



The Flexibility Formula

Individual Reflection Workbook

August 2026



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Module 0: Welcome & Overview

Part 1: Before Watching the Module

"In your current mathematics block, how often do students ..."	Never	Sometimes	Often
Solve mathematical problems accurately?			
Solve mathematical problems efficiently?			
Solve mathematical problems flexibly?			

Part 2: Engagement in the Module

A. WATCH EACH VIDEO IN THE MODULE AND RECORD A TAKEAWAY IN THE TABLE BELOW.

Complete?	Video	Takeaway
	Welcome	
	Why Focus on Flexibility?	
	Understanding & Observing	
	Connecting & Experiencing	

B. CONCEPT SNAPSHOT

- What idea challenged your thinking and why?
- What is something that you used to think but now you wonder?

C. OBSERVATION CONNECTION

Choose a phase of the Cognitively Guided Instruction (CGI) Progression. What might you observe a student is in this phase doing?

D. CONNECTION SPARK

- How do the concepts from the videos connect with the learning experience at the beginning of the module?
- Read [Developing Computational Fluency with Whole Numbers in the Elementary Grades by Susan J. Russell](#) and pages 1-13 of the [Iowa Academic Standards for Mathematics](#). Complete the Venn diagram below comparing the videos from this module, Russell's article and the information from the Iowa Academic Standards for Mathematics.

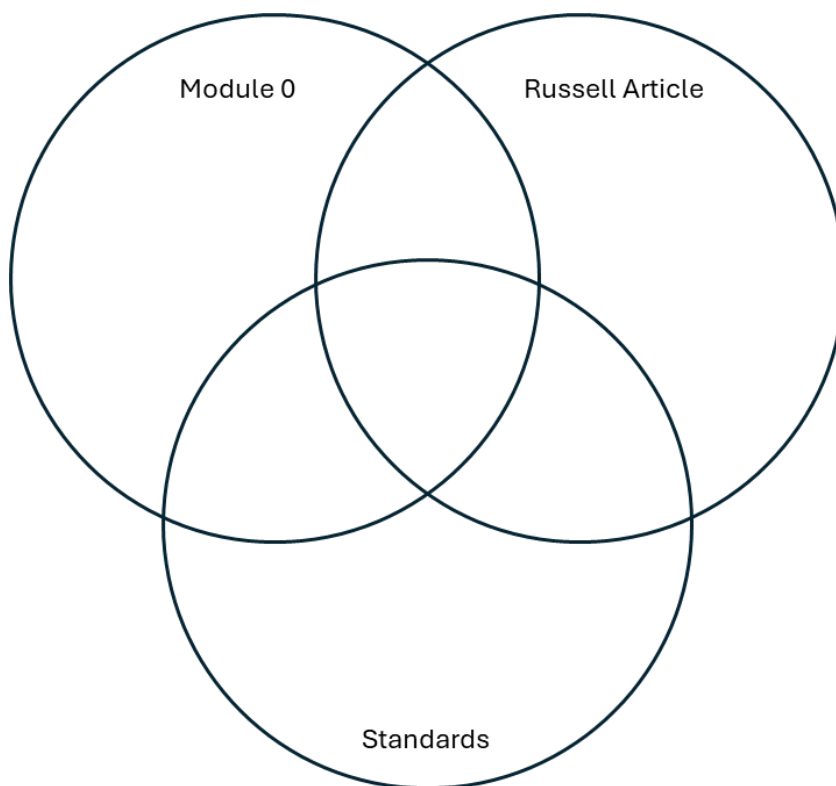


Figure 1: Venn Diagram

E. APPLICATION

The Iowa Department of Education has defined fluency as “the ability to apply procedures efficiently, flexibly, and accurately, including fact, computational, and procedural fluency” (Iowa Department of Education, 2024). Standards for kindergarten through grade 6 include end-of-grade-level fluency expectations.

- a. Find the fluency standard(s) for your grade level in the Iowa Academic Standards for Mathematics and record below.

- b. Unpack the fluency standard by listing what students are expected to be able to do by the end of your grade level.

- c. How do you anticipate The Flexibility Formula modules will support your work in helping students meet your grade level’s fluency standard(s)?

Module 1: Understanding
Part 1: Before Watching the Module
Grades PK-2

In your current mathematics block, how often do students...	Never	Sometimes	Often
Use derived facts (i.e., use 2+2 to determine 2+3)?			
Use the standards for mathematical practice?			
Instantly recognize amounts without counting them?			
Determine the value of a collection of base-ten blocks not arranged in order by the teacher (i.e., hundreds, tens, ones)?			
Compose and decompose numbers in different ways?			

Grades 3-6

In your current mathematics block, how often do students...	Never	Sometimes	Often
Use derived facts (i.e., use 3×5 to answer 3×6)?			
Use the standards for mathematical practice?			
Recognize structured whole-number quantities without counting them by ones?			
Recognize fractional quantities from visual representations without counting individual parts?			
Compose and decompose numbers (including fractions) in different ways?			

Part 2: Engagement in the Module

A. WATCH EACH VIDEO IN THE MODULE AND RECORD A TAKEAWAY IN THE TABLE BELOW.

Complete?	Video	Takeaway
	Snapshot of Understanding	
	Understanding Versus Doing Math	
	Subitizing	
	Verbal Counting	
	Object Counting & Cardinality	
	Spatial Relationships	
	One/Two More & Less	
	Benchmark Numbers	

Complete?	Video	Takeaway
	Part-Part-Whole	
	Final Thoughts on Understanding	

B. CONCEPT SNAPSHOT

- What idea challenged your thinking and why?
- What is something you used to think but now you wonder?

C. OBSERVATION CONNECTION

Early Numeracy Concept or Relationship	When observing a student who has conceptual understanding, I might notice they...
Subitizing	
Verbal Counting	
Object Counting	
Cardinality	
Spatial Relationships	
One/Two More & Less	
Benchmark Numbers	
Part-Part-Whole	

D. CONNECTION SPARK

- What other concepts does verbal counting link to and how?
- How does counting link to cardinality?
- How do spatial relationships connect to one/two more & less and benchmarks?
- Explain how multiplication is more than repeated addition.
- Which number relationships (benchmarks, one/two more & less, part-part-whole, spatial relationships) do you connect to and why?

E. APPLICATION: CLASSROOM TRY-IT

After completing the module, commit to **one** small move.

a. Choose a Try-It Action

- Observation Only
- Add one routine
- Change one question
- Modify one task

b. After you try it, quickly record:

- What did students say/do?

- What surprised you?

- What might you try next?

- What evidence, if any, suggested this instructional move supported students' mathematical understanding or fluency?

Module 2: Observing

Part 1: Before Watching the Module

In your current mathematics block, how often do <i>YOU</i> ...	Never	Sometimes	Often
Assess to understand student thinking (assessment <i>for</i> learning) vs. assess to assign a value metric to student work (assessment <i>of</i> learning)?			
Ask students to explain or justify their reasoning after arriving at an answer?			
Discuss mistakes?			

Part 2: Engagement in the Module

A. WATCH EACH VIDEO IN THE MODULE AND RECORD A TAKEAWAY IN THE TABLE BELOW.

Complete?	Video	Takeaway
	Snapshot of Observing	
	Observing Early Numeracy	
	Observing the 4 Number Relationships	
	Observing Kids	
	Final Thoughts on Observing	

B. CONCEPT SNAPSHOT

- What idea challenged your thinking and why?

- What is something you used to think but now you wonder?

- What is one assessment/observation tool from the video you would like to try with students and why?

C. OBSERVATION CONNECTION

Choose two of the eight number sense concepts below and complete the corresponding rows using the prompts in the table header.

Number Sense Concept	What might you notice a student can do and cannot yet do related to this number sense concept?
Subitizing	
Verbal Counting	
Object Counting	
Cardinality	
Spatial Relationships	
One/two more & less	
Benchmarks	
Part-Part-Whole	

D. CONNECTION SPARK – HOW DOES OBSERVING LINK TO ASSESSING?

E. APPLICATION: CLASSROOM TRY-IT

After completing the module, commit to **one** small move.

- Choose a Try-It Action
 - Observation Only
 - Add one routine

- Change one question
- Modify one task

b. After you try it, quickly record:

- What did students say/do?

- What surprised you?

- What might you try next?

- What evidence, if any, suggested this instructional move supported students' mathematical understanding or fluency?

Module 3: Connecting

Part 1: Before Watching the Module

Grades PK-2

In your current mathematics block, how often do students...	Never	Sometimes	Often
Make connections between concepts (e.g., connect subitizing to comparing quantities, connect addition and subtraction to measurement?)			
Use the number sense concepts to solve problems (e.g., use benchmarks or part-part-whole to add or subtract)?			
Understand the benefits of using more efficient strategies?			
Practice numeracy at home?			

Grades 3-6

In your current mathematics block, how often do students...	Never	Sometimes	Often
Make connections between concepts (e.g., connect subitizing to comparing whole numbers and fractions, connect verbal counting to counting by fractional units (1 one-fourth, 2 one-fourths, 3 one-fourths)?			
Use the number sense concepts to help them solve problems (e.g., use benchmarks or part-part-whole to understand fractions)?			
Understand the benefits of using more efficient strategies?			
Practice numeracy at home?			

Part 2: Engagement in the Module

A. WATCH EACH VIDEO IN THE MODULE AND RECORD A TAKEAWAY IN THE TABLE BELOW.

Complete?	Video	Takeaway
	Snapshot of Connecting	
	Connecting the Number Concepts	
	Connecting to Other Math Concepts	

Complete?	Video	Takeaway
	Connecting to Home	
	Final Thoughts on Connecting	

B. CONCEPT SNAPSHOT

- What idea challenged your thinking and why?
- What is something you used to think but now you wonder?
- What are mathematical concepts at your grade level that you want to be sure to connect?
- While Christina mentioned Achieve the Core's Focus by Grade Level documents, the [Iowa Academic Standards for Mathematics](#) also identify major, supporting, and additional clusters. How will you use this information to help focus your instruction?

C. CONNECTION SPARK

- How do learning progressions support connections among skills?

- How does the identification of major, supporting and additional clusters in the Iowa Academic Standards for Mathematics link to your textbook?

D. APPLICATION: CLASSROOM TRY-IT

After completing the module, commit to **one** small move.

- a. Choose a Try-It Action
 - Incorporate a number sense concept when teaching a mathematics standard (connecting part 3 video and Scope and Sequence document K-2 or Scope and Sequence Document 3-6)
 - Explore the Iowa Academic Standards for Mathematics document for Focus by identifying major, supporting and additional clusters or explore Achieve the Core's Coherence Map. Take notes to bring back to the team to support discussion on instructional considerations.
 - Edit and share a family letter to support students' learning numeracy at home.
- b. After you try it, quickly record:
 - *Depending on the action, answer one or more of the following: What did students say/do? What considerations do you want to keep in mind? How did families respond?*
 - What surprised you?
 - What might you try next?

- What evidence, if any, suggested this instructional move supported students' mathematical understanding or fluency?

Module 4: Experiencing

Part 1: Before Watching the Module

Grades PK-2

In your current mathematics block, how often do <i>students...</i>	Never	Sometimes	Often
Solve word problems by attending to their underlying structures and contexts rather than relying on keywords?			
Use visual representations of mathematical ideas?			
Explain their thinking to their peers?			
Have opportunities to practice mathematics concepts in a group?			

Grades 3-6

In your current math block, how often do <i>students...</i>	Never	Sometimes	Often
Explain their thinking?			
Use manipulatives?			
Discuss mistakes?			
Solve the same problem in different ways?			

Part 2: Engagement in the Module

A. WATCH EACH VIDEO IN THE MODULE AND RECORD A TAKEAWAY IN THE TABLE BELOW.

Complete?	Video	Takeaway
	Snapshot of Experiencing	
	Why These 3 Types of Experiences	
	Number Sense Routines	

Complete?	Video	Takeaway
	Contextual Problems	
	Practice	
	Using Timed Activities	
	Modifying Textbook Lessons	
	Final Thoughts on Experiencing	

B. CONCEPT SNAPSHOT

- What idea challenged your thinking and why?
- What is something you used to think but now you wonder?
- What is one experience from the videos you want to try with your students?

C. OBSERVATION CONNECTION

- What questions might you ask yourself when observing students during mathematical experiences?

D. CONNECTION SPARK

- How do number sense routines connect to cumulative review?

E. APPLICATION: CLASSROOM TRY-IT

After completing the module, commit to **one** small move.

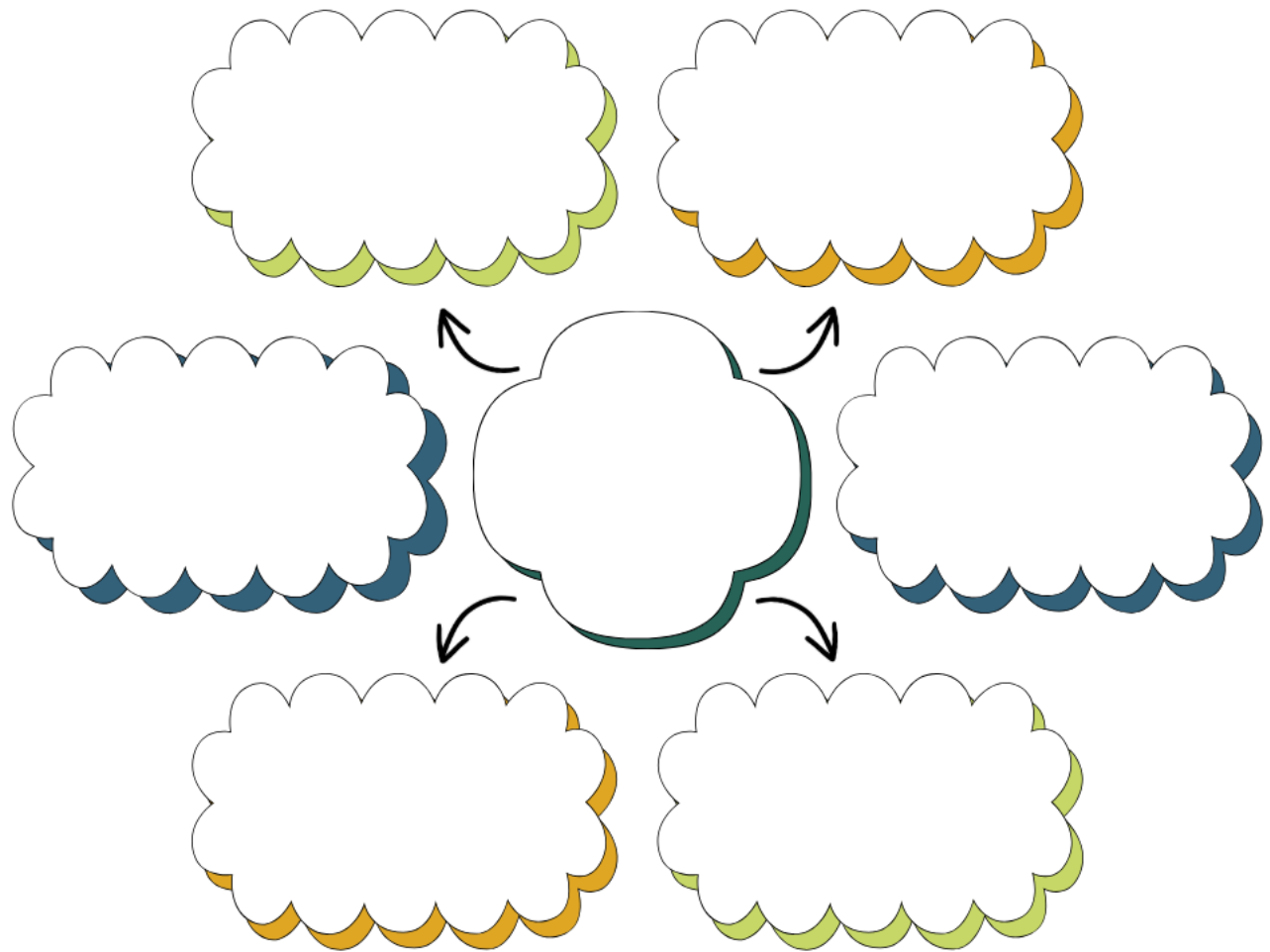
a. Choose a Try-It Action

- Add one number sense routine ([WODB](#), [Would You Rather Math](#), [Same but Different](#), [Estimation 180](#), [3 Act Tasks](#), [More 3 Act Tasks](#), [Number Sense Routines](#), [20 Days of Number Sense](#), [Visible Thinking](#), [Esti-Mysteries](#), Number Strings, Number Sense, Daily Routines, Number Talks, [Fraction Talks](#)).
- Add contextual problems (Problem Types Charts, see Appendix A of the [Iowa Academic Standards for Mathematics](#)) with a you do (students solve in any way), we do (2-3 students share), I do (teacher builds connections) or [numberless word problems](#) or [3 Reads](#).
- Ask focusing questions (versus funneling questions) during mathematical experiences.
- Modify textbook lessons (make the problem relevant to your students, give **only** the problem and let students solve it and talk about it, cut out a bunch of problems, focus on what students **understand** not just what they do, analyze an HQIM lesson and identify purposeful adjustments that preserve the lesson's mathematical goal, rigor, coherence, and intended learning progression while responding to student relevance).

b. After you try it, complete the Thought Bubbles activity below.

- Write what you tried in the center of the next page.
- Use the surrounding bubbles to add visuals of student work, steps in the process, what students said/did, what surprised you, what you might try next. A thought bubble map has been started for you. Feel free to add more bubbles.

Thought Bubble Activity



Bonus Module 1: Creating Visuals

Part 1: Before Watching the Module

What visuals are you hoping to access?

Part 2: Engagement in the Module

A. WATCH EACH VIDEO IN THE MODULE AND RECORD A TAKEAWAY IN THE TABLE BELOW.

Complete?	Video	Your Favorite Part of the Bonus
	Creating Visuals (PK-2)	
	Creating Visuals (3-6)	
	StrADDEgy Access for Participants (PK-2)	

B. CONCEPT SNAPSHOT

- What are two visuals you would like to use in your classroom and why?

C. APPLICATION: CLASSROOM TRY-IT

Choose one of the two visuals and implement it in your classroom. Record your responses to the following questions.

- What did students say/do?

- What surprised you?

- What might you try next?

- What evidence, if any, suggested this instructional move supported students' mathematical understanding or fluency?

Bonus Module 2: Ready-to-Use Experiences

Part 1: Before Watching the Module

Skim the routine/game titles in the module.

- Which routine/game are you already familiar with?

- Which routines/games are you most curious about?

Part 2: Engagement in the Module

A. CONCEPT SNAPSHOT

- Which two routines/games would you like to use in your classroom and why?

B. APPLICATION: CLASSROOM TRY-IT

Choose one routine/game and implement in your classroom. Record your responses to the following questions.

- What did students say/do?
- What surprised you?
- What might you try next?
- What evidence, if any, suggested this instructional move supported students' mathematical understanding or fluency?