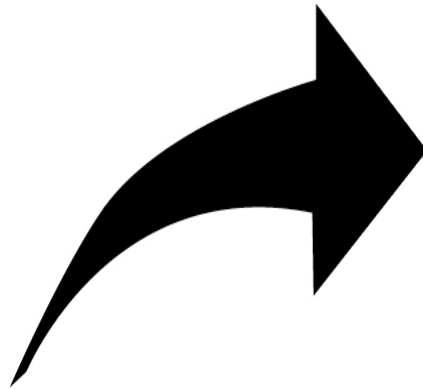


# **Meet the NWEA Challenge**



## **Strategically**

### **Resources for Strategic Teachers**

**Polk Bros. Foundation Center for Urban Education**  
**<http://teacher.depaul.edu>**

## Resources

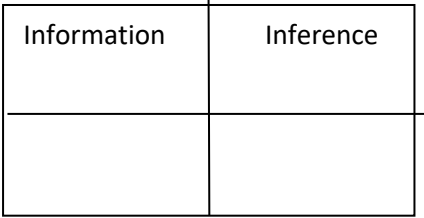
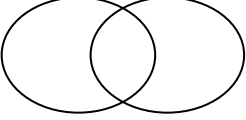

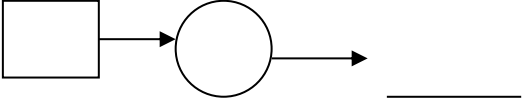
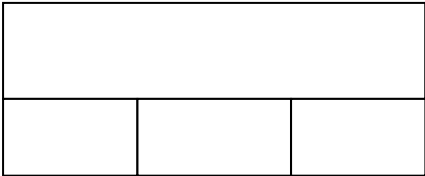
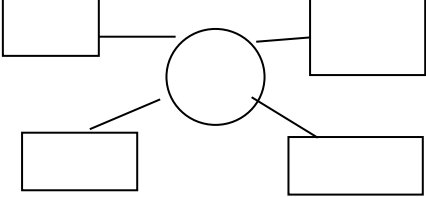
Plan to use Relevant Websites	p. 3
Use Graphic Organizers to Guide and Assess	p. 4
<b>Reading Resources</b>	
The Challenge: Complexity	p. 11
Reading Progress Action Plan	p. 12
Develop Reading Habits	p. 13
Comprehensive Listing of Text-Based Question Stems	p. 14
Projects Build Independent Competence	p. 18
Genres Matter	p. 19
<b>FICTION</b>	
Story Reader Requirements and Resources	p. 25
Strengthen Student Strategies	p. 26
Skill Building Activities	p. 27
Frames to Guide/Assess Fiction Reading	pp. 28-32
<b>POETRY</b>	
Poetry Reader Resources	p. 33
<b>NONFICTION</b>	
Information Text Skills: From Literal through Evaluative	p. 37
Comprehensive Nonfiction Reader Questions	p. 38
Nonfiction Strategies	p. 39
Assess Comprehensively	p. 40
Techniques, Text Features, Reference Sources	pp. 41-45
Guides to Scaffold or Assess Nonfiction Reading	p. 46-51
<b>GRAMMAR, SYNTAX, PUNCTUATION</b>	
NWEA Requirements	p. 53
Activity Resources	pp. 54-55 pp. 56-58
<b>MATH RESOURCES</b>	
Math Plan	p. 59
Schedule Math Progress	p. 60
Math Vocabulary	p. 61
Math Facts: Use Them	pp. 62-66
Problem Analyzers	pp. 67-69
Make Your Own Multiple Choice Challenge	p. 71
Make Your Own Test Success Guide	p. 72
Math Strategies List	p. 73
Choose Activities to Make More Math Progress	p. 74
Online Math Resources	pp. 75-82

## **MAKE STRATEGIC USE OF ONLINE RESOURCES**

- Choose an online resource each week for students to use at home.
- Students work with a partner, and agree on which answer is best before they “click” online questions.
- Students decide which kind of skill is most difficult for them and then use an online resource to work on that skill. Then they construct their own test question and give it to another student. Then they take the same kind of test question—resources in this guide include templates and stems to create questions.

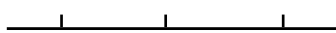
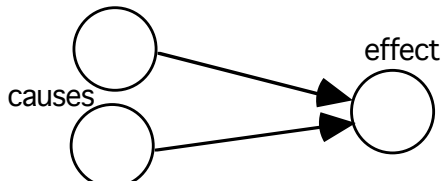
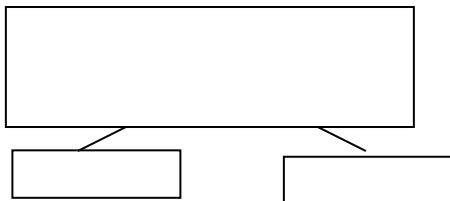
## Strategic Teachers use Graphic Organizers to Guide and Assess

After students complete a graphic organizer, they should **pair to compare** and then **REPAIR**—improve their response.

<p><b>SUPPORT INFERENCES</b></p>  <p><i>Explain how the information supports the inference.</i></p>	<p><b>COMPARE/CONTRAST</b></p>  <p>✓ <i>Include the most important similarities and differences.</i></p>
<p><b>SEQUENCE EVENTS</b></p>  <p>✓ What is the most important event?          ✓ <i>What caused it?</i>          ✓ <i>What changes did it cause?</i></p>	<p><b>CAUSE-EFFECT-PREDICTION</b>              Complete this diagram to show cause-effect—and your prediction of what will happen—you can do this in math as well as reading!</p>  <p>✓ <i>Include enough information so that someone else will see your idea clearly</i></p>
<p><b>MAIN IDEA</b>              Identify the main idea and three supporting facts.</p>  <p>✓ <i>State your idea clearly</i>          ✓ <i>Support it with important facts</i></p>	<p><b>ANALYZE THEME</b>              Complete this diagram to show how the writer communicates the theme.</p>  <p>✓ <i>Include important examples the writer uses to support the theme.</i></p>

# Graphic Organizers are Skills Developers

Small-scale examples you can adapt to include in your lessons.

<p><b>LIST</b></p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>✓ List five facts from the passage.</li> <li>✓ List two opinions from the passage.</li> </ul>				
<p><b>CLASSIFY</b></p> <table border="1" style="width: 100px; height: 60px; margin-left: auto; margin-right: auto;"> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> <tr> <td style="width: 50%;"></td> <td style="width: 50%;"></td> </tr> </table>					<ul style="list-style-type: none"> <li>✓ List information about the setting in column 1.</li> <li>✓ List information about the characters in column 2.</li> </ul>
<p><b>SEQUENCE</b></p> 	<ul style="list-style-type: none"> <li>✓ Put the events in order on the timeline.</li> <li>✓ Then predict what will happen next.</li> </ul>				
<p><b>COMPARE/CONTRAST</b></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="width: 50%;">Similarities</th> <th style="width: 50%;">Differences</th> </tr> </thead> <tbody> <tr> <td style="height: 40px;"></td> <td style="height: 40px;"></td> </tr> </tbody> </table>	Similarities	Differences			<ul style="list-style-type: none"> <li>✓ Compare and contrast the passage you read this week with the passage you read last week.</li> </ul>
Similarities	Differences				
 <p><b>ANALYZE/INFER RELATIONSHIPS</b></p>	<ul style="list-style-type: none"> <li>✓ What was the climax of the story?</li> <li>✓ Write it in <u>effect</u>.</li> <li>✓ What caused it? Note two causes in those circles.</li> </ul>				
<p><b>INFER THE MAIN IDEA</b></p> 	<ul style="list-style-type: none"> <li>✓ Write the Main Idea in the big rectangle.</li> <li>✓ Note two facts that support it in the boxes.</li> </ul>				
<p><b>DRAW CONCLUSIONS</b></p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 50%;">What I Think</th> <th style="width: 50%;">WHY</th> </tr> </thead> <tbody> <tr> <td style="height: 40px;"></td> <td style="height: 40px;"></td> </tr> </tbody> </table>	What I Think	WHY			<ul style="list-style-type: none"> <li>✓ What was the most important change?</li> <li>✓ Give two reasons for your conclusion.</li> </ul>
What I Think	WHY				

## Math Problem Solver

**The Problem**—What will you figure out?

*Your Strategy*

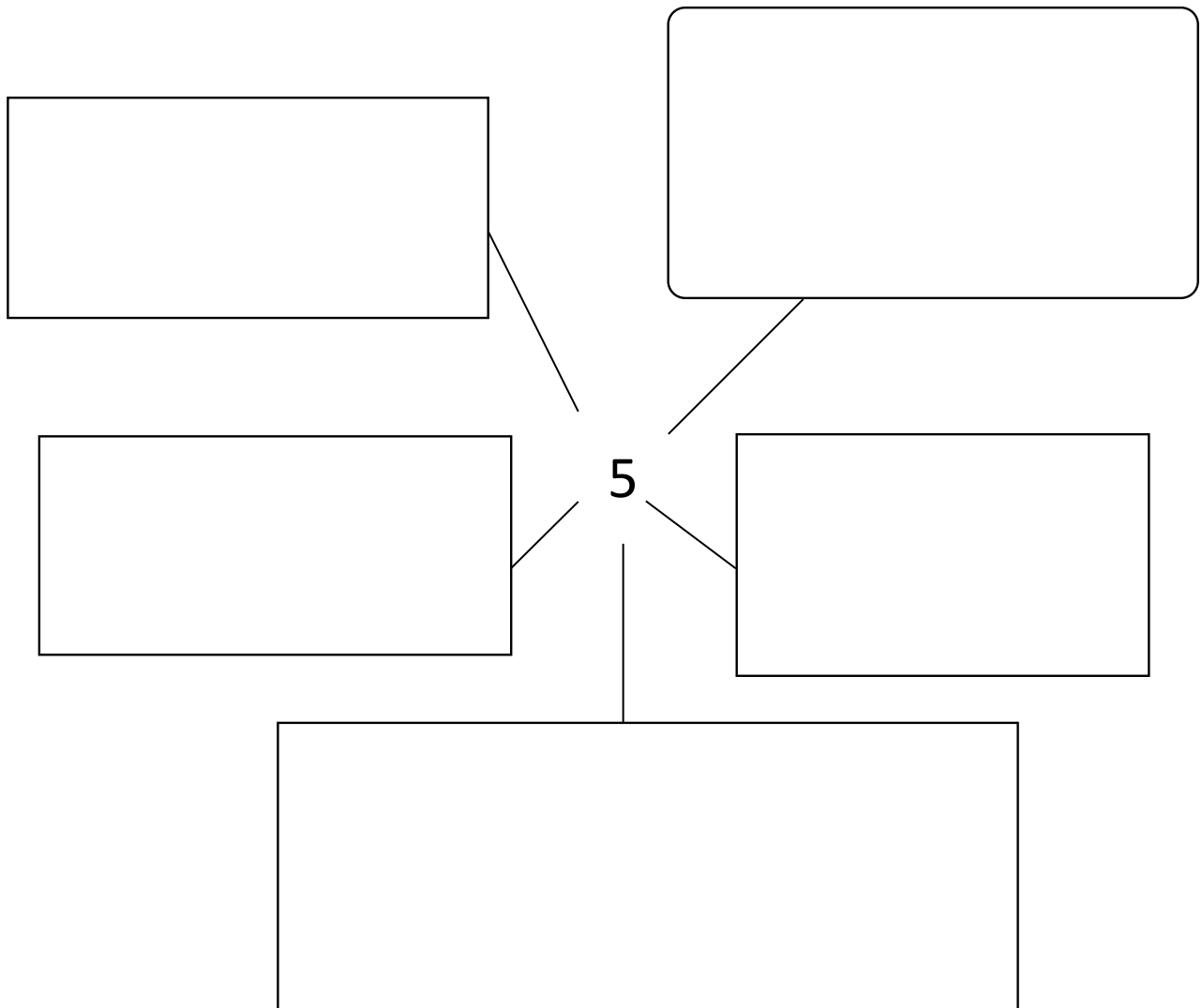
*Solve it here!*

*Answer:*

**Practice to KEEP math facts and operations current.**

CCSS Math Practice Standard 2. Reason abstractly and quantitatively.

Task: Use the math you know to show five different ways to make equations that result in 5. It could be fraction equations or multi-step addition or...



It could get bigger—imagine 50 ways to make a 50...

*Strategy: Use the H to make the Venn Clear*

## Compare and Contrast

CCSSR2—analyze relationships

**Directions:** Label each column with the name of each of two different characters, texts, or another kind of thing. Then list information about each one that **only describes it**. Then list ways they are alike.

<i>Insert name</i>		<i>Insert name</i>
	How they are alike	

### Write to Explain

*Directions: Explain what you think the most important differences are and why they are important. Then tell what you think is important to understand about how they are alike*



## Graphic Organizer Assessment Rubric

Usually a graphic organizer is part of a process, it is a way to organize information, an intermediate step to making a presentation or writing about a topic or situation. It may be a “pre-writer” that students use to organize their writing. So students should meet the following criteria when making a graphic organizer:

- ✓ Is it complete?
- ✓ Is it correct?
- ✓ Is it clear?

The following rubric is designed for use if the graphic organizer is the final assignment. Otherwise, it can be used as a checklist for making sure that the organization is complete and useful as students base their next steps—writing or presenting—on the information they have organized.

*Recommended: Students can exceed if they revise their responses to meet the level 4 requirements.*

# SHOW CLEAR THINKING

Rating	Requirements
4	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provides information for each part of the organizer</li> <li><input type="checkbox"/> All information is correct</li> <li><input type="checkbox"/> Gives organizer a title (if it does not have one)</li> <li><input type="checkbox"/> Writes substantially based on the organizer—an explanation, summary, evaluation, or synthesis of what the organizer presents (complexity varies with grade level—from sentence through extended response)</li> <li><input type="checkbox"/> Cites the source of the information (grades 5-8)</li> </ul>
3	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provides information for each part of the organizer</li> <li><input type="checkbox"/> All information is correct</li> <li><input type="checkbox"/> Gives organizer a title</li> <li><input type="checkbox"/> Writes concisely about the organizer</li> </ul>
2	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provides information for most parts of the organizer</li> <li><input type="checkbox"/> Most information is correct</li> </ul>
1	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provides information for part of the organizer</li> <li><input type="checkbox"/> Some information is correct</li> </ul>

# What is the NWEA Reading Challenge?

## text complexity

Recommendation:

Guide students to exercise skills with a text they can comprehend fluently, then guide them to apply the skill with more complex texts.

## Task complexity--levels of questions

Recommendation:

Guide students to respond to a complex question with steps—for example, figure out what the question is asking; locate the relevant part of the text to respond; analyze the text; evaluate the responses.

### **Raising Rigor Recommendations:**

- Increase text complexity and guide students to adjust their rate of reading to enable them to comprehend the more complex passages.
- Students make glossaries of literacy terms—with their own examples.
- Students explain what they will find in different genres.
- Students put the number of a question next to the part(s) of a passage they used to figure out the answer.
- Students Have students make up their own guide to NWEA test success.

## ACTION PLAN FOR NWEA READING PROGRESS

This is an example of a chart you can use at the beginning of second quarter and third quarter to plan literacy priorities that align with NWEA requirements.

**It's NOT a plan for each student.**

It's a way to reinforce NWEA-aligned skills in your literacy curriculum **for your class.**

It's a way to organize priorities for **independent reading, partner reading, learning centers.**

If you have questions about using this chart, please email [teacher@depaul.edu](mailto:teacher@depaul.edu).

<b>Week of</b> <hr/>	<b>Reading Literature</b> List a genre. List a skill students can use independently in learning centers, individual self-selected reading.	<b>Reading Nonfiction</b> List a genre. List a skill students can use independently in learning centers, individual self-selected reading.	<b>Grammar/Syntax</b> List a grammar or syntax pattern for students to revisit in learning centers.

**Example--Quarter Plan of NWEA-aligned literacy features.**

The NWEA weekly features chart is a way to organize independent and group activities.

This example includes kinds of reading skills/strategies that should be applied when students read any literature or read any nonfiction.

The weekly focus can be a way for students to do **independent reading or work with each other in learning centers.**

It also includes grammar/syntax activities that will reinforce knowledge of patterns students need to know to read clearly.

Week	Reading Literature	Reading Nonfiction	Grammar/Syntax
	Folktale <i>Infer theme</i>	History <i>Summarize it.</i>	Identify Possessives Make possessives examples
	Fable <i>Infer theme</i>	History <i>What caused events?</i>	Identify plural nouns. Identify plural verbs.
	Fantasy <i>Infer theme</i>	History <i>What text features help you understand it?</i>	Use multi-meaning words in sentences to show what they mean.
	Drama <i>Fluency--expression</i>	History <i>How do people feel about the events?</i>	Diagram sentences.
	Story <i>How does the writer help you understand characters?</i>	History What is the central idea?	Identify adjectives. Add adjectives to sentences.
	Story How does the narrator feel about the characters and events?	Science <i>Summarize it.</i>	Identify verb tense: past, present, future.
	Story <i>How does the writer use details to help you "see" the place.</i>	Science <i>What is the central idea?</i>	Match prefixes and roots to make words.
	Poem <i>What do you like about it? What techniques did the poet use?</i>	Science <i>What text features help you understand it?</i>	Match suffixes and roots to make words.
	Poem Read a limerick. Write your own!	Science <i>What details and examples help you understand it?</i>	Make a word list: Words with Latin Roots
	Poem <i>Read a haiku. Draw what it means. Then write your own.</i>	Science What is the author's purpose—why did the author write it?	Make a word list: Words with Latin Roots

## Develop Careful Reading Habits

Students need to develop abilities that help them learn more in every subject. In the left column, note a learning ability you will strengthen. In the right column, note how you will guide students to strengthen that ability. We put some examples. Make your own plan.

Reading Habit	How to Strengthen It
Students take time to think; students re-think	Students answer individually, then pair to COMPARE, then repair (choose a better answer)
Students analyze questions before they answer them.	Students restate the question in their own words. Then they “think out loud”—how will I answer it? Students pair and decide what a multiple choice question asks, then decide which is the best answer—this can be done with online questions—“pick carefully before you click”
Read carefully.	<i>Make the following steps part of every reading:</i> <ul style="list-style-type: none"> <li>• Use context to figure out the meaning of unfamiliar words</li> <li>• Summarize it and then identify the theme (literature) or central idea (nonfiction)</li> <li>• Explain how the author helps the reader understand it—structure of the text, features (nonfiction), techniques.</li> </ul>
_____	

## Strategy: Use Question stems to Focus on Skills

### Comprehensive List of Text-Based Question Stems

The following question stems can be used by teachers to focus students on specific interpretation and analysis skills. The students should read the entire selection and then respond to specific questions.

**Students also can construct their own questions with these stems.**

#### Infer word meaning from Context

- What does \_\_\_ mean in paragraph \_\_\_?
- Which word in paragraph \_\_\_ helps the reader understand the meaning of \_\_\_?
- Which word best defines \_\_\_ [a word] as used in this sentence?
- In paragraph \_\_, it says ... What is a \_\_\_\_\_?
- Which of these is the meaning of \_\_\_\_\_ as used in paragraph n?
- Which of these is closest in meaning to \_\_\_ as used in the passage?
- Which word in paragraph \_\_\_ helps the reader know what \_\_\_\_\_ means?
- What phrase means the opposite of \_\_\_\_\_ as used in paragraph x?
- What does the word \_\_\_\_\_ mean in paragraph x?

#### Use etymology (upper grade)

- Based on the etymology of the word \_\_\_\_\_, what does \_\_\_\_\_ mean?

#### Synonyms and Antonyms

- Which word from means the same as \_\_\_ in paragraph \_\_\_?
- What is a synonym for \_\_\_\_\_ in paragraph n?
- Which would be the best synonym for \_\_\_?
- Which is the antonym of \_\_\_\_\_?

#### Classify Genre

- What is the genre of \_\_\_\_\_?
- Which term best describes this type of literature?

#### Locate Information

- What question does the article answer?
- What was one way that \_\_\_\_\_?

#### Analyze details

- Which word from paragraph \_\_\_ shows that \_\_\_\_\_?
- Which word best describes \_\_\_\_\_

#### Analyze a Table, Chart, Other Source in Nonfiction

- Which conclusion does the table support?
- According to the article and the map, in which place \_\_\_\_\_?
- According to the chart, which statement is true?

### Compare/Contrast

- How is \_\_\_\_ different from \_\_\_\_?
- Which of these is most like \_\_\_\_\_
- \_\_\_ and \_\_\_ were alike because they both \_\_\_\_\_

### Analyze Plot

- What is the purpose of \_\_\_\_? [an action by a character]
- Which of these best describes the problem in the passage?
- How do \_\_\_\_\_'s feelings change from the beginning to the end?

### Analyze Sequence and Infer Cause-Effect

- What do the people do last at \_\_\_\_\_?
- According to the passage, which of these happened first?
- According to the passage, what causes \_\_\_\_?
- How did \_\_\_\_\_ change \_\_\_\_\_
- What is the most likely reason \_\_\_\_?
- What happened because \_\_\_\_\_?

### Analyze characters

- What is the most important thing \_\_ learns about himself?
- How does \_\_ *most likely* feel about \_\_\_\_?
- How does \_\_[a character] change from the beginning to the end of the passage?
- Which words best describe \_\_\_\_\_'s character?

### Infer motive

- Why does \_\_\_\_\_ feel \_\_\_\_\_?
- Why does \_\_\_\_\_ do \_\_\_\_\_?

### Infer a prediction

- After reading the title, what should you expect to learn from this selection?
- After reading the passage, which is the most likely to occur?

### Structure of the Passage

- Which is true of paragraphs \_\_ and \_\_?
- Which of these best describes the organizational pattern in paragraph 3?
- How does the author organize paragraphs x through x?
- Why is paragraph \_\_\_\_ important in this selection?
- How does the author organize the information in this article?

### Setting

- Which does “\_\_\_\_\_” suggest about the setting?
- Which detail explains the setting?

### Summary

- Which phrase *best* summarizes paragraph \_\_\_?
- What is the passage *mainly* about?
- Which is the *best* summary of “\_\_\_\_\_”?

### Interpret Figurative Language

- What does \_\_\_\_\_ mean as used in the passage?
- Which of these is a metaphor?
- How does the narrator describe \_\_\_\_\_?

### Theme (fiction and poetry) or Central Idea (nonfiction)

- What is the main idea of paragraphs \_\_\_-\_\_\_?
- Which sentence from paragraph \_\_\_ expresses the main idea of the paragraph?
- Which of these is a theme of this story?
- What is another good title for this passage?

### Distinguish minor and significant details

- Which of these is a minor detail in the passage?
- Which of these is an important detail that supports \_\_\_\_\_?

### Identify Opinion

- What is an opinion from the story?
- Which of these is an opinion from the passage?
- Which sentence best describes the author’s opinion of \_\_\_\_\_?
- What statement from the passage is an opinion?  
Which of these statements is a fact?

### Support for a Claim

- Which sentence from the passage *best* support the idea that ...?
- How does the author support the idea that \_\_\_\_\_?
- Which claim is supported by evidence from “\_\_\_\_\_”?

### Author’s techniques

- Why does the author compare \_\_\_ to \_\_\_?
- What is the *main* purpose of \_\_\_\_\_ [a text feature]?
- Which statement from the passage best represents \_\_\_’s mood in paragraph \_\_\_?
- Why did the author include \_\_\_\_\_ in paragraph \_\_\_?
- Why does the author include these details?
- Why does the author include the phrase \_\_\_?
- Which literary device is used in the sentence below?
- What literary device is used in the text below?
- Which of these techniques did the author use in the story?



### **Infer Mood**

- What is the mood in most of the story?
- How does the author create the mood?

### **Infer Tone**

- In paragraphs xx to xx, what is the author's tone?
- What is the tone of the passage?
- Why does the narrator refer to \_\_\_\_\_ as \_\_\_\_\_?

### **Identify point of view**

- From which point of view is the passage told?
- In this poem, which point of view does the poet use?

### **Author's Purpose**

- Which does the author want the reader to learn from this passage?
- What is the author's *main* purpose for comparing \_\_\_ to \_\_\_?
- What was the author's purpose in writing \_\_\_\_\_?
- What is the most likely reason the author wrote this selection?
- Why did the author write this selection?

### **Infer the Author's Point of View**

- With which statement would the author most likely agree?
- What is the author's point of view?

### **Identify Genre and Purpose of the Genre**

- Which would be the best to read to learn how to \_\_\_\_\_?
- In which book would this selection most likely be found?
- Who would be most likely to use this article?
- Which book would the author most likely have used to write this selection?
- Which of the following books would most likely contain information about \_\_\_?
- This selection is an example of which kind of literature?
- What type of story is \_\_\_\_\_?

## Projects Build Independent Competence

**This list is intended to inspire creative thinking by students.**

**They can choose a task that they apply to a current text.**

1. Advertisement for a book or a genre
2. Autobiography (fictional but realistic) or a character
3. “Before and After” portrait of a character representing changes
4. Biography of a character or real person, with illustrations
5. Cause, effect, indirect effects diagram
6. Debate
7. Dialogue (add to a story or historical event)
8. Diary of a character
9. Draw the setting
10. Exhibit about a time period/context
11. Figurative language list with illustrations
12. Graphic organizers with icons instead of or in addition to words
13. Hats for characters that communicate their traits
14. Illustrations for poems or stories or nonfiction text
15. Journal that a character or person (historical or biography) might have written
16. Letter—from a character to another, from you to the writer, from ... to ...
17. “Map” a story or history OR a science text
18. Nonfiction reader’s guide
19. Novel reader’s guide
20. Poem about or “by” a character or to communicate theme
21. Poem about a science topic
22. Poet’s Toolkit—technique list with examples
23. Questions based on a reading
24. Resume of a character
25. Song about a science or social science topic
26. Story Reader’s Guide—how to read a story
27. Nonfiction Text Writer’s Guide—how to write about a topic
28. Symbol for a character or a theme
29. Timeline for a story—with pictures showing significant events
30. Turn a poem into an Unpoem—restate a poem in a paragraph
31. Venn diagram to compare and contrast literature or nonfiction
32. Web diagram to represent a theme or central idea—including symbols or drawings
33. Write the next part of a story
34. Write about the topic in a science or social science passage in a book you design for younger students

## Genres Matter

List compiled by the Center for Urban Education (teacher.depaul.edu) based on DesCartes statements. The NWEA RIT levels are included to indicate levels at which NWEA will require students to respond to questions about texts in the genres.

NWEA INFORMATIONAL TEXT GENRES	NWEA LITERATURE GENRES
reference material 221-230	narrative 221-230
persuasive 211-220	autobiography 211-220
true story 211-220	<i>biography</i> 211-220
book review 211-220	folk tale 211-220
journals and specialized periodicals 211-220	poems 201-210
persuasive 211-220	folk tale 201-210
personal writing 211-220	fables 201-210
advertisements 211-220	myths 201-210
textbook 211-220	tall tale 201-210
encyclopedia 201-210	historical fiction 201-210
thesaurus 201-210	fantasy 191-200
informational magazines 191-200	story 191-200
atlas 191-200	poems 191-200
encyclopedia 191-200	fable 191-200
weather reports 191-200	memoir 191-200
advertisements 191-200	play 191-200
informational magazines 181-190	play 191-200
dictionaries 181-190	stories as "make-believe" 181-190
informal notes 181-190	story 181-190
letters 181-190	poems 181-190
journal entry 181-190	fairy tale 181-190
essay 171-180	fairy tale 171-180
newspaper 171-180	stories as "make-believe" 171-180
dictionary 171-180	stories that could happen 171-180
lists 171-180	
thank you notes 161-170 and 171-180	
dictionary 161-170	
short informational passage describing events 161-170	

*What will you do to expand students' knowledge of different genres?  
See the next pages for ideas.*

**NWEA Reading Test Vocabulary Terms** CCSSR4—expand academic vocabulary.

Check the terms that fit your grade. Then build them into your lessons and activities. The next page shows how to fit them into interpreting different genres.

alliteration	analogy	anecdote
anthology	antithesis	aphorism
archetype	assonance	author’s purpose
characteristics	characterization	cliché
climax	colloquialism	conclusion
conflict	connotation	consonance
context	detail	dialogue
diary	drama	emotion
entertain	evaluate	event
evidence	exaggeration	example
excerpt	exposition (fiction)	fable
falling action	fantasy	feeling
fiction	figurative language	Figure of speech
First person	Flashback	Folk tale
Foreshadow	Formal essay	genre
historical fiction	humor	hyperbole
iambic pentameter	idiom	illustration
image	imagery	irony
legend	literary device	literary element
literature	main character	metaphor
meter	minor detail	mood
moral	myth	narrate
narrative	narrator	novel
omniscient	onomatopoeia	order of events
oxymoron	parable	paradox
paragraph	parallelism	passage
Phrase	Play	plot
plot twist	poem	poet
poetry	point of view	predict
problem and solution	pun	qualities
repetition	resolution	resolve
rhyme	rhythm	riddle
rising action	satire	scansion
scene	second person	selection
sensory detail	sequence	setting
short story	simile	sonnet
stanza	structure	summarize
summary	support	suspense
symbol	symbolism	symbolize
synecdoche	tale	tall tale
theme	third person	third person objective
third person omniscient	title	title page
tone	trait	viewpoint
voice	word play	world literature

## Analyze Craft and Structure.... CCSSR5 (writer's choices) and CCSSR6 (purpose)

Check the techniques that match your grade level. Students should be able to recognize these when they read and explain why a writer uses them.

Fiction Writers	Poets	Nonfiction Writers	Biographers
<ul style="list-style-type: none"> <li>○ action</li> <li>○ aphorism</li> <li>○ archetype (advanced)</li> <li>○ cliché</li> <li>○ climax</li> <li>○ colloquialism</li> <li>○ conflict</li> <li>○ context clue</li> <li>○ descriptive details</li> <li>○ dialogue</li> <li>○ falling action</li> <li>○ figurative language</li> <li>○ flashback</li> <li>○ foreshadow</li> <li>○ humor</li> <li>○ hyperbole</li> <li>○ idiom</li> <li>○ imagery</li> <li>○ irony</li> <li>○ metaphor</li> <li>○ mood</li> <li>○ myth</li> <li>○ narrator</li> <li>○ onomatopoeia</li> <li>○ parallelism</li> <li>○ phrase</li> <li>○ point of view</li> <li>○ qualities</li> <li>○ resolution</li> <li>○ rising action</li> <li>○ scene</li> <li>○ sensory detail</li> <li>○ simile</li> <li>○ stage directions</li> <li>○ suspense</li> <li>○ symbolism</li> <li>○ narration</li> <li>○ tone</li> <li>○ visual detail</li> <li>○ voice</li> </ul>	<ul style="list-style-type: none"> <li>○ alliteration</li> <li>○ assonance</li> <li>○ figurative language</li> <li>○ haiku</li> <li>○ hyperbole</li> <li>○ iambic pentameter</li> <li>○ imagery</li> <li>○ irony</li> <li>○ limerick</li> <li>○ metaphor</li> <li>○ meter</li> <li>○ mood</li> <li>○ narrator</li> <li>○ onomatopoeia</li> <li>○ point of view</li> <li>○ repetition</li> <li>○ rhyme</li> <li>○ rhythm</li> <li>○ satire</li> <li>○ sensory detail</li> <li>○ simile</li> <li>○ stanza</li> <li>○ symbolism</li> <li>○ tone</li> <li>○ visual detail</li> <li>○ voice</li> <li>○ word play</li> </ul>	<ul style="list-style-type: none"> <li>○ anecdote</li> <li>○ argument</li> <li>○ boldface</li> <li>○ captions</li> <li>○ claim</li> <li>○ compare</li> <li>○ context</li> <li>○ contrast</li> <li>○ data</li> <li>○ debate</li> <li>○ description</li> <li>○ details</li> <li>○ dialogue</li> <li>○ examples</li> <li>○ graph</li> <li>○ headings</li> <li>○ illustrations</li> <li>○ main topic</li> <li>○ narrative</li> <li>○ point of view</li> <li>○ primary source</li> <li>○ quotations</li> <li>○ persuasive</li> <li>○ sequence</li> <li>○ strength of support</li> <li>○ table</li> <li>○ text structure:                             <ul style="list-style-type: none"> <li>cause-effect</li> <li>compare/contrast</li> <li>description</li> <li>problem-solution</li> <li>sequence</li> </ul> </li> <li>○ thesis; antithesis</li> <li>○ timeline</li> <li>○ titles and subtitles</li> <li>○ tone</li> <li>○ topic sentence</li> <li>○ transition</li> <li>○ viewpoint</li> <li>○ voice</li> </ul>	<p><i>A biographer may use many of the nonfiction writer's techniques as well as techniques of the story writer. Usually, these techniques are part of a biography.</i></p> <ul style="list-style-type: none"> <li>○ challenges</li> <li>○ commentary</li> <li>○ conflict</li> <li>○ context details</li> <li>○ dialogue</li> <li>○ mood</li> <li>○ quotations</li> <li>○ perspectives</li> <li>○ tone</li> </ul>

## Genre-Focused Learning Activity *Examples*

### Poetry

Picture the <b>important words</b> in the poem—words that give the reader an image.
Analyze a poem, <b>restate the meanings of important lines</b> .
Make <b>metaphor or simile</b> chart: word in column 1; picture in column 2.
List <b>examples of techniques</b> the poet used. Explain how they helped communicate the theme.
<b>Write a poem</b> that <b>communicates</b> the same <b>theme</b> .

### Nonfiction

Use <b>nonfiction features</b> to <b>identify important ideas and information</b> . Then make a “learner’s guide”—how do you learn when you read nonfiction?
<b>Clarify structure</b> of a text: <b>Outline passage</b> , identifying <b>important ideas</b> and <b>supporting information</b> . <b>Identify central idea</b> . <b>Summarize</b> the passage, stating <b>central idea</b> .
<b>Analyze Cause-Effect</b> : Make timeline of important events in a <b>nonfiction narrative--</b> biography or history. Explain an important <b>choice, causes</b> and the <b>effects</b> of that choice.
<b>Integrate information</b> : Identify <b>relevant information</b> from two different articles to respond to a <b>constructed response prompt</b> .
<b>Compare and contrast</b> ideas and content of two different texts on same topic.

### Fiction--Elements of Fiction—Author’s Choices

<b>Sequence--</b> make timeline of events in a story--identifying important actions. Identify <b>causes and effects</b> of an event.
Complete "map" a story", <b>characters</b> and <b>setting; problem</b> and <b>solution</b> .
Write concise <b>summary</b> . Decide which event(s) are most important and how the writer uses them to communicate the <b>theme</b> .
<b>Infer the theme</b> of the story and <b>support analysis with evidence</b> based on the author's choices. (NWEA uses main idea and also theme in different questions.)
<b>Compare and contrast</b> two stories with same theme.
<b>Plan a story</b> to communicate a theme (or main idea—NWEA term).

### Fiction--Character Development

*Also can apply to biography analysis.*

Complete <b>character analysis</b> chart: how author communicates the <b>traits</b> and <b>feelings</b> of characters in the story-- <b>actions, dialogue, reactions</b> of characters.
Add <b>dialogue</b> to a story—what might the characters have said at different points?
<b>Dramatize</b> a story, <b>selecting events important to the character’s development</b> and adding dialogue that communicates how the central character develops.
<b>Analyze how the author uses the character’s development to support the theme of the story</b> .
<b>Synthesis</b> : Write the next part of the story—tell what the character does next.

## Author's Technique Examples

List Author's Techniques in the left column.

Then in the right column write an example—from a passage or one you create.

Technique	Example

**You can turn this into a matching game.**

Cut out the items and mix them up.

Then ask other students to match the example with the technique.

---

Focus → Think Clearly ✓ Learn More ↗

---



# Story Reader Requirements and Resources

## NWEA Skills Categories: FICTION

### COMPREHEND: What does the story tell me?

- locates information
- infers meaning
- makes predictions
- draws conclusions

### ANALYZE TO INFER

The following NWEA skills relate to inferring the theme or moral of a story.

- summarizes
- infers/analyzes theme/lesson/moral/main idea of a story or other work of literature

### INTERPRET:

What parts of story structure and literary techniques does the author use to communicate the theme?

- setting
- character
- plot—sequence, cause and effect, conflict/resolution
- author's viewpoint
- tone
- point of view
- dialogue
- foreshadowing
- irony
- mood
- imagery and sensory language
- figurative language
- similes and metaphors
- idioms
- symbolism

*See the list of techniques for more specifics.*

## Strengthen Student Strategies: READING FICTION

NWEA Competence	Strategy
All competencies	<ul style="list-style-type: none"> <li>• Confirm that you know what the terms mean--explain what the literature term means with an example: character trait, inference, theme, plot, other terms—see list of terms.</li> <li>• Read a question, decide how to figure out the best response, then evaluate which answer is best.</li> </ul>
Figure out the theme of a story	<ul style="list-style-type: none"> <li>• Identify the important events.</li> <li>• Figure out what lesson or message the author wants the reader to understand because of those events.</li> </ul>
Infer character traits	<ul style="list-style-type: none"> <li>• Identify actions a character takes.</li> <li>• Figure out what trait those actions show the character has.</li> </ul>
Identify techniques an author uses.	<ul style="list-style-type: none"> <li>• Identify techniques used in a story.</li> <li>• Explain how the technique an author uses helps you understand the characters, setting, or plot of a story.</li> </ul>
Interpret complex text	<ul style="list-style-type: none"> <li>• Adjust rate of reading to complexity of text.</li> <li>• Read the story completely, then revisit it to respond to questions.</li> </ul>

## Choose an Activity to Build Story Analysis Skills

Write an ad for a book.	Write an advice letter to a character.	Make up the Autobiography of a character.
Draw pictures of the characters in the story.	Make up dialogue for a story—add it to the story.	Write the diary of a character.
Draw the setting of a story.	Design hats for characters that communicate their traits.	Illustrate a story
Write the journal of a character.	Make up “tweets” from characters about their story.	Make up questions about a story—give them to another student.
Write a song based on a story.	Write the next part of the story	Write your own story.
Turn part of a story into a play.	Turn part of a story into a cartoon.	<i>Your turn—what’s a smart activity you want to do?</i>

## Read Stories Comprehensively

**You can use this guide to tell about a story or plan your own!**

*CCSSR1—read carefully. CCSSR3—story elements*

**Guide/Assess:** *This guide can be an activity or an assessment if completed independently.*

### Where: The Place

--

### Who: Characters

--	--

# What Happens

CCSSR3—identify sequence of events in a story.

**Guide/Assess:** *This guide can be an activity or an assessment if completed independently.*

1

2

3

CCSSR2—Figure out the message

What is the lesson or theme of the story?

## I Can Summarize a Story and Infer the Theme or Message

*This Graphic Organizer is an assessment if completed independently, or a guide if the teacher models.*

CCSSR2. Determine **central ideas or themes** of a text and analyze their development; **summarize** the key supporting details and ideas.

*Identify: Name or draw three of the characters.*

--	--	--

*Sequence: Draw pictures and add captions or write words to tell the plot.*

<i>How it starts.</i>	<i>What happens that is most important</i>	<i>How it ends</i>

*Summarize: Tell about the people and what happens.*

---

---

---

---

---

---

**Infer:** What is the message or theme—what does the writer want you to understand by reading the story?

---

**Strategy: Analyze Actions to Infer TRAITS.**

CCSSR3—analyze relationships and traits.

**Guide/Assess:** *This guide can be an activity or an assessment if completed independently.*

*Note or draw an action a character or person takes. Then tell a trait that action shows.*

Character or Person: \_\_\_\_\_

ACTION

Trait the action shows: \_\_\_\_\_

**A character or person has more than one trait.**

*Note or draw another action that character or person takes. Tell the trait that shows.*

ACTION

Trait the action shows: \_\_\_\_\_

*You can do this same activity to tell about yourself!  
Show and tell two great traits you have.*

**STRATEGY: Assess Fiction Reading Competencies Comprehensively**

*This assessment can be used with any story. It emphasizes CCSSR1 Read Closely, analyze relationships (CCSSR3) then make logical inferences with evidence, analyze relationships (CCSSR3), and CCSSR2, Determine theme and summarize supporting details and ideas.*

**1. Identify Sequence:**

What happened at the end? \_\_\_\_\_

**2. Infer Character Traits:**

What does **trait** mean? \_\_\_\_\_

Name one character in the story. \_\_\_\_\_

What is one trait you infer that character has? \_\_\_\_\_

**Evidence:** Explain why you think that.

\_\_\_\_\_

**3. Identify cause and effect of important event.** What is an important event in the story?

\_\_\_\_\_

**Infer cause:** What caused that event?

\_\_\_\_\_

**Infer effect:** What happened because of that event?

\_\_\_\_\_

**4. Summarize** the passage in 2 sentences. Tell what is most important.

\_\_\_\_\_

\_\_\_\_\_

**5. Infer the message or theme:** What is the theme of the story?

\_\_\_\_\_

**Why do you think that is the theme?**

\_\_\_\_\_

\_\_\_\_\_

**6. Identify techniques.** List three techniques the author used. (CCSSR5)

\_\_\_\_\_



# POETRY READER RESOURCES

## NWEA Poetry Interpretation

NWEA requires these abilities.

- Analyzes poems to **determine the main idea**
- **Compares** poems to determine the **common theme**
- Analyzes poems to **identify the theme** or main idea
- **Identifies the mood** in a poem
- **Infers the author's viewpoint**
- **Compares content**
- **Analyzes the mood**
- **Identifies specific forms**

## POETRY INTERPRETATION QUESTIONS

**Before/At Beginning of Reading** What kinds of things does a poet do to write a good poem?

Students should read a poem at least two times so first they appreciate it and then interpret it.

<b>After First Reading</b>	<b>After Second Reading</b>
<p><b>Infer from Context</b>            What does the word _____ mean?  <i>Why do you think so?</i></p>	<p><b>Identifies specific form of poem</b>            Which kind of poem is it?            (limerick, haiku, sonnet are examples)            How do you know?</p>
<p><b>Analyze Mood</b>            How does the poet want you to feel?  <i>Why do you think that?</i></p>	<p><b>Analyze Author's Techniques</b>            What technique does the writer use?            rhyme            repetition            irony            sensory language            simile            metaphor            symbolism            figurative language</p>
<p><b>Analyze Structure</b>            Why does the poet start with the first sentence—what does the poet want you to think about because of that first sentence?            Why does the poet end with the last sentence?            What does the poet want to be sure you think about because of that last part?</p>	<p><i>How does that technique help the poet communicate the idea or theme of the poem?</i></p>
<p><b>Identify/Infer the Theme</b>            What is the theme of the poem?            State it in a sentence.  <i>What parts of the poem communicate that theme?</i></p>	<p><b>ADVANCED:</b>  <b>Compare this poem to another poem or to a story with a similar theme.</b>  <i>How are they alike?</i>  <i>How are they different?</i></p>

## Strategy: Analyze Poems Completely

*Italicized items are NWEA specifications.*

### First time you read a poem, enjoy it!

Note what you like about the poem. Draw a picture that shows what you see when you read it.

### Second Time: Interpret It.

CCSSR2. Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

*(191) Analyzes poem to determine main idea. (NWEA uses main idea and theme.)*

What is the theme? \_\_\_\_\_

What is one statement from the poem that best represents that theme or main idea?

*(221) Evaluates statements to choose the one which best represents the main idea of a poem*

---

How does the author feel about the topic? \_\_\_\_\_

*(191) Infers author's viewpoint (term not used) in poems.*

What does the writer include that tells you that? \_\_\_\_\_

---

### Third Time, Analyze how the writer helps you understand the poem.

CCSSR4. **Interpret words and phrases** as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.

What is the mood of the poem?*(181)* \_\_\_\_\_

List one line that shows that mood. *(181)* \_\_\_\_\_

---

Look for examples of these kinds of words and phrases. List one you find (if you find it).

Tell what it means.

simile (181)	
metaphor (201)	
image (201)	

**Think More** Explain how the writer helps you understand the poem. (191)

**Do More** Write your own poem about the same theme.

# Poem Planner

CCSSW4-5. Organize a poem to communicate a theme.

**Strategy: Plan and write a poem to learn how to read a poem!**

*Start with your idea: What is the idea you want to tell in your poem?*

---

*Draw a picture or write to explain what you want the poem to communicate.*

**Plan it here.** *What examples will you put into your poem?*

---

---

---

**Next, write your poem!**

**Then POLISH your poem.**

*Choose techniques to use to make it even better.*

<input type="radio"/> alliteration	<input type="radio"/> detail	<input type="radio"/> hyperbole	<input type="radio"/> metaphor
<input type="radio"/> onomatopoeia	<input type="radio"/> personification	<input type="radio"/> repetition	<input type="radio"/> rhyme
<input type="radio"/> simile	<input type="radio"/> symbol	<input type="radio"/>	<input type="radio"/>

# NONFICTION READER RESOURCES

## Informational Text Skills: From literal through evaluative

NWEA includes items that require students to identify and analyze text with these skills.

### GET IT!

- ✓ Locate Information
- ✓ Topic and subtopics
- ✓ Describe
- ✓ Key Details
- ✓ Sequence
- ✓ Structure of the text

### GET IT CLEAR!

- ✓ Infer
- ✓ Draw Conclusions
- ✓ Cause/Effect
- ✓ Compare/Contrast

### THINK IT THROUGH!

- ✓ Summarize
- ✓ Central Idea or Main Idea
- ✓ Synthesize

### EVALUATE IT!

- ✓ Author's Viewpoint/Bias
- ✓ Point of View/Purpose
- ✓ Facts vs. Opinions
- ✓ Claims and support
- ✓ Validity of Information
- ✓ Author's Style/Technique
- ✓ Persuasive Language

## COMPREHENSIVE NONFICTION READER QUESTIONS

Students can respond to these questions in discussions, in notes, and in tasks.

During Reading	After Reading
<p><b>Text Features</b>                      What text features do you notice?                      How will they help you learn from this reading?</p>	<p><b>Using Glossary and Index</b>                      How does a glossary help you understand the reading?                      How does an index help readers?</p>
<p><b>Locate information</b>                      What is a fact about ___ in paragraph __.                      Find ___ in the table.</p>	<p><b>Compare and Contrast</b>                      How is ___ like ___?                      How is ___ different from ___?</p>
<p><b>Locate, then Analyze Information</b>                      What did you learn about the topic in the first paragraph??  <i>What information tells you that?</i></p>	<p><b>Identify Opinion</b>                      Look for a sentence that is an opinion. Why do you think it is an opinion?</p>
<p><b>Infer from Context</b>                      What does this word mean?  <i>Why do you think that?</i></p>	<p><b>Analyze Examples</b>  <i>Why did the writer include this information in paragraph ___? What was the writer trying to help you understand?</i></p>
<p><b>Paraphrase statements</b>                      What is another way to say _____?                      (sentence or phrase from text)</p>	<p><b>Summarize</b> the text:                      First, list important ideas you learned.                      Then write a short summary that tells the ideas and the most important examples.</p>
<p><b>Use Visuals</b>                      How does the ___ (chart, diagram, graph) help you understand the text?</p>	<p><b>Identify/Infer the Main Idea</b>                      What is the central idea of the whole passage?                      State it in a sentence.  <i>What parts of the passage support it?</i>  <i>What is the best conclusion you can make based on what you read?</i></p>
<p><b>Main Idea of a Paragraph</b>                      What is the main idea of this paragraph?                      What information supports it?</p>	

## NONFICTION *STRATEGIES* ENABLE READERS TO USE SKILLS

Numbers in parentheses indicate applied Common Core reading standards.

Strategy	Got it	Working on It
Preview a passage. (R1 and R5)		
Establish a purpose for reading. (RF4)		
Skim a text to see major visual patterns—see how the pages are organized. (R5)		
Identify structure of text—how did the author organize it? (R2 and R5)		
Use index, glossary, table of contents. (R1 and W7)		
Adjust reading rate to level of text difficulty (R1 and R2)		
Use word structure, context, and (if available) glossary to determine meanings of academic vocabulary. (RF3 and R4)		
Locate information related to a question (R1 and W7)		
Use headings and other text features to identify ideas and locate information. (R2, R5)		
Summarize—list, then summarize important ideas and information (R2)		
Infer word meaning with evidence—support your answer with information (1 and 4)		
Look for important ideas—stop after a section and figure out the ideas it explains and the information that supports those ideas. (R2)		
Re-read to clarify ideas. (R1 and R2)		
Use graphic organizers—“web”, Venn, cause-effect, other ways to analyze relationships in a text. (R2 and R3)		
Analyze relationship between author’s purpose (R6) and choices of content. (R5)		
Combine information and ideas from different texts or other sources. (R7)		
Evaluate the strength of evidence to support a claim/position (R2, R5 and R8)		

## Strategy: Assess Nonfiction Reading Comprehensively

*This assessment can be used with any nonfiction.. It emphasizes CCSSR1, Read Closely, then make logical inferences with evidence, and CCSSR2, Determine theme and summarize supporting details and ideas, and CCSSR8—evaluate support for a claim.*

1. **What is the topic?** \_\_\_\_\_

*The topic is not the title.* What is the topic that the passage explains?

2. **Infer the main idea of a paragraph:** What is the main idea of the first paragraph?

\_\_\_\_\_

Why do you think that is the main idea of the first paragraph?

\_\_\_\_\_

3. **Classify Fact and Opinion:** What is an opinion in the passage?

\_\_\_\_\_

*Explain: How do you know it is an opinion?*

\_\_\_\_\_

4. **Identify and Analyze a Claim:** What is a claim that the writer makes?

\_\_\_\_\_

*How does the writer support it?*

\_\_\_\_\_

5. **Infer the central idea of a passage.** What is the central or main idea of the whole passage?

\_\_\_\_\_

Support your answer. Explain why you think that is the main idea.

\_\_\_\_\_

\_\_\_\_\_

6. Identify a **text feature**. Tell how it helps you comprehend the text.

\_\_\_\_\_

\_\_\_\_\_

7. Identify a **technique** the writer used. \_\_\_\_\_



## NONFICTION ANALYZER: The Author’s Techniques and Text Features

CCSSR5: identify writer’s techniques.

Strategy: Analyze any nonfiction text to figure out how the author uses techniques to help readers comprehend the ideas.

**Read an article and analyze how the writer communicated the ideas.**

**Here are some techniques and text features that nonfiction writers use.**

Put X next to the techniques the writer used. Then on the passage put the name of the technique next to the place in the passage where the writer used it.

	allusion		analogy		anecdote
	argument		captions		comparison and
	contrast		data		debate
	description		dialogue		examples
	figurative language		graph		headings
	humor		illustrations		imagery
	narrative		quotations		sarcasm
	satire		sequence of events		table
	timeline		titles and subtitles		tone

**What structure did the writer use?**

- sequence or time order
- compare and contrast
- description
- cause-effect

### THINK MORE

Write about the article you read.

Explain how the writer helped you understand the central idea or major claim through the structure of the text and the techniques the writer used.

Make some notes here. Then write your response.

## NONFICTION WRITERS USE TEXT FEATURES TO COMMUNICATE IDEAS

### Text Features of Nonfiction

- ✓ Diagrams
- ✓ Charts
- ✓ Graphs
- ✓ Maps
- ✓ Glossary
- ✓ Bibliography
- ✓ Author's Biography
- ✓ Index/Table of Contents
- ✓ Label
- ✓ Schedule
- ✓ Guide Words
- ✓ Headings and subheadings
- ✓ Title
- ✓ Caption
- ✓ Boldface

## Nonfiction Text Feature Examples

**Guide/Assess:** *This guide can be an activity or an assessment if completed independently.*

List text features in the left column.

Then in the right column tell how a reader would use each one.

Text Feature	How Readers Use this Feature to Comprehend a Text

**You can turn this into a matching game.**

Cut out the items and mix them up.

Then ask other students to match the feature with the way readers use it.

## Reference Sources Support Nonfiction Learners

NWEA questions include items that ask students how to use these, items that ask which source to use to accomplish a task such as “Which would you use to write a paper about a historic event.” This list includes all levels of NWEA.

Some items such as the Annotated Bibliography would not be relevant to earlier grades.

1. Almanac
2. Annotated Bibliography
3. Dictionary
4. Encyclopedia
5. Field Guide
6. Formal Essay
7. Magazine
8. Manual
9. Newspaper article
10. Primary source
11. Report
12. Science Text

## Reference Sources

**Guide/Assess:** *This guide can be an activity or an assessment if completed independently.*

List Reference Sources in the left column.

Then in the right column tell how a reader would use each one.

Reference Source	How Readers Use this Reference Source

**You can turn this into a matching game.**

Cut out the items and mix them up.

Then ask other students to match the source with the way to use it.

## I Got It—here is my clear summary.

CCSSR1—read carefully to figure out what is important and summarize the reading (CCSSR2)

Topic: \_\_\_\_\_

Important Words:

Word	What it Means

Important Facts:

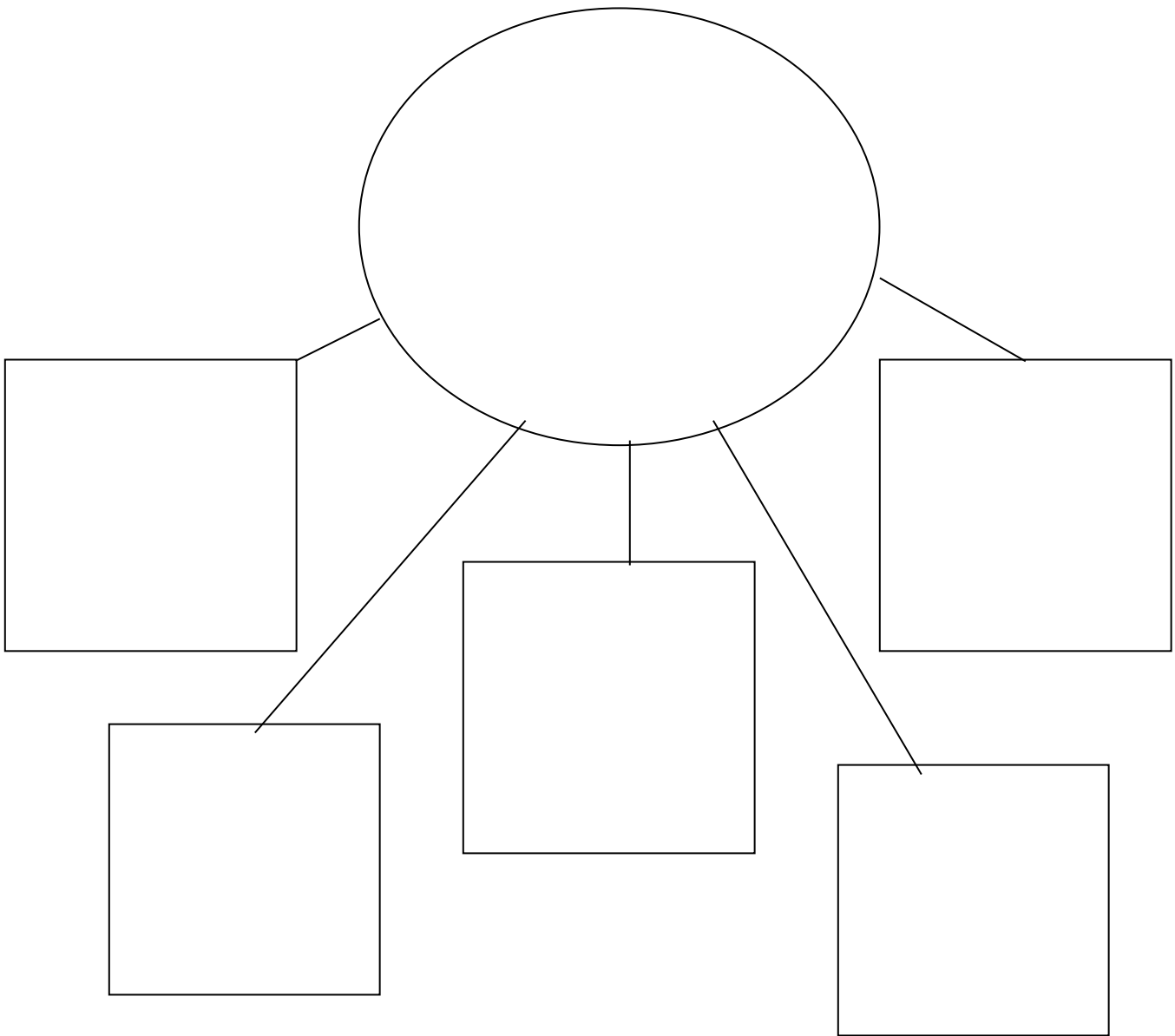

*My Summary:*

*On another page, write and draw to tell and show what's important.*

## Central Idea Analyzer

CCSSR2. Determine central ideas or themes of a text; summarize the key supporting details and ideas.

*Put the central idea in the circle.  
Put supporting ideas in the boxes.*

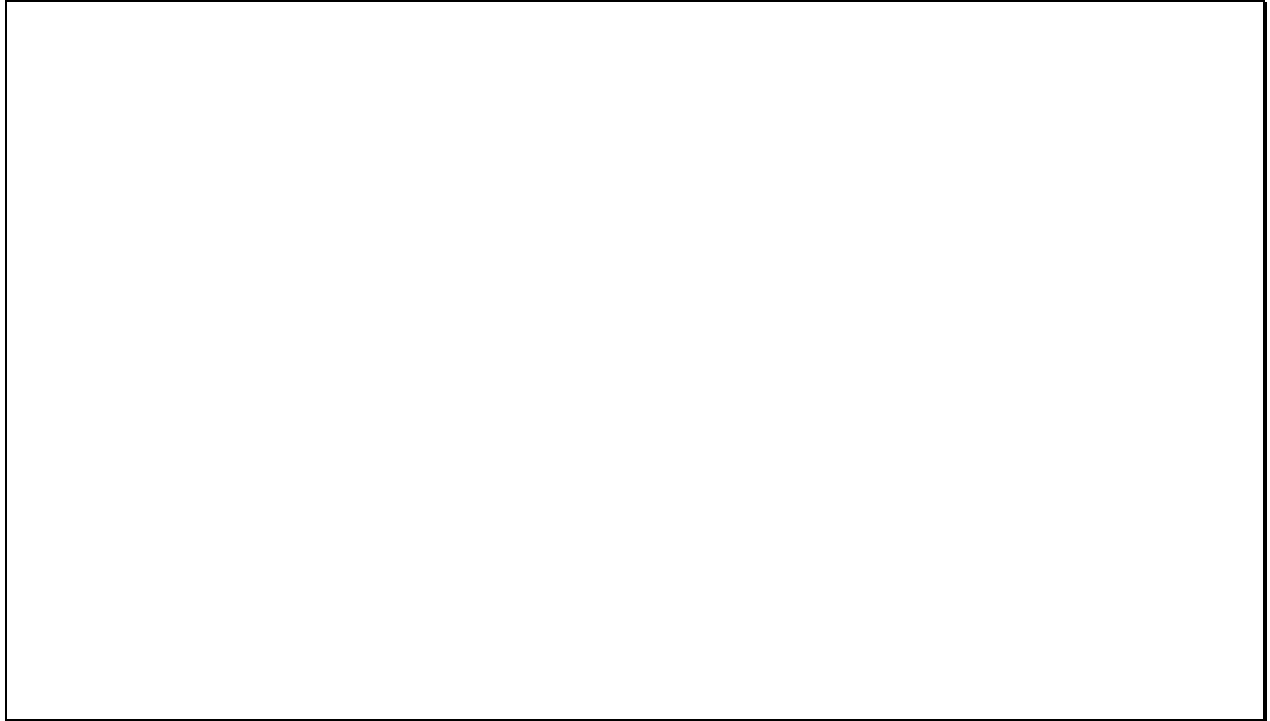


## Strategy: Illustrate a paragraph

CCSSR1. Read carefully/closely. CCSSR 2. Summarize.

Choose one paragraph.

Draw a picture that shows what it says.



Then show your picture to another student.  
Ask that student to find the paragraph you pictured.  
Ask them to write what they think your picture says.



## I can classify facts and opinions.

CCSSR1—read carefully to identify important information and terms and then summarize what you have learned (CCSSR2). Evaluate author’s point of view. (CCSSR6)

*Put statements of facts in column 1 and statements of opinion in column 2.*

*If a text does not include opinions then the opinion column is blank.*

These are facts I found in the text.	These are opinions I found in the text.

ADVANCED TASK: This is what **bias** means:

---

This is an example of bias in this passage:

---

---

If you don't find any example of bias in the passage, put X here.

I didn't find any example of bias in the passage.

**STRATEGY:** Draw pictures that show what each part of a nonfiction passage explains. CCSSR1—read carefully. Here is an example.

**Coming to Chicago**

Before there was a city of Chicago, it was a hard place to live. There were no stores or streets. It was very cold in the winter and hot in the summer. There was a lot of snow in winter, so it was hard to travel. In spring, there was a lot of rain and mud, which made it hard to travel then, too. It must have been hard to live in Chicago then. Winters were snowy. In spring the ground was muddy. There were no stores. People had to build their own homes.

*Show what the place was like. First, underline the words that tell about the place. Then use them to show early Chicago in the rectangle—draw what it was like then.*

**A Change**

More than 200 years ago Jean Baptiste Point DuSable came to this place. He built a cabin on the river. He opened a trading post. A trading post is a place where people bring things they have and trade them for things they need. At first he traded with Native Americans.

Show or tell what happened. First, underline the information that tells what happened. Then draw or write here to tell what happened first, second, third. (CCSSR3—analyze sequence)

First	Then	Last

**Strategy: Write a heading for each part of a nonfiction text.** CCSSR2—Analyze ideas

### **Jean Baptiste Point DuSable: Creating Chicago Possibilities**

*Insert the idea of each section on the line. Then summarize the reading and explain the central idea.*

---

*Jean Baptiste Pointe du Sable came to Chicago more than 220 years ago. Chicago was a very small place then—only about 350 people lived here at that time, which really was a time of great challenge. It must have been hard to live in Chicago then as the environment was challenging—each season brought problems. There were no stores or really any pathways you could use to move about easily, and it was difficult to get everything you needed to survive. He had come from a distant land, Haiti, and it’s not certain how he learned about this place of possibilities and challenges.*

---

*DuSable chose to come here because it was a place where he could build a trading post and transform the area—there was no other trading post here at that time. He thought it was a place of great possibility, that it would grow and hold more and more people who would need a trading post. His trading post would become the catalyst for Chicago’s progress, the starting point that brought about the beginning of the city in which millions live today.*

*DuSable built his trading post himself using his own labor and abilities, using local resources to construct it from wood. First he chose a strategic location, a place where the river and lake converged. That enabled people to reach the post more easily by water. Probably it was easier to get there by water than by land, since it was so muddy in spring and in winter there were deep snows. But in winter the river would be frozen, making it impassable. So it still was a struggle, in every season.*

---

*DuSable traded with the Potawatomi, Native Americans who had lived in this area for many years before the first settlements by pioneers from Europe and other places. He traded tools to them for furs, which they produced by hunting animals, using spears, arrows, and clubs until they were able to get guns and other metal tools. With the trading post came new technologies that would make it easier to hunt and live in the area.*

*DuSable traded with settlers, too, who were moving to this area. They brought hopes but also many needs because they moved here without all the tools and supplies they would need to build homes and survive in the challenging environment. It’s not clear how people learned about Chicago as a place of possibility, but soon more and more pioneers moved to this location to settle. DuSable’s vision was being realized— Chicago was becoming a destination that would keep growing.*

---

*DuSable probably knew Chicago was going to grow—he saw more settlers moving here every year, and business was an important place to all of them. DuSable sold the trading post and moved away in 1800, leaving a legacy. The trading post had been a kind of anchor of the growing community. In 1968 Chicago declared DuSable the “Father of Chicago”. His legacy continues today.*

What is the central idea of this passage? Start by looking at the headings you wrote. Then figure out the central idea.

## Integrate Grammar, Syntax, Punctuation

The lists on the next two pages include NWEA requirements.

Schedule a Grammar, Syntax, Punctuation rule to apply each week in what students read and what they write. For example, schedule “prefix week” or “subject-verb agreement” week or “Quotation Mark week”.

Use the lists on the next pages to set priorities.

Week	Grammar/Syntax Rule	Punctuation Rule

## Make Your Own Grammar and Punctuation Guide

**Guide/Assess:** *This guide can be an activity or an assessment if completed independently.*

Punctuation or Grammar Feature	Your Example—Explain why to use it correctly and give an example.

### Make it more challenging:

*Choose a difficult rule.*

*Write an example that is **INCORRECT**.*

*Then give your example to another student to correct.*

# Make It Clear

Punctuation helps make meaning clear

Complete this punctuation toolkit to show what you know!

**Commas separate words in a series.**

Our example: I saw a cat, a bat, a hat. Then I sat.

Your example: \_\_\_\_\_

\_\_\_\_\_

**Commas separate independent clauses joined by conjunctions.**

Our example:

The dinosaur ate one bush, and then it ate a tree. Dear me!

Your example: \_\_\_\_\_

\_\_\_\_\_

**Commas set off introductory phrases and clauses.**

Our example:

In fact, punctuation is one of the most helpful ways to make meaning clear in a poem.

Your example: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Apostrophes can help people use fewer letters.**

Here's our example: It's important to use apostrophes correctly.

What's your example? \_\_\_\_\_

\_\_\_\_\_

**Some apostrophes show possession.**

Our example: Jerome's poem was full of rhyming words.

\_\_\_\_\_

\_\_\_\_\_

**Exclamation points show importance.**

Our example: Without punctuation, my poem doesn't make sense!

Your example: \_\_\_\_\_

\_\_\_\_\_

**Periods help people abbreviate.**

E.g.: Etc., III.

Your examples: \_\_\_\_\_

\_\_\_\_\_

**Periods show what's over.**

Our example: This is the end of the punctuation tool kit.

Your example: \_\_\_\_\_

\_\_\_\_\_

# Meet the NWEA Math Challenge

## Your Plan to Meet the NWEA Challenge

What will you do? Check and add activities you'll do.

### Know What: Math Fact Activities

- matching game
- vocabulary glossary
- times table practice
- flash cards

\_\_\_\_\_

\_\_\_\_\_

### Know How: Math Skill Activities

- use online math skill games
- use online math test prep
- answer question, pair, compare, repair
- make up word problems
- make up multiple choice questions
- play math games

\_\_\_\_\_

\_\_\_\_\_

### Test Success Activities

- rank answers to a multiple-choice question
- change a test item—substitute different numbers, then solve it
- make up my own test prep guide
- make up multiple choice questions
- take online math test

\_\_\_\_\_

\_\_\_\_\_



### SCHEDULE MATH PROGRESS

In addition to the new math that students learn, it's **important to** revisit math they mastered in the past but have not used recently. Research confirms that if the math curriculum includes “frequent cumulative review” that enables students to retain greater math competence. Among sources supporting this “mix” is the report “Assisting Students Struggling with Mathematics” of the What Works Clearinghouse, IES Practice Guide, US Department of Education.

Week	New Math	Content to Revisit/Exercise

## Math Vocabulary = Content Students Need to Know to Use Skills

Strategy: Students can make their own glossary—and turn it into a matching game—word and example—including pictures.

### By Third Grade

12 inches = 1 foot 12 months = 1 year 2- dimensional 3 feet = 1 yard 365 days = 1 year 366 days = 1 leap year 3- dimensional 52 weeks = 1 year 7 days = 1 week a.m. abbreviation s for days and months about above addends addition (+) angle area average bar graph below between capacity cardinal numbers centimeter (cm) cents (50¢ or \$0.50) chance change chart circle circle graph cone congruent coordinates corner cube cup	cylinder decimal diameter difference digit distance divisible division (÷, /) dollars (\$) dozen drawn to scale edge/edges equal equation estimate/estimat ion even/even number face/faces factor farthest figure flips folded foot/feet (ft) fraction gallon gram (g) graph greater greatest grid group height hexagon histogram horizontal hour	hundred impossible inch (in.) is equal to (=) kilogram (kg) is greater than (>) is less than (<) is not equal to (≠) kilometer (km) label least least likely length less than likely line line graph line of symmetry line segment long mass measure measurement meter (m) metric mile (mi) milligram (mg) milliliter (mL) millimeter (mm) minus month more than most most likely multiply/multiplicatio n (x) nickel	non-standard unit number cube number line number pair number pattern number sentence octagon odd/odd number operation order ordered pair (x, y) ordinal numbers ounce (oz) p.m. pair parallel parallelogra m pattern pentagon perimeter pictograph pie graph pint place value plane figure plus point polygon possible pound (lb, #) prediction prism probability probable probably problem solving	product pyramid quadrilatera l quart quarter quotient radius/radii ray reasonable rectangle rectangular prism rectangular pyramid represents results rhombus right angle round down round up same scale scale of numbers second segment set shape side/sides similar single size solid figure solve spent sphere spinner square square centimeters square pyramid	standard unit steps subtraction (–) sum survey symbol symmetry/symmetrica l table tally tally chart temperature thousand time ton total trapezoid triangle triangular prism triangular pyramid true turns twice unit unknown unlikely value variable Venn diagram vertex/vertices vertical volume week weight wide width yard
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

(Source: ISBE.net)

**By Fifth Grade**

acute angle	least common multiple
angle	liter (L)
approximately	lowest terms
arc	mean (arithmetic average)
base	median
bisect	midpoint
characteristic	miles per hour (mph)
chord	mode
circumference	multiple
column	multiply/multiplication (* or •)
combination	nonagon
composite number	<i>n</i> th term
congruent	obtuse angle
coordinate graph	order of operations
correspond	per
cubic units	percent (%)
data	perpendicular
decimeter	pint (pt)
degrees (°)	polygons
degrees Celsius (°C)	portion
degrees Fahrenheit (°F)	prime number
diagonals	proportion
diagram	quart (qt)
dimensions	quotient
dividend	random
divisor	range
elapsed time	ratio (":" or "to")
equilateral triangle	reflections
exactly	regular polygon
expression	right angle symbol
gallon (gal)	right triangle
greatest common factor	rotations
heptagon	row
intersect	scale drawing
intersecting lines	scalene triangle
irregular polygon	sequence
is approximately equal to	slides
is congruent to ( $\cong$ )	square units (2)
is parallel to ( $\parallel$ )	stem-and-leaf plot
is perpendicular to ( $\perp$ )	time zone
is similar to ( $\sim$ )	ton (t)
isosceles triangle	triangle ( $\Delta$ )
	value of

**By Eighth Grade**

adjacent	measure of angle
alternate exterior angles	minimum
alternate interior angles	odds
altitude	permutation
approximate	principle
ascend/ascending order	proportionally
axes	Pythagorean Theorem
commission	quadrants
complementary	radical
compound inequality	random
consecutive	rate
convert	real number
corresponding angles	satisfy
decagon	scattergram
descend/descending order	semi-circle
discount	sequence
distinct	simple interest
divisibility	skew
domain	square root
down payment	supplementary
earns	surface area
factorial	transversal
foot (ft or ')	vertical angles
function	x-axis
hypotenuse	y-axis
inch (in. or ")	
independent	
inequality	
is greater than or equal to ( $\geq$ )	
is less than or equal to ( $\leq$ )	
maximum	

(Source: ISBE.net)

## Make Math Yours: Learn Actively

### Pair, Compare, Repair

1. Two students solve the same problem independently.
2. Then they pair and compare their responses.
3. Then they repair—change any part of the answer that needs improvement.

### Rate the Answers

1. Take one multiple-choice question.
2. Choose the **best** answer.
3. Then label the **worst** answer.
4. Then, yes, pair, compare, repair.

### Make up a Word Problem

1. Think of a situation that involves math. It could be about money, measurement, any other part of math.
2. Make up a problem that requires someone to use skills to solve it.
3. Give your problem to another student.
4. Check that student's answer.
5. If it's incorrect, explain how to fix it.

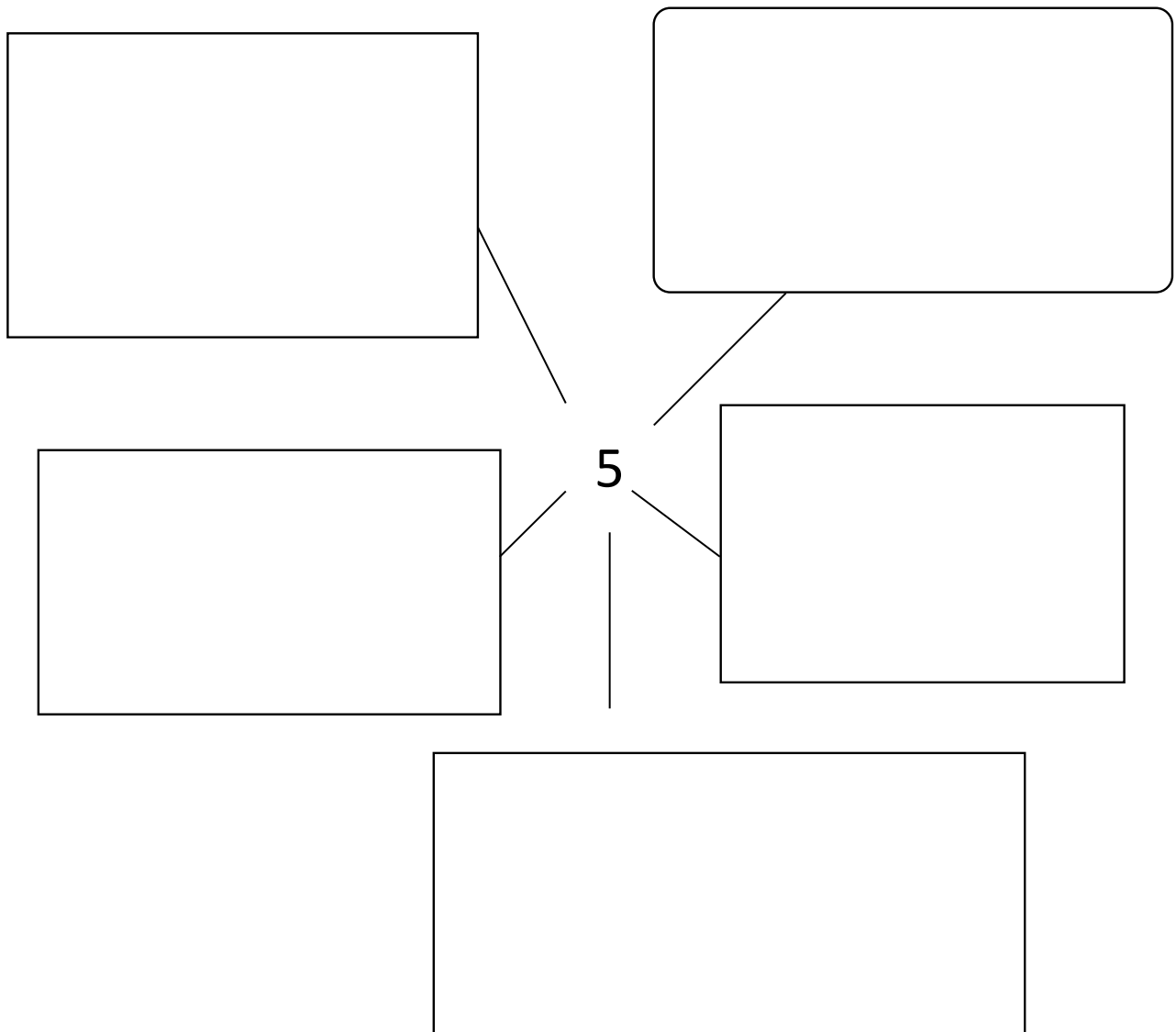
### Make up a Multiple-Choice Question

1. Make it a word problem.
2. Include four answers.
3. Give your problem to another student.
4. Check that student's answer.
5. If it's incorrect, explain how to fix it.

## Learn/Review Math Facts by USING them.

CCSS Math Practice Standard 2. Reason abstractly and quantitatively.

Task: Use the math you know to show five different ways to make equations that result in 5. It could be fraction equations or multi-step addition or...



*You can do this same activity with any number!*

### MATH VOCABULARY AND FACTS MATCHING GAME

Put the words, letters, or numbers you want to learn into each rectangle. Then cut them out and use them as flash-cards or to play matching games or card games.


**EXAMPLE: TIME TABLE FACTS**

Put facts like these on pieces of paper. Cut them out and match them.

$2 \times 4$

8

$3 \times 4$

12

$4 \times 4$

16

$5 \times 4$

20

## YOU CAN MAKE YOUR OWN MATH PROBLEM GAME!

Cut paper into rectangles.

Put numbers and operation signs and words on the rectangles.

Then use them to make up problems. *This is just an example*—make YOUR OWN!

+

-

X

=

10

5

15

50

%



## **KNOW HOW: ANALYZE the problem first, THEN solve it.**

**The most important skill to respond to a test question is reading the question carefully.**

Before you answer the question, ask these questions:

1. What is the question asking me?
2. What skills will I need to figure out the answer?
3. What information from the problem will I use?

## Choose a Math Strategy

Here are some strategies to solve a math problem.

**They all start with read the problem carefully to figure out what it asks.**

Read it TWICE so you are sure what the problem is.

- ✓ Identify information the problem includes that you need to use to solve it.
- ✓ Notice any numbers written as words—be sure you include them in your problem solution.
- ✓ What kinds of words, numbers or shapes will answer the question—for example, will the answer be a label for an angle, a percentage, a decimal?
- ✓ Estimate what the answer will be.

Then use a strategy you know to figure out the answer.

**Here are some examples.**

**Choose the strategies you will use.**

**Add more strategies!**

- List information you need to use.
- Use a model.
- Use a rule you know.
- Make a diagram.
- See if it will take just one step to solve it or more steps.
- Guess, check, then correct if I need to.
- Look for a pattern.
- Draw a picture so I see what the problem includes.
- Figure out what information I need.
- Underline the information I need and cross out the things I don't need.
- List the steps to take.
- Make a chart.
- Work "backwards".
- Think of two different ways to solve it, then choose the one you think will work better.
- Write it as a number sentence.
  
- \_\_\_\_\_
  
- \_\_\_\_\_

## SOLVE A PROBLEM STRATEGICALLY

(CCSS Math Practice Standard 1)

**The Problem**—What will I figure out?



***My Strategy***

***MY SOLUTION***

***My Answer:***

## I can solve a word problem strategically!

*Math Practice Standard 1: Make sense of problems and persevere in solving them.*

What is the question asking me to figure out? 	
How will I solve it? 	
What information do I need to solve it?	

### Next: Solve it!

You may complete it by yourself or...


pair and share—work together to solve it

or

pair to compare—solve it yourself then compare your work with another student's

## Make Your Own Multiple Choice Question

**Question Maker:** Write your question here.



Write the correct answer and three other possible answers here:

- a. \_\_\_\_\_ c. \_\_\_\_\_  
b. \_\_\_\_\_ d. \_\_\_\_\_
- 

### **Question Taker:**

*Circle the best answer. Then tell why it's best.*

\_\_\_\_\_ is the best answer because

---

*Cross out the worst answer. Then tell why it's the worst.*

\_\_\_\_\_ is the worst answer because

---



## Choose Activities to Make More Math Progress

<p><b>Play math games!</b> Monopoly or any game that includes math.</p>	<p><b>Make up an online Store</b> Make up the prices. Look at the competing online stores to set your prices. Make “specials”—coupons or sales.</p>	<p><b>Make a math multiple choice question.</b> Write the question as a situation. Then give a few possible answers.</p>	<p><b>Make up a math game.</b> To win the game, you need to know math facts. You can play the game as a card game or as a board game. If it’s a board game, then the players would get to move ahead when they know a math fact.</p>
<p><b>Write a Number Diary.</b> What’s That? You’re a Number (pick any number). Tell what happens to you during a day.</p>	<p><b>Measure Your Home.</b> <i>Measure windows, doorways, floor. First, estimate size. Then check your estimate. Figure out the area of different rooms.</i></p>	<p><b>Tell what you would buy if you had \$100.</b> Figure out what everything would cost and how much you would have left after you bought things.</p>	<p><b>Write a page in a math textbook.</b> Explain the math. Then give an example. Then ask a question.</p>
<p><b>Watch a sports game. Keep track of the scores for each player.</b> Then make up math questions based on the scores.</p>	<p><b>Make a fraction book.</b> Write about what a fraction is, how people use them, and how people can add and subtract them.</p>	<p><b>Write about your day and how numbers help you.</b> For example, numbers tell what time it is.</p>	<p><b>Make a sports scores graph.</b> Then explain what your graph tells about the way the teams are playing this season.</p>
<p><b>Make a Math Number Connector.</b> What’s that? You take one number and put it in the center of a page. Then write the number combinations that would make that number. For example, what are five ways to make a five?</p>	<p><b>Design a math museum.</b> What will your exhibits include?</p>	<p><b>Paper Airplane Math</b> Make a paper airplane. See how far it flies. Then change one measurement at a time; its weight, length, or width. See how those changes affect how far it goes.</p>	<p><b>Design a birdhouse.</b> Use your measurement and geometry skills. If you can, build it!</p>

## Online Resources to Strengthen Math Skills

### NWEA Online Resources

Sample Test Items from NWEA

[http://warmup.nwea.org/warmup\\_start\\_educators\\_map.html](http://warmup.nwea.org/warmup_start_educators_map.html)

Study Recommendations from Khan Academy

<https://www.khanacademy.org/mappers?gclid=CNvDsdL249ICFdi6wAodY2lBrw>

Rochester School District Links to Khan Academy

<http://www.rochester.k12.mn.us/common/pages/DisplayFile.aspx?itemId=5588106>

Sample Questions from an Online Source for Math and Reading all Grades

<http://www.prepdog.org/>

Minnesota School District Resource for grades 3-5

<http://www.ahschools.us/Page/17389>

### Math Practice Resources and Games

Early Childhood Games <http://www.ictgames.com/resources.html>

Primary Games from Public Television

<http://pbskids.org/games/math/> Math Games for Grades 3-5

<http://pbskids.org/cyberchase/math-games/>

Great games to practice math facts. <http://www.maths-games.org>

Advanced Challenges from the Museum of Math <http://momath.org/activities/>



## General Math Skills Activity Sites

### Math Hunt

With the help of the character “Number Cruncher” scour the web to find social studies and science information to help crack math problems.

<http://teacher.scholastic.com/mathhunt/>

### Math Maven’s Mysteries

Use math to help crack open mystery cases <http://teacher.scholastic.com/maven/>

## Counting/Number Activity Sites

### Bobbie Bear

Use counting strategies to make as many outfits for Bobbie Bear as you can, using different colored shirts and pants.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=3>

### Chairs

Explore the number of chairs needed when tables are arranged in a restaurant.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=144>

### Electronic Abacus

Explore an abacus model for representing numbers and performing addition.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=8>

## Operations Activity Sites

### Primary Krypto

Use five number cards and arithmetic operations to create the "target" number in this fun math game. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=173>

### Product Game

Exercise your skill with factors and multiples.  
<http://illuminations.nctm.org/ActivityDetail.aspx?ID=29>

### Times Tables

Practice multiplying single-digit numbers with this interactive multiplication table.  
<http://illuminations.nctm.org/ActivityDetail.aspx?ID=155>

### Around the World in 80 Seconds

Help Maggie fly around the world. Pick addition, subtraction, multiplication, division or a mix of all four. Each question answered correctly gets Maggie to her next stop.  
<http://teacher.scholastic.com/activities/adventure/math2.htm>

### Deep Sea Duel

Play a strategy game that requires you to select cards with a specified **sum** before your opponent. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=207>

### Determine the Missing Operation Study Jams

Sometimes to solve a word problem or story problem, you need to figure out which symbol to use. Follow this step-by-step strategy  
[http://teacher.scholastic.com/activities/studyjams/math\\_operations/](http://teacher.scholastic.com/activities/studyjams/math_operations/)

### Flashcards for Basic Arithmetic

Flashcards for all operations, organized by level.  
<http://free-ed.net/sweethaven/Math/arithmetric/arithDrill02.asp>

### Operations with Signed Numbers

Use these "flash cards" to work with an endless list of signed-number problems-- addition, subtraction, multiplication, and division of positive and negative numbers.  
[http://www.free-ed.net/sweethaven/Math/arithmetric/SignedValues01\\_EE.asp](http://www.free-ed.net/sweethaven/Math/arithmetric/SignedValues01_EE.asp)

### Order of Operations with Integers

This is a set of endless drills that build confidence with solving integer operations that involve combinations of addition, subtraction, multiplication, and division. There are four levels of difficulty. [http://www.waybuilder.net/sweethaven/Math/pre-algebra/PreAlg01/ee/IntegerPrec01\\_EE.asp](http://www.waybuilder.net/sweethaven/Math/pre-algebra/PreAlg01/ee/IntegerPrec01_EE.asp)

### Place Value

Rewrite numbers separating each period of place values with a comma <http://www.waybuilder.net/sweethaven/Math/pre-algebra/drills/wholeNums01.asp>

## GEOMETRY

### Proof Without Words: Pythagorean Theorem

Watch a dynamic, geometric "proof without words" of the Pythagorean Theorem.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=30>

### Scale Factor

A common misconception is that when the dimensions of an object are doubled, the area is doubled, too. But this is not true! Use this applet to investigate how changes in the scale factor influence the ratio of perimeters and the ratio of areas between figures. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=176>

### Shape Cutter

Draw and cut shapes, then use slides, turns, and flips to move the cut pieces around.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=72>

### Shape Sorter

Sort shapes according to their properties using Venn diagrams.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=34>

### Shape Tool

Draw, color, paste, slice, rotate, reflect, expand, and contract various shapes.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=35>

### Tessellation Creator

Create patterns to cover the screen using regular polygons.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=202>

### Turtle Pond

Estimate length and angle measure while guiding a turtle to a pond.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=83>

### Interactive Geometry Dictionary: Areas in Geometry

Understand and investigate the area of the rectangle, parallelogram and triangle.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=21>

### Patch Tool

Design a pattern using geometric shapes.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=27>

### Perimeter, Area, and Volume of Common Geometric Figures

[http://www.waybuilder.net/sweethaven/Math/pre-algebra/PreAlg01/ee/geometry/PreGeom01\\_EE.asp](http://www.waybuilder.net/sweethaven/Math/pre-algebra/PreAlg01/ee/geometry/PreGeom01_EE.asp)

## GEOMETRY ONLINE RESOURCES (continued)

### Angle Sums

Explore the sum of the interior angle measures for various polygons.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=9>

### Area Tool

Investigate how changes in the base and height of trapezoids, parallelograms, and triangles affect their area.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=108>

### Circle Tool

Compare the circumference and area of a circle to its radius and diameter.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=116>

### Cube Nets

Examine various two-dimensional figures to determine which ones can be folded into a cube. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=84>

### Computing Pi

Compare two methods for computing pi.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=161>

### Cubes

Determine the volume of a box by filling it with cubes, rows of cubes, or layers of cubes. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=6>

### Fractal Tool

Explore iteration and patterns in shapes and numbers with fractals.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=17>

### Geometric Solids

Manipulate various geometric solids. Color the solid to investigate properties such as the number of faces, edges, and vertices.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=70>

## Fractions, Decimals, and Percentages Activity Sites

### Concentration

Play a matching game with different representations of equivalent items — match quantities to their numerals, shapes to their names, or fractions to decimals and percents. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=73>

### Equivalent Fractions

Create equivalent fractions by shading squares and circles.  
<http://illuminations.nctm.org/ActivityDetail.aspx?ID=80>

### Fraction Game

Explore relationships among fractions while playing this interactive game.  
<http://illuminations.nctm.org/ActivityDetail.aspx?ID=18>

### Fractions, Fractions, Fractions

This is version 2.0 of the popular fractions "flash cards." Fractions are learned by looking at a lot of examples and they are mastered by doing a lot of problems.  
<http://edgeroamer.com/sweethaven/math/ee/fracs03.asp>

### Fractions Study Jams

Watch a video and take a quiz about understanding fractions  
<http://teacher.scholastic.com/activities/studyjams/fractions/>

### Free Ride

Use this applet to explore fractions using the context of a bicycle and gear ratios.  
<http://illuminations.nctm.org/ActivityDetail.aspx?ID=178>

### Mastering Decimal Fractions

This is a complete set of endless drills with decimal arithmetic. You can select among 24 different activities that are arranged according to type of operation and level of difficulty. [http://www.waybuilder.net/sweethaven/Math/pre-algebra/Decimals01\\_EE.asp](http://www.waybuilder.net/sweethaven/Math/pre-algebra/Decimals01_EE.asp)

### Rounding Decimal Fractions

Activities for practice of rounding decimal fractions  
[http://www.sweethaven.com/sweethaven/Math/pre-algebra/PreAlg01/ee/DecRound01\\_EE.asp](http://www.sweethaven.com/sweethaven/Math/pre-algebra/PreAlg01/ee/DecRound01_EE.asp)

### Working with Percents

Practice percent problems, converting between decimals and percents, and determining parts and rates  
[http://www.waybuilder.net/sweethaven/Math/pre-algebra/PreAlg01/ee/Percent01\\_EE.asp](http://www.waybuilder.net/sweethaven/Math/pre-algebra/PreAlg01/ee/Percent01_EE.asp)

## Probability Activity Sites

### Adjustable Spinner

Create a spinner and examine the experimental and theoretical outcomes for a specified number of spins.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=79>

### Fire

Simulate the spread of a wildfire using a probability applet.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=143>

### Random Drawing Tool—Individual Trials

Explore the relationship between theoretical and experimental probabilities.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=67>

## Algebra Activity Sites

### Algebraic Transformations

Explore commutativity and associativity within a geometric situation.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=193>

### Pan Balance—Expressions

Investigate the concept of equivalence by "weighing" numeric and algebraic expressions.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=108>

### Roots and Powers

Some problems require the aid of a calculator, while others encourage the learner to work the problem "on paper."

[http://www.free-ed.net/sweethaven/Math/pre-algebra/RootPow01\\_EE.asp](http://www.free-ed.net/sweethaven/Math/pre-algebra/RootPow01_EE.asp)

### Solving Linear Equations in One Variable

A list of activities for solving linear equations in one variable for independent learners

[http://www.waybuilder.net/sweethaven/Math/algebra/linearEq/LinEqOne01\\_EE.asp](http://www.waybuilder.net/sweethaven/Math/algebra/linearEq/LinEqOne01_EE.asp)

## Graphing Activity Sites

### Bar Grapher

Create a customized bar graph with your own data, or display a bar graph from an included set of data.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=63>

### Box Plotter

Create a customized box plot with your own data, or display a box plot of an included set of data. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=77>

### Circle Grapher

Create a customized circle graph with your own data, or display a circle graph from an included set of data.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=60>

### Histogram Tool

Create a customized histogram with your own data, or display a histogram from an included set of data.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=78>

### Introduction to Graphing

Here is a selection of graphic activities, from plotting points to plotting linear equations. [http://www.free-ed.net/sweethaven/Math/GraphOps/GraphPlotters/graphing02\\_EE.asp](http://www.free-ed.net/sweethaven/Math/GraphOps/GraphPlotters/graphing02_EE.asp)

### Isometric Drawing Tool

Create dynamic drawings on isometric dot paper. Draw figures using edges, faces, or cubes, and then shift, rotate, color, decompose, or view them in 2-D or 3-D.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=125>

### Line of Best Fit

Use this applet to plot a set of data and determine a line of best fit.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=146>

### Linear Regression

Investigate a regression line and determine the effects of adding points to a scatterplot. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=82>

### Mean and Median

Investigate the mean, median, and box-and-whisker plot for sets of data that you create. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=160>

### State Data Map

Use color-coding to represent state information, such as population, area, and gasoline usage. <http://illuminations.nctm.org/ActivityDetail.aspx?ID=151>