing firm to help them decide how their pricing should work based on these requirements.

Create a one-page presentation for Textaphone, Inc. to convince them what they should charge and that they will get customers for each plan.

Inspired by: *Leinwand, S., Brahier, D., and Huinker, D., Principles to Action, 2014*, pg. 20

Part A: Task Research

Name:

Grade: **Original Task Title:** **Source**:
Original Learning Goal:

Domain & Cluster	Content Standard(s)	Mathematical Practice(s)
Domain: **Cluster:**		1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Shifts of the Common Core State Standards		
Focus	**Coherence**	**Rigor** Select all that apply
Major Supporting Additional	**Builds from:** **Connects to:** **Builds up to:**	*Conceptual Understanding:* *Procedural Fluency:* *Application:*

Tale of Two Tasks: Comparative Analysis Template

Task Analysis – Task A		Task Analysis – Task B	
Criteria of Worthwhile Task	**Notes**	**Criteria of Worthwhile Task**	**Notes**
1. Mathematics is grade-level appropriate 1 2 3 4		1. Mathematics is grade-level appropriate 1 2 3 4	
2. Makes connections between concept and procedures 1 2 3 4		2. Makes connections between concept and procedures 1 2 3 4	
3. Makes connections between different mathematical topics 1 2 3 4		3. Makes connections between different mathematical topics 1 2 3 4	
4. Requires reasoning (nonalgorithmic thinking) 1 2 3 4		4. Requires reasoning (nonalgorithmic thinking) 1 2 3 4	
5. Connects to real situations that are familiar and relevant 1 2 3 4		5. Connects to real situations that are familiar and relevant 1 2 3 4	
6. Is appropriately challenging and accessible (low barrier to entry, high ceiling) 1 2 3 4		6. Is appropriately challenging and accessible (low barrier to entry, high ceiling) 1 2 3 4	
7. Provides multiple ways to demonstrate understanding of the mathematics concepts and procedures 1 2 3 4		7. Provides multiple ways to demonstrate understanding of the mathematics concepts and procedures 1 2 3 4	
8. Requires students to illustrate or explain mathematical ideas 1 2 3 4		8. Requires students to illustrate or explain mathematical ideas 1 2 3 4	

Use this organizer to record your thoughts about working on tasks and engaging in "productive struggle" from each perspective.

	 Leadership/Instructional Support	 Teacher	 Student
What excites me about working on tasks and "productive struggle" in a math lesson?			
What worries me about working on tasks and "productive struggle" in a math lesson?			
What questions do I have about working on tasks and "productive struggle"?			
Other thoughts:			

GAP: Guided Action Plan for
Improving Math Learning Opportunities Through Worthwhile Tasks

The purpose of this document is to make a plan to ensure that your big takeaways from today's session make it into teachers' classrooms (and ultimately impact students).

My role/title:

My strengths: ● ● ●	**I want to learn more about:** ● ● ●
Who I will work with: How I will start the conversation: ● ● ●	**When and where we will do the work:** To dos: ● ● ●
Quick wins: To dos: ● ● ●	**Barriers to success:** To dos: ● ● ●

- **Your role:** What is your title? Main responsibilities? How is this related to supporting teachers in improving learning opportunities for students?
- **My strengths:** What do you know about supporting teachers in choosing and implementing rigorous math tasks?
- **Who:** Individuals? Groups? Grade-alike or bands? Online or Onsite?
- **When and Where:** Be specific! Is there a room to reserve? A time set aside?
- **Quick wins:** Think about ways to score some "Quick Wins". Is there a teacher with great classroom management who could handle a different structure? A teacher with deep content knowledge who could predict multiple solution paths? What steps will you take to support those teachers?
- **Barriers to success:** (Don't worry! We'll brainstorm solutions!): What are the challenges you anticipate when supporting teachers in choosing and implementing rigorous mathematical tasks? Be specific.

Additional Resources

Considerations for Selecting Worthwhile Instructional Tasks

Selecting an instructional task for your lesson is no easy feat! Use the questions outlined below to jump start your thinking and set goals for the instructional outcomes of your task. You may not need to answer all of these questions when selecting a task, but reading through them or answering a few may help you get started or get back on track if you get stuck.

Questions to consider when selecting tasks

Questions about your instructional goals…

- What grade-level cluster(s) and content standard(s) do you want to target?
- What are the important mathematical ideas that you hope students will take from this task?
- Are there any misconceptions or common errors that you want students to confront or unravel?
- What mathematical representations or models do you want students use or explore?
- Which skills are students required to use in this task?
- Which Standards for Mathematical Practice are emphasized?
- How much time do you have?
- What materials/resources do you have at your disposal?

Questions about tasks that you find…

- Is the task directed at essential mathematical content addressed by the grade level cluster and standards?
- Does this task address the depth of the standard or a portion of the standard?
- Will the task contribute to the conceptual development of students and help them make sense of mathematics?
- Is the task open-ended, whether in answer or approach?
- Will the task engage and interest students in a real-world or mathematical problem?
- Does the task require students to illustrate or explain their mathematical ideas?
- Will the task encourage student engagement and discourse?
- Will the task require more than the application of facts and procedures, and encourage students to make connections and generalizations between concepts and procedures?
- Will the task empower students to unravel potential misconceptions?

Sources for Math Tasks

Illustrative Mathematics	www.illustrativemathematics.org *Illustrative Mathematics provides mathematical tasks, task solutions, and commentary on how the tasks illustrate content standards. The site also provides a fractions progression module as wells as videos and vignettes illustrating the Mathematical Practices.*
NCTM Illuminations	www.illuminations.nctm.org *Illuminations is a project designed by NCTM. The site has 600 lesson plans and over 100 activities including manipulatives, applets, and games. Lessons and activities are searchable by content standard.*
Mathalicious	www.mathalicious.com *Mathalicious provides middle school and high school teachers with lessons that help them teach math in a way that engages their students–in a way that helps students explore the math behind real world topics. Each Mathalicious lesson contains information on which content standards are covered in the lesson as well as the **Mathematical Practice Standards** Lessons address several standards to address more math in less time. The site offers some lessons for free and offers a pay-what- you-can pay subscription option for individual teachers to access the full library of lessons.*
Yummy Math	www.yummymath.com *Yummy Math provides teachers and students with mathematical tasks relevant to our world today. The site has a collection of tasks for grades 3-High school searchable by domain and by content standards. Tasks can be downloaded for free, and task solutions, teacher tips, and relevant attachments are accessible with a $16 annual membership fee.*
Balanced Assessment	http://balancedassessment.concord.org *The Balanced Assessment in Mathematics Program was developed by the Harvard Graduate School of Education. The site has a library of over 300 innovative mathematics assessment tasks for grades K to 12, available at no cost.*
Mathematics Assessment Project	http://map.mathshell.org/materials/index.php *The Mathematics Assessment Project provides formative assessment lessons focused on developing math concepts and non-routine problem solving. The lessons are designed to make student knowledge and reasoning visible, and help teachers to guide students in how to improve and monitor their progress.*
Dan Meyer's 3-Act Tasks	http://bit.ly/1w6jMqH *Dan Meyer has created a spreadsheet on which he has listed the Three Acts of many math tasks addressing high school and some middle school content standards. In this spreadsheet, a common question is posed based on Act One, and then Acts Two and Three are based on that question. The tasks and related materials are available for free.*

Part A: Task Research

Name:

Grade: **Original Task Title:** **Source**:
Original Learning Goal:

Domain & Cluster	Content Standard(s)	Mathematical Practice(s)
Domain: **Cluster:**		1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.

Shifts of the Common Core State Standards		
Focus	**Coherence**	**Rigor** Select all that apply
Major Supporting Additional	**Builds from:** **Connects to:** **Builds up to:**	*Conceptual Understanding:* *Procedural Fluency:* *Application:*

Original Task:

Part B: Example Task Analysis

The purpose of a task analysis is to identify strengths and weaknesses of tasks. While a task may not meet every criterion, teachers should use their judgment to determine if the task meets enough of the criteria to be a useful instructional tool, or needs improvement. Use "1" for "needs significant revision", and "4" for "Fine as is."

Task Analysis		
Criteria of Worthwhile Task	**Rating**	**Notes**
1. Is grade-level appropriate *Does the task align to the grade-level standard?*	1 2 3 4	
2. Makes connections be concept and procedures *What conceptual understandings are embedded that students should take away as a result of working on this task?* *Does the task support students in understanding the concept(s) upon which the procedure is based?* *What misunderstandings or roadblocks may be surfaced by the task?*	1 2 3 4	
3. Makes connections between different mathematics topics *What other cluster(s) or standard(s) does the task directly connect or potentially connect to?*	1 2 3 4	
4. Requires reasoning (non-algorithmic thinking) *Does the task require students to do more than just reproduce a procedure?*	1 2 3 4	
5. Connects to real situations that are familiar and relevant to students *Does the task connect mathematical concepts and procedures to their real world applications?* *What contextual features of the task must students understand in order to successfully engage in the task?*	1 2 3 4	
6. Is appropriately challenging and accessible (low barrier to entry, high ceiling)? *What modifications or accommodations may need to be in place to support learning by all students (e.g., ELLs, students with IEPs or 504s, as well as students whose understanding is beyond the task)?*	1 2 3 4	
7. Invites multiple ways to demonstrate understanding of the mathematical concepts and procedures *How might students solve the problem? What prior knowledge might they apply to the task?* *Is there more than one approach students could take to solve the task? Is there more than one solution?*	1 2 3 4	
8. Requires students to illustrate or explain mathematical ideas *What representations could be used to model the mathematical concepts and procedures embedded in this task?* *How will students explain or justify their thinking?*	1 2 3 4	

Adapted from Bay-Williams, J.M. McGatha, M., Kobbet, B., & Wray, J. (2014). *Mathematics Coaching: Resources and Tools for Coaches and Leaders, K-12.* Boston: Pearson

1 = The quality in the task is not evident, or it is not possible to address this quality with the task
2 = The quality is evident in minor ways or incorporating it is possible.
3 = The quality is evident in the task
4 = The quality is central to the task and is important to the success of the lesson.

Part C: Task Rewrite

Created by:	
Task Title	
Grade:	
Standard:	
Original Task:	
Learning Goal:	

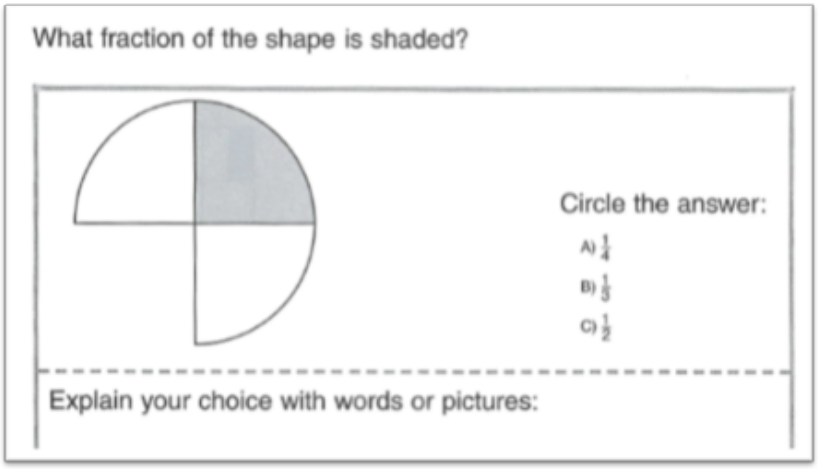
Rewritten or revised task

Task extensions

Task Structure Variations

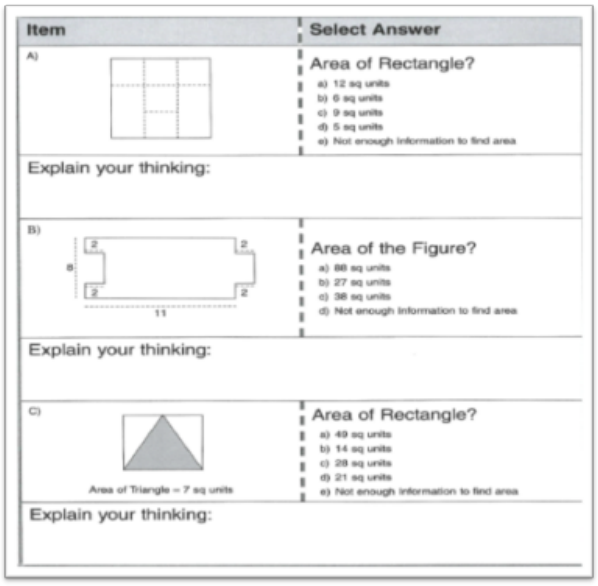
Source: Tobey and Minton, *Uncovering Student Thinking in Mathematics, Grades K-5: 25 Formative Assessment Problems for the Elementary Classroom*

Selected Response



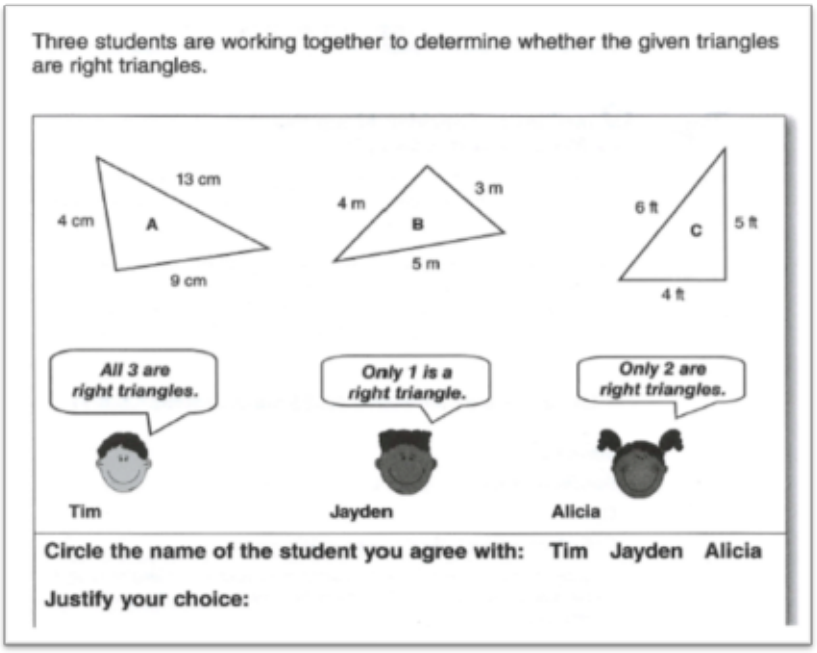
- One question
- One correct answer
- Several meaningful distractors

Multiple Selected Response



- Two or more conceptually related, but distinct problems
- One correct answer
- Several meaningful distractors

Opposing Views/Answers



- Two or more statements or claims are presented
- Response requires selecting and defending one of the claims or offering one's own claim

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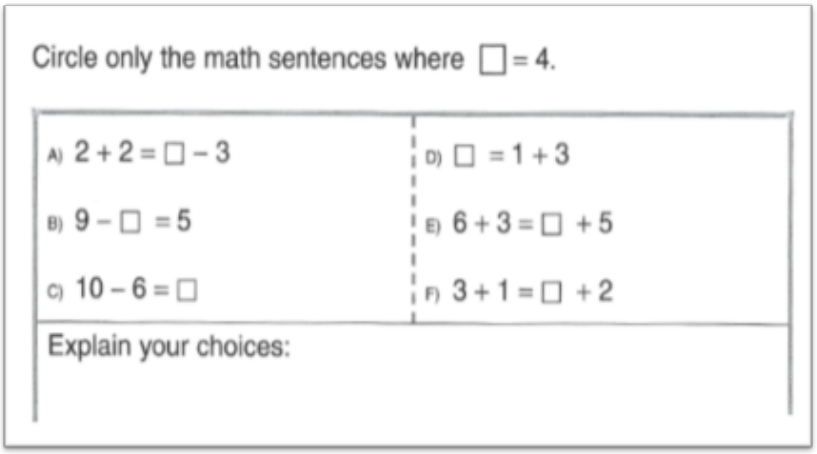
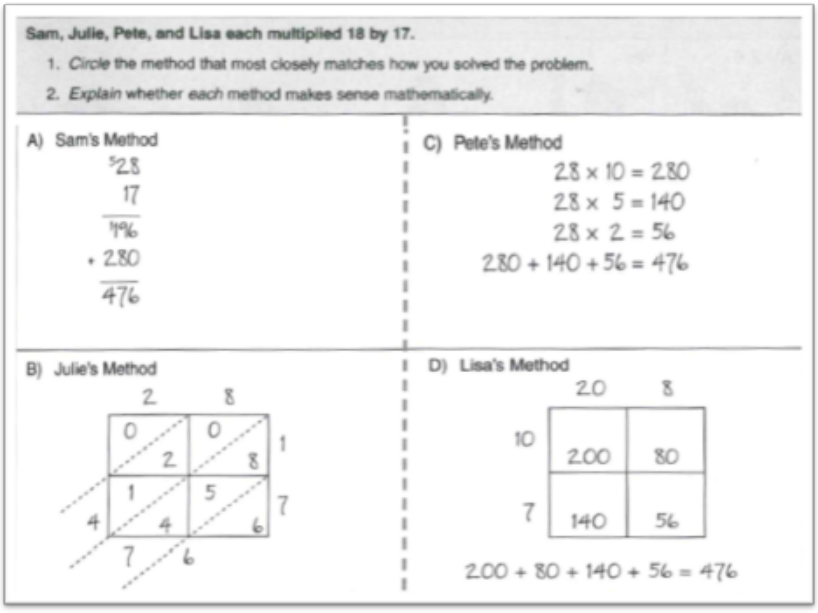
Examples and Non-examples List



- One statement or claim
- Several examples and non-examples are presented
- Response requires categorizing or sorting
- May involve justifying the sort

Describe the Strategy



Sam, Julie, Pete, and Lisa each multiplied 18 by 17.

1. *Circle* the method that most closely matches how you solved the problem.
2. *Explain* whether *each* method makes sense mathematically.

A) Sam's Method

$$\begin{array}{r} {}^{1}28 \\ \times\ 17 \\ \hline 196 \\ +\ 280 \\ \hline 476 \end{array}$$

C) Pete's Method

$28 \times 10 = 280$
$28 \times 5 = 140$
$28 \times 2 = 56$
$280 + 140 + 56 = 476$

B) Julie's Method

	2	8	
0	0	0	1
2	1	8	7
4	4	6	
7	6		

D) Lisa's Method

	20	8
10	200	80
7	140	56

$200 + 80 + 140 + 56 = 476$

- Problem or task given with one or more solution strategies
- Response requires a description of the strategy or explanation of why the strategy works or makes sense

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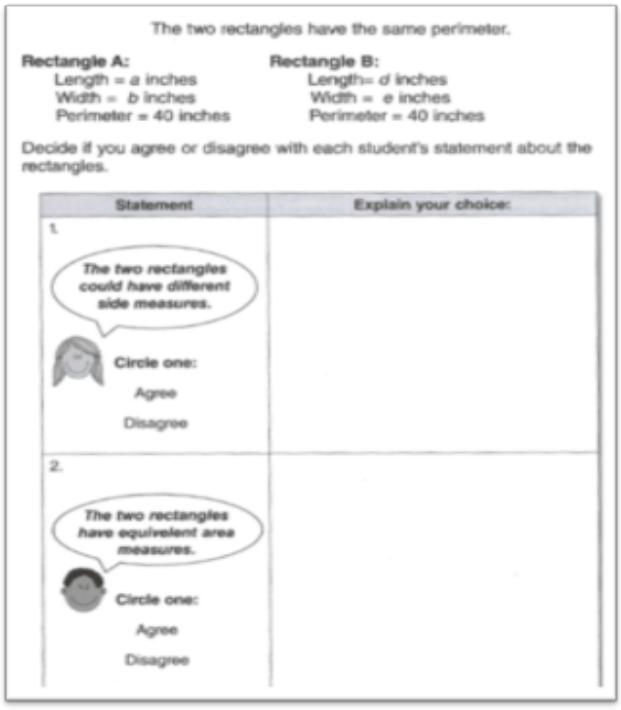
Agree or Disagree



The two rectangles have the same perimeter.

Rectangle A:
Length = *a* inches
Width = *b* inches
Perimeter = 40 inches

Rectangle B:
Length = *d* inches
Width = *e* inches
Perimeter = 40 inches

Decide if you agree or disagree with each student's statement about the rectangles.

Statement	Explain your choice:
1. *The two rectangles could have different side measures.* Circle one: Agree Disagree	
2. *The two rectangles have equivalent area measures.* Circle one: Agree Disagree	

- One or more statements or claims are presented
- Students choose "agree" or "disagree" and defend that choice

Levels of Task Cognitive Demand

Different levels of tasks lead to different opportunities for student learning. Higher-level demand tasks connect procedures to important mathematical concepts and representations to develop those concepts. These tasks provide opportunities for students to reason mathematically and make sense of mathematics.

Low-Level Cognitive Demand	High-Level Cognitive Demand
If I have two pennies, a nickel, two dimes, and a quarter, how money do I have? *Source: Hull, Miles, & Balka, 2014, pg. 23*	I have 5 coins in my pocket. The coins may only be pennies, nickels, dimes, or quarters. If I reach into my pocket and pull out three coins, how much money might I have in my hand? *Source: Hull, Miles, & Balka, 2014, pg. 23*
Martha was re-carpeting her bedroom which was 15 feet long and 10 feet wide. How many square feet of carpeting will she need to purchase? *Source: Stein, Smith, Henningsen, & Silver, 2000, pg. 1*	Ms. Brown's class will raise rabbits for their spring science fair. They have 24 feet of fencing with which to build a rectangular rabbit pen in which to keep the rabbits. a.) If Ms. Brown's students want their rabbits to have as much room as possible, how long would each of the sides of the pen be? b.) How long would each of the sides of the pen be if they had only 16 feet of fencing? c.) How would go about determining the pen with the most room for any amount of fencing? Organize your work so that someone else who reads it will understand it. *Source: Stein, Smith, Henningsen, & Silver, 2000, pg. 2*

Strategies for Transforming Tasks

Have a low level task? Try these strategies out for transforming it into a more worthwhile task.

Turn Around the Question

Process	Example
Step 1: Identify a topic.	The topic for tomorrow is averages.
Step 2: Think of a low-level question and write down the answer.	A low level question might be: The children in the Smith family are aged 3, 8, 9, 10, and 15. What is their average age?
Step 3: Make up a question that includes or addresses the answer to the original question.	A high-level question could be: There are five children in a family. Their average age is 9. How old might the children be?

Sullivan, P, & Lilburn, P., *Good Questions for Math Teaching: Why Ask Them and What to Ask: Grades K-6*, (2002.)

Adapting a Standard Problem

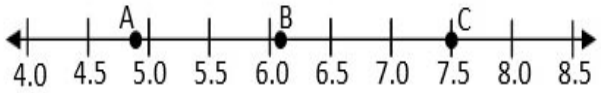
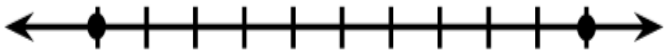
Process	Example
Step 1: Identify a topic.	The topic for my lesson is multiplication.
Step 2: Think of a standard problem and write down the answer.	A standard problem might be: Rod has 4 packages of pencils. There are 6 pencils in each package. How many pencils does Rod have in all?
Step 3: Adapt it to make it an open problem with multiple approaches and/or solutions.	An open problem could be: Rod has some packages of pencils. There are 2 more pencils in each package than the number of packages. How many pencils does Rod have in all?

Small, Marian, *Good Questions: Great Ways to Differentiate Mathematics Instruction*, (2012.)

Add a comparison component (e.g., Which is a better deal? Why? Which is correct? Why?)

Original Task	Transformed Task
The jSongs online music library is running a promotion: this week only, it costs $7.00 to sign up for the service, but you can download as many apps as you like for $1.50 each. Write an equation and draw a graph to represent how much someone spends to join jSongs and download their apps this week.	The jSongs and K-Songs are online music libraries. Both companies are running a promotion this week. jSongs $7 sign-up fee + $1.50 per app K-Songs $10 sign-up fee + $0.85 per app Which plan would you recommend to a friend? Write a paragraph explaining your recommendation. Use the slope and y-intercept in explaining your recommendation.

Add, "Explain why your answer is reasonable."

Original Task	Transformed Task
Match each irrational number with its correct point on the number line. $\sqrt{56}, \quad \sqrt{24}, \quad \sqrt{37}$ 	Estimate the value of each of the following numbers and place them on the number line. Explain in writing why each of your number placements is reasonable. $\sqrt{37}, \ \sqrt{24}, \quad \sqrt{42}, \ \sqrt{2}+7, \ 2\pi$ 

Add or remove constraints and conditions

Original Task	Transformed Task
Your class is taking a 200-mile bus trip to Washington, D.C. When the bust stops for a lunch break, you have traveled 160 miles. What percent of the trip have you traveled?	For school field trips between 150 and 250 miles away, the school requires the following: A stop to check the bus's tire pressure 20% of the way. A restroom stop 60% of the way. A food stop 80% of the way. At what number of miles should the bus driver plan to stop for a trip of 150 miles, 200 miles, and 250 miles?

Open up the task

Original Task	Transformed Task
James earns $90 in 5 hours mowing lawns. At this rate, how much will he earn in 8 hours?	a.) James earns $84 in 8 hours mowing lawns. Use the table to show how much he would earn for each given number of hours. b.) James wants to make more money in fewer hours. Suggest a new rate and use the table to show how much James would earn for each given number of hours at the new rate.

Hours Worked	10	8.5	7.5	6	3.5	2.5
Money Earned						

Hours Worked	3	5	2.5	4	7.5	8
Money Earned						

M. Lynn Breyfogle and Lauren E. Williams

Designing and Implementing Worthwhile Tasks

Teachers often need to alter mathematical tasks that they find in their district-adopted set of curriculum materials or develop new ones if none is present on a particular topic. However, how to best go about this work is not always clear. How do you make effective decisions about alterations? What should you keep in mind as you consider developing tasks to help your students with a particular idea or misconception? These and other questions were central in our minds as we developed a task to help students learn about elapsed time.

In preparation for the Pennsylvania System of School Assessment (PSSA) in mathematics, a fourth-grade class of twenty students in rural central Pennsylvania regularly used a practice book that covered a variety of mathematical concepts with a format similar to the state assessment. While observing this class, a student teacher noticed that many students exhibited frustration and a limited understanding of elapsed-time calculations. Because elapsed-time calculation is identified as a core standard in Pennsylvania (PDE 2008), teachers were concerned about this observation and therefore decided to facilitate a lesson that developed the concept of elapsed time in a meaningful way for the students.

Teaching elapsed time integrates easily at a point in a chapter that discusses regrouping in both addition and subtraction. Often it is taught at this point to encourage students to make the connection with time and extend the connection by using a number system other than base ten. Frequently, though, what happens is that students mistakenly assume that time *is* a base-ten system and arrive at erroneous answers. For example, given the problem, "Find how much time has elapsed between 9:33 a.m. and 11:08 a.m.," students follow a procedure of subtraction with regrouping and arrive at the nonsensical answer below:

$$\begin{array}{r} \not{1}1^{0}:{}^{1}08 \\ -\ 9:33 \\ \hline 1:75 \end{array}$$

Or, instead of approaching the problem by focusing on regrouping, teachers show a particular approach, such as missing-addend or counting-up strategies, similar to counting back change as a cashier does. Given the same problem, the solution procedure might be "from 9:33 a.m. to 10 a.m. is twenty-seven minutes, from 10 to 11 is one hour, and then eight more minutes, giving us an answer of one hour, thirty-five minutes." Although this approach has potential for helping students find elapsed time more successfully, the procedure pushes students to use a particular method that may or may not allow them to make sense of elapsed time.

Given the fact that the textbooks used in this classroom focused only on one particular procedure, the teachers decided to design a different set of tasks. This article describes the tasks they designed, discusses how the tasks aligned with NCTM's 1991 recommendations for worthwhile tasks, and further explains the importance of implementation and reflection strategies in helping students retain the challenging nature of the tasks (using the context of the fourth-grade elapsed-time lesson).

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Edited by **Kate Kline**, *kate.kline@wmich.edu, who is an associate professor of mathematics education at Western Michigan University. "From the Classroom," dedicated to the practicing elementary teacher, is a forum for sharing knowledge that is daily generated and used in classroom settings. Readers are encouraged to send submissions to this department by accessing* **tcm.msubmit.net**. *Manuscripts must not exceed 2000 words.*

Creating Tasks

One of the most important and yet difficult aspects of designing a lesson is choosing or creating the worthwhile mathematical task a teacher wants students to engage in (Lappan and Friel 1993). The teacher must consider how well the task provides the opportunity for students to investigate the mathematics content in an open but structured way and how well the task

connects with students' existing knowledge while pushing them deeper. When considering the design of a worthwhile task for elapsed time, Breyfogle and Williams kept this in mind by using the following questions as guideposts for the design:

- What goal is this to serve?
- Does it allow my students to make connections to content they already know?
- Does it allow for multiple solution methods or approaches?
- Does it encourage students to reason about mathematics and allow for them to communicate mathematically?

In the end, they arrived at a task requiring students to create their own schedule of a school day. Each student was to complete a blank schedule (see **table 1**) by arranging the eight provided classroom activities (e.g., math, reading, science) and assigning the starting and ending times for each. The students were also given specific parameters their schedule must meet (see **table 2**). They chose these parameters to increase students' cognitive demands by forcing them to go beyond simplistic solutions, such as using only whole-hour or half-hour increments.

For the second part of the task, students were placed into heterogeneous groups and instructed to discuss one another's schedules and choose one schedule to copy onto a poster for future reference. Students were to evaluate one another's schedules using the parameter list as a checklist to be sure the schedule met the criteria. Then they chose the schedule with the greatest variety of activity lengths. Finally, as a small group, they were to answer six analysis questions (see **fig. 1**) that included a comparison to a schedule the teacher had created with varied starting and ending times. As a whole group, students then had the opportunity to share their selected schedules and describe how they arrived at them as well as how they responded to the analysis questions.

What makes a task worthwhile?

A worthwhile task is a project, question, problem, construction, application, or exercise that engages students to reason about mathematical ideas, make connections, solve problems, and develop mathematical skills (NCTM 1991, pp. 24–25. On the basis of this definition, this task is worthwhile in that it (1) allows for connections, (2) incorporates multiple approaches and solutions, (3) requires higher-level thinking, and (4) facilitates reasoning and communication.

Table 1

Student Worksheet for Part 1 of Task

New School Schedule Name _____

Activity	Start Time	Stop Time
	9:00 a.m.	
		2:42 p.m.

*** Reminder**

- Lunch starts at 12:12 and is 32 minutes long.
- You must have gym, recess, science, math, reading, social studies, and art. You must spend at least ten minutes on each activity and at most one hour and ten minutes.

Table 2

Parameters for Part 1 of Task

Parameters for New School Day Schedule	
1.	The day must start at 9:00 a.m. and end at 2:42 p.m.
2.	Lunch must occur from 12:12 to 12:42.
3.	All eight daily activities must be used.
4.	Activities must last for at least ten minutes and no more than one hour and ten minutes.

1. A worthwhile task allows for connections. One identified aspect of a challenging task is its ability to connect to students' previous knowledge, experiences, and interests. The challenge presented in the elapsed-time lesson succeeds in connecting to the learners by capitalizing on a real-world experience (e.g., following a school schedule) familiar to each

of the students, therefore making the prompt accessible to all the students in the class. The task also capitalizes on a common student desire to change the school schedule. In addition to connecting with students' experiences and interests, the task makes connections between elapsed time and prior knowledge, such as addition, subtraction, time telling, and more-than and less-than concepts.

2. A worthwhile task incorporates multiple approaches and solutions. A second identified attribute of a worthwhile task is that it can be approached in more than one way or has more than one legitimate answer. This attribute generates a shift in focus from the importance of providing the "correct answer" to an emphasis on the problem-solving process and the development of associated skills. Additionally, because multiple approaches offer flexibility for students with varied prior knowledge and experiences to engage with the task at their own level, differentiation is conveniently built into the task and fosters equity in the instruction.

The open-ended format of the new school schedule task allows for numerous student approaches and solutions. The activity could result in the class creating twenty different, yet legitimate, school schedules. It also prompts discussion of the different approaches and solutions to the same challenge with the potential for students to share numerous methods they used to complete the task. For example, one student could compute how many hours are available in the entire day, subtract minutes for lunch, and then split her time among the activities as equally as possible. Another student could recognize the parameter of a specific lunch time as a benchmark to split her thinking. She could start at lunch and work backward to the beginning of the day and then work from lunch forward to the end of the day. A third student could begin by giving each of her favorite activities one hour and ten minutes and then divvying up the remaining time to the other activities. Each of these different approaches uses slightly different thinking. It is important for teachers to consider the different methods their students could use.

3. A worthwhile task requires higher-level thinking. A third attribute of a worthwhile task is its demand for students to use higher-level thinking. The elapsed-time task effectively uses limiting parameters to increase cognitive demands. Limiting the length of time spent on daily activities (at least ten minutes and at most one hour, ten minutes) causes students to reconsider the duration of school subjects. For example, when this task was implemented, one student asked, "If I spend an hour and ten minutes on all of my favorite subjects, I won't have time for social studies. What should I do?" which then prompted a useful class discussion on how to resolve this problem. The time restrictions, coupled with the constraint of a designated lunch time increases the use of higher-order thinking skills as students reevaluate their schedules against the parameters.

4. A worthwhile task facilitates reasoning and communicating mathematically The last key attribute is that the task ought to facilitate the need for students to reason and communicate mathematically. Including tasks that provide opportunities for valuable classroom discussion is therefore critical. The second part of the elapsed-time challenge provides an opportunity for students to collectively reason through analysis questions (see **fig. 1**), communicate their ideas with group members, and then share them with the entire class. The point of this whole-group discussion is for students to have the opportunity to publicize their thinking about the situation's mathematics—not why they chose how much time to assign to art but rather how they thought about the concept of elapsed time and determined the mathematics of the schedule.

Figure 1

Student groups received questions during part 2 of their task.

Group Questions

1. Which group member's schedule had the class members spend the least amount of time on science? How much time did they spend?
2. Which group member's schedule had the class members spend the most amount of time on science? How much time did they spend?
3. Did any member's schedule have the class spend more time in gym than in reading? If so, whose? How much more time?
4. Did any group member's schedule have the class spend less time in math than Ms. Williams's schedule? If so, whose? How much less time?
5. Look at Ms. Williams's starting time for art and your starting time for art. Which group member's schedule started art class at a time farthest away from Ms. Williams's starting time for art? How much time elapsed between those two starting times?
6. Look at Ms. Williams's ending time for reading and your ending time for reading. Which group member's schedule ended reading at a time farthest away from Ms. Williams's ending time for reading? How much time elapsed between those two ending times?

Implementing the Elapsed-Time Task

After Williams briefly led the entire class through scheduling and planning a party for her eleven-

year-old niece as an example, students independently created their own school-day schedules. They were eager to find solutions that not only fit the parameters but also satisfied their individual interests. Teachers enjoyed watching students actively engage with the activity, share ideas with neighboring students, ask questions, and ultimately reach a solution that they were excited to communicate.

What *keeps* it worthwhile?

Even such an engaging activity requires diligence on the teacher's part to keep the task at a high cognitive level. Features of the implementation—such as scaffolding, honoring a variety of solutions, and pressing students for explanation—are fundamental to maintaining a high learning value because they keep students, rather than the teacher, doing the reasoning. To support the students' development of mathematical problem-solving skills, teachers must prevent themselves from taking over the thinking (Herbel-Eisenmann and Breyfogle 2005).

1. Scaffold student thinking. During the implementation of this activity with a fourth-grade class, scaffolding proved to be a successful tool in promoting student reasoning through the elapsed-time challenge. The following exchange occurred as a student calculated the elapsed time from 11:10 to 12:02:

John: I can't figure out how much time I spent on math.
Teacher: Well, what is one hour from 11:10?
John: 12:10 … [*pausing*] so, it's less than one hour.
Teacher: Yes, now we need to find out how much less than one hour.
John [*pausing*]*:* Eight minutes.
Teacher: Ok, then how much time has elapsed from 11:10 to 12:02?
John: Sixty minutes minus eight is [*pausing*] fifty-two! Fifty-two minutes!

By suggesting that the student think about a one-hour chunk as a benchmark, Williams allowed John to do some of his own thinking. She also allowed think time for him to answer the questions she posed. When John answered, "12:10," she did not immediately jump in to ask another question. She provided a series of scaffold questions or statements that did not funnel his responses; he could use them as models in the future.

2. Honor a variety of strategies. Allowing for a variety of strategies is another way to maintain the level of the task. Students used many strategies to determine their schedules. For example, in contrast to John's approach of thinking about adding an hour and then subtracting to get to a benchmark number, Amanda used an additive approach. She calculated the duration of recess, from 12:44 to 1:10, by first counting on one minute from 12:44 to 12:45 (which can be considered a benchmark number or time), and then counting on using five-minute intervals until she reached 1:10. Amanda also used the addition problem 5 + 42 = 47 to calculate the elapsed time from 1:55 to 2:42. In this calculation, she arrived at her answer of forty-seven minutes by considering what it would take to get from 1:55 to 2:00 (five minutes) and then adding the number of minutes to 2:42.

3. Press for explanations. Continuous teacher questioning and pressing for explanation and justification is another aspect of effective implementation of a worthwhile task (Stein et al. 2000). This technique keeps the emphasis on solution strategies and reasoning (rather than the correct answer) and plays an important role in supporting mathematical reasoning (NCTM 1991). During the lesson, one student correctly calculated the elapsed time from 1:54 to 2:42 by providing the answer of forty-eight minutes to the class. Rather than acknowledging the correct answer and progressing with the lesson, Williams asked the student to explain his solution process:

Teacher: How did you find that answer?
Tom: Well, one hour from 1:54 is 2:54. Then I did fifty-four minus forty-two and got twelve.
Teacher: Why did you do fifty-four minus forty-two?
Tom: To figure out how much less than an hour it was. It was twelve minutes less than an hour. Then I did sixty minus twelve and got forty-eight, so the answer is forty-eight minutes.

A brief conversation requiring students to explain their thought processes can provide valuable insights to all. The process of communicating mathematically will benefit the student with the opportunity to clarify his thinking. The teacher benefits because she gains insight into this student's thinking and thought processes, which could guide further instruction. The class members gain from these exchanges because they are able to hear other methods that possibly differ from their own thinking.

Reflecting on the Implementation

The reflection that occurs after the lesson is also critical in making improvements so that teachers can become more effective at keeping the tasks' cognitive demands at a high level. In this case, as Breyfogle and Williams reflected collaboratively on the implementation of the elapsed-time tasks, they came to several observations. First, in the exchange with John described previously, it might have been possible to gain an even greater insight into the child's mind and provide a richer learning experience. If Williams had instead asked questions such as, "What are you thinking?" or "Do you have an idea of how you could proceed?" she could have come to understand what John already knows in order to guide, rather than lead, him to developing his own way to solve the problem. Additionally, in the second exchange, Williams might have pressed Tom's thinking more by asking exactly what he meant when he said, "Fifty-four minus forty-two," because many of the other students in class may have been thinking, "Fifty-four take away what will get me to forty-two?" Having Tom clarify his interpretation of "fifty-four minus forty-two" as the difference between forty-two and fifty-four would have been helpful to the other students. Continuing this conversation to involve some discussion of the different ways you can interpret subtraction, accompanied by appropriate representations, could have helped clarify Tom's thinking and perhaps provided more opportunity for other students to understand it.

Conclusion

The point of creating this worthwhile task was for students to develop ways to accurately and flexibly determine elapsed time. Student work showed that each was able to successfully complete the task. For example, at the beginning of class, Tony quickly responded, "Four o'clock," when students were asked to calculate the elapsed time of a party beginning at 1:30 and ending three hours later. At the end of class, Tony was able to successfully complete this task. The task challenged the entire class to make connections to prior knowledge, think critically, and communicate mathematically. It not only encouraged them to make sense of elapsed time but also resulted in a noticeably positive change in student engagement and learning. By incorporating the key elements of a worthwhile task and effective implementation and reflection techniques, the elapsed-time task created a desirable learning environment that is an essential foundation for understanding mathematics.

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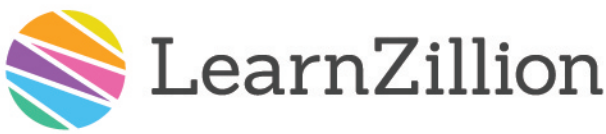
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