



Using a Coherence Framework for School Change

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Alignment to Learning Forward Standards

- The federal education law, Every Student Succeeds Act (ESSA), redefines professional development with a purposeful influence from Learning Forward.
- Learning Forward, a national association recognized as leaders in professional learning, has established [standards for professional learning](#) that set a high bar for quality learning experiences.
- This session aligns to the following standard(s):
 - ✓ Leadership **Professional learning that increases educator effectiveness and results for all students** requires skillful leaders who develop capacity, advocate, and create support systems for professional learning.
 - ✓ Implementation **Professional learning that increases educator effectiveness and results for all students** applies research on change and sustains support for implementation of professional learning for long-term change.
 - ✓ Learning Designs **Professional learning that increases educator effectiveness and results for all students** integrates theories, research, and models of human learning to achieve its intended outcomes.
 - ✓ Data **Professional learning that increases educator effectiveness and results for all students** uses a variety of sources and types of student, educator, and system data to plan, assess, and evaluate professional learning.
 - ✓ Outcomes **Professional learning that increases educator effectiveness and results for all students** aligns its outcomes with educator performance and student curriculum standards.
 - ✓ Learning Communities **Professional learning that increases educator effectiveness and results for all students** occurs within learning communities committed to continuous improvement, collective responsibility, and goal alignment.



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Instructional Coherence: Session Goals

- **Explore** an instructional coherence framework
- **Analyze** instructional coherence practices within your school/district
- **Discuss** steps schools/districts can take to better align instruction, curriculum and assessments to support student learning

Coherence Framework: Introduction

To what degree to you **agree** or **disagree** with each of the following statements?

Strongly Disagree, Disagree, Agree, Strongly Agree

1. You can **see real continuity** from one program to another in my school.
2. Many special programs **come and go** in my school.
3. Once we start a new program, **we follow up** to make sure that it's working.
4. We have **so many different programs** in my school that I can't keep track of all of them.

Coherence Framework: Introduction



How does this **impact** teaching and student learning?

Coherence Framework: Introduction

To what degree to you **agree** or **disagree** with each of the following statements?

Strongly Disagree, Disagree, Agree, Strongly Agree

1. Curriculum, instruction, and learning materials are **well coordinated** across the **different grade levels** at my school.
2. There is **consistency** in curriculum, instruction, and learning materials among teacher in the **same grade level or subject** at my school.

Coherence Framework: Introduction



How does this **impact** teaching and student learning?

Coherence Framework: Exploring Coherence

Kindergarten Example: **OAS-Science**

K-PS3-1 Make observations to determine the effect of sunlight on Earth's surface.

K-PS3-2 Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*



Coherence Framework: Exploring Coherence

This lesson is designed to help students understand day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year.



Grade Level: K - 2nd



Subject: Science



Length of Time: About 45 Minutes



Objectives & Outcomes

Students will be able to identify the sun as the center of our solar system, provide details about the sun, and demonstrate the rotation in regards to seasons, daytime and nighttime.

Coherence Framework: Exploring Coherence

Body of Lesson

Direct Teaching

Model day, night, and seasons: Use a lamp with the shade removed so that the bulb is visible. This will represent the sun. Model with students that when the Earth is facing the sun (bulb) it is daytime, and when it is turned away from the sun (bulb) it is nighttime.

To model the seasons, use a globe to represent the Earth. Place the picture of the child in summer and in winter on the different hemispheres of the Earth. Tilt the hemisphere with the child in summer towards the sun (bulb) and explain that because of the Earth's tilt sometimes we are closer to the sun. It is summer during this time. When we are tilted farther away from the sun, it is winter.

Depending on what season it is, ask if where you live is tilted closer to the sun at that moment or farther away. (CFU: Listen, and answer questions accordingly. Possibly have volunteers demonstrate day, night and seasons themselves... using realia.)

Coherence Framework: Exploring Coherence

Kindergarten: OSDE Science Curriculum Frameworks

In A Nutshell

Through observations, students can see examples of sunlight heating different surfaces on Earth. Students then have opportunities to see how different materials can block the sun and reduce the warming of different surfaces.

3D Storyline	Student Actions
<p>In this performance expectation bundle, students are able to make observations of the sunlight's impact on different surfaces on Earth and then think about materials for designing a structure that would reduce this impact. In making observations, students can begin to explain phenomena like, "Why the ground is cooler in the shade than in the sun?"</p> <p>In order for students to make a claim that sunlight warms the surface of the Earth, students must first be given opportunities to observe sunlight on a variety of surfaces (sidewalk, grass, T-shirts, playground toys). Students can then begin to identify patterns that might suggest a cause and effect relationship between the light and the temperature of the surface of objects. At this age, the crosscutting concept of cause and effect has students examining and analyzing patterns found in everyday life, and beginning to consider what might be causing these patterns. In order to do this students should be given experiences through simple investigations that allow them to gather evidence to support or refute their ideas about causes and ultimately lead them to identifying the pattern, "sunlight warms the earth's surfaces."</p> <p>With an understanding that sunlight warms the Earth's surfaces, students can be given an opportunity to think about materials or structures, like umbrellas, that might reduce this warming effect. Students should be thinking about and/or discussing why they think a certain material or structure reduces the warming</p>	<p>Students Will...</p> <ul style="list-style-type: none">• Make observations of the sunlight's impact on surfaces on Earth.• Observe patterns for how the sunlight impacts surfaces on Earth.• Communicate from observations that sunlight warms surfaces on Earth.• Design a structure that will reduce the warming effect of sunlight on a surface.• Use tools and materials to build a structure that will reduce the warming effect of sunlight on an area.*

Coherence Framework: Exploring Coherence

Kindergarten Lesson Topically Aligns to 5th grade **OAS-Science**

5-ESS1-1 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.

5-ESS1-2 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.

Coherence Framework: Exploring Coherence

Math Assessment Example

Circle the best estimate:	Explain your reasoning:
1) 54 x 9 A) 60 D) 500 B) 300 E) 1,000 C) 400	

Coherence Framework: Exploring Coherence

Math Instruction

Estimate the sum by rounding each number to the nearest hundred. Show your work!

How coherent are they?

$\begin{array}{r} 189 \rightarrow 200 \\ + 334 \rightarrow 300 \\ \hline 500 \end{array}$	$\begin{array}{r} 441 \rightarrow \\ + 323 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 252 \rightarrow \\ + 368 \rightarrow \\ \hline \end{array}$
$\begin{array}{r} 363 \rightarrow \\ + 429 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 598 \rightarrow \\ + 176 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 625 \rightarrow \\ + 238 \rightarrow \\ \hline \end{array}$
$\begin{array}{r} 324 \rightarrow \\ + 150 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 716 \rightarrow \\ + 202 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 137 \rightarrow \\ + 381 \rightarrow \\ \hline \end{array}$
$\begin{array}{r} 681 \rightarrow \\ + 99 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 528 \rightarrow \\ + 145 \rightarrow \\ \hline \end{array}$	$\begin{array}{r} 848 \rightarrow \\ + 136 \rightarrow \\ \hline \end{array}$

Circle the best estimate:	Explain your reasoning:
1) 54 x 9	
A) 60 D) 500	
B) 300 E) 1,000	
C) 400	

Coherence Framework: Exploring Coherence



Are there **other examples** of incoherence as it relates to instruction?



Instructional Coherence: Overview

The research suggests that schools that are able to demonstrate **increased coherence of curriculum, instruction and assessment** show **marked improvements** in student performance

- Newman, Smith, Allensworth, & Bryk, 2001a

Instructional Coherence: Overview

The key to schools' **success** is the requirement that **teachers** within a grade level **share curriculum, instructional strategies,** and **assessments of students,** and that curriculum and assessments **build seamlessly** from one grade level to the next.

Coherence Framework: Indicator Survey

To what degree do you think your school or district **align** to each of the following **indicators** for instructional coherence?

- 1** - **Strongly** Aligned
- 2** - **Somewhat** Aligned
- 3** - **Not** Aligned

Instructional Coherence: Indicators

1 Teachers within a grade or across a subject purposely link their curriculum to stated learning goals and use common instructional strategies and assessments.

Instructional Coherence: Indicators

2 Teachers coordinate curriculum and assessments to **avoid repetition** and to offer students new and more complex aspects of subject matter from grade to grade.

Instructional Coherence: Indicators

3 School-sponsored support programs, such as remedial instruction, assemblies, field trips, tutoring, and parent education, are **linked** to curriculum, instruction, and assessment.

Instructional Coherence: Indicators

4 Professional development for staff members supports the implementation of a common curriculum, instructional strategies, and assessments.

Instructional Coherence: Indicators

5 Professional development programs are sustained over time.

Instructional Coherence: Indicators

6 The school strategically accepts and refuses programs and initiatives in a manner that supports staff focus, program continuity, and ongoing improvement.

Instructional Coherence: Indicators

7 School improvement planning and assessment **directly address** the school's progress in providing a common, coordinated, and sustained school program.

Instructional Coherence: Indicators

8 Over time, curriculum remains reasonably stable and provides teachers with sustained opportunities to learn how to teach it well.

Instructional Coherence: Indicators

9 Over time, teaching assignments and key program leaders or leadership positions remain stable.

Coherence Framework: Introduction



Sketch a model explaining the relationship standards, curriculum, instruction and *assessment* have to each other.

Instructional Coherence: Guiding Practices

1 Common Instructional Framework

2 Focused Professional Development

3 Collaborative Organization

1 Common Instructional Framework

A common instructional framework **guides curriculum, teaching, assessment, and learning climate.** The framework **combines specific strategies and materials** to guide teaching and assessment. - Newmann, 2001

1 Common Instructional Framework

TRU Framework

The Five Dimensions of Powerful Classrooms

The Content	Cognitive Demand	Equitable Access to Content	Agency, Ownership, and Identity	Formative Assessment
<i>The extent to which classroom activity structures provide opportunities for students to become knowledgeable, flexible, and resourceful disciplinary thinkers. Discussions are focused and coherent, providing opportunities to learn disciplinary ideas, techniques, and perspectives, make connections, and develop productive disciplinary habits of mind.</i>	<i>The extent to which students have opportunities to grapple with and make sense of important disciplinary ideas and their use. Students learn best when they are challenged in ways that provide room and support for growth, with task difficulty ranging from moderate to demanding. The level of challenge should be conducive to what has been called “productive struggle.”</i>	<i>The extent to which classroom activity structures invite and support the active engagement of all of the students in the classroom with the core disciplinary content being addressed by the class. Classrooms in which a small number of students get most of the “air time” are not equitable, no matter how rich the content: all students need to be involved in meaningful ways.</i>	<i>The extent to which students are provided opportunities to “walk the walk and talk the talk” – to contribute to conversations about disciplinary ideas, to build on others’ ideas and have others build on theirs – in ways that contribute to their development of agency (the willingness to engage), their ownership over the content, and the development of positive identities as thinkers and learners.</i>	<i>The extent to which classroom activities elicit student thinking and subsequent interactions respond to those ideas, building on productive beginnings and addressing emerging misunderstandings. Powerful instruction “meets students where they are” and gives them opportunities to deepen their understandings.</i>

1 Common Instructional Framework

High Leverage Teaching Practices

1. Leading a group discussion
2. Explaining and modeling content, practices, and strategies
3. Eliciting and interpreting individual students' thinking
4. Diagnosing particular common patterns of student thinking and development in a subject-matter domain
5. Implementing norms and routines for classroom discourse and work
6. Coordinating and adjusting instruction during a lesson
7. Specifying and reinforcing productive student behavior
8. Implementing organizational routines
9. Setting up and managing small group work
10. Building respectful relationships with students

1 Common Instructional Framework

High Leverage Teaching Practices

11. Talking about a student with parents or other caregivers
12. Learning about students' cultural, religious, family, intellectual, and personal experiences and resources for use in instruction
13. Setting long- and short-term learning goals for students
14. Designing single lessons and sequences of lessons
15. Checking student understanding during and at the conclusion of lessons
16. Selecting and designing formal assessments of student learning
17. Interpreting the results of student work, including routine assignments, quizzes, tests, projects, and standardized assessments
18. Providing oral and written feedback to students
19. Analyzing instruction for the purpose of improving it

1 Common Instructional Framework

OKLAHOMA CURRICULUM FRAMEWORKS



Students will efficiently multiply and divide factors up to 12 to solve problems.

Student Actions

- **Develop a deep and flexible conceptual understanding** of the relationship between multiplication and division by modeling these operations using a variety of tools (cubes, tiles, grid paper, tally marks) and representations (arrays, skip counting, hundreds charts, repeated addition, repeated subtraction, etc.).
- **Develop the ability to communicate mathematically** by using mathematical language and terms to explain their thinking during the multiplication and division process.
- **Develop strategies for problem solving** by applying understandings of multiplication and division to find solutions for expressions related to basic facts, such as 40×60 , before being introduced to algorithms for working with multi-digit numbers.

Teacher Actions

- **Pose purposeful questions** that help students discover number family relationships. For example, 2×4 , 4×4 , 2×8 .
- **Support productive struggle** by allowing students to compare different strategies with peers.
- **Implement tasks that promote reasoning and problem solving** by providing opportunities for students to exhibit their thinking by using a variety of representations (tiles, blocks, arrays, sets, etc.)
- **Elicit evidence of student thinking** by encouraging students to explain their reasoning and justify their strategies and solutions, and **use this evidence** to assess student progress toward fluency with basic multiplication and division facts.

Key Understandings

- Application of the Commutative and Zero properties of multiplication enables one to make connections between related facts and facilitates deeper understanding of the process of multiplication.
- Fluent grasp of the basic multiplication and division facts forms an important foundation for multiplication of larger numbers.

Misconceptions

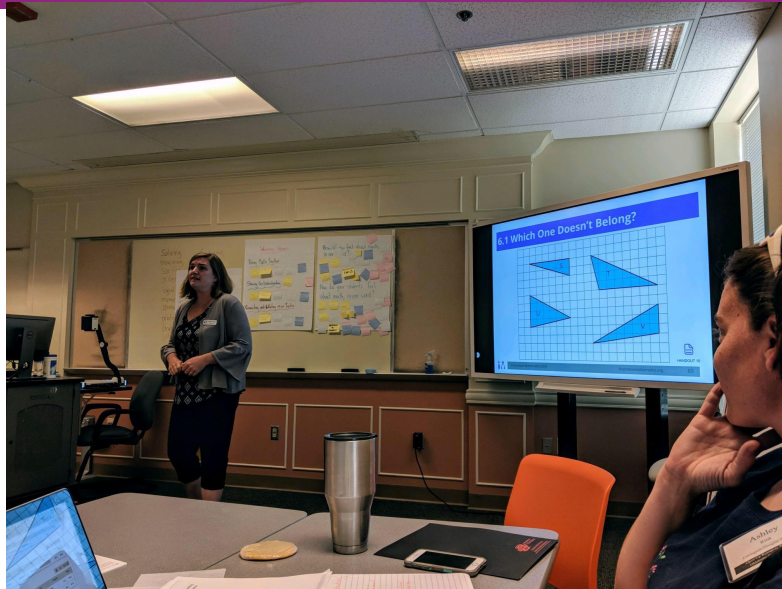
- Multiplication and addition have the same function. For example, because $1 + 0 = 1$ then $1 \times 0 = 1$.
- 2×3 and 3×2 are two separate, unrelated facts. Students may not understand the commutative property.

2 Focused Professional Development

Teaching practice and student learning will improve in the direction proposed by state policy when there is **both alignment** of curriculum, assessment, **and professional development focused on teaching and learning academic content** and provision of **adequate opportunities** for teachers **to understand and internalize the changes.** - Cohen and Hill, 1998.

2 Focused Professional Development

Concrete classroom examples and experiences centering conversations about teaching practices and student learning.



3 Collaborative Organization

People from different parts of the system come to the table to talk together

Provide opportunities for teams of teachers to meet regularly with focused conversations on implementation of instructional framework.

- ❑ Grade level teams meet regularly to analyze student work
- ❑ Vertical teams analyzing progressions in learning

Instructional Coherence: Role of Leaders

Create and maintain “**collective decision making structures**” to develop a shared focus, and productive schoolwide goals and strategies. - *Honig & Hatch, 2004*

Instructional Coherence: Role of Leaders

Direct resources toward a clearly articulated **instructional framework** tied to student outcomes and **limit programs** to those that contribute to the framework.

- *Newmann et al., 2001a*

Instructional Coherence: Role of Leaders

Organize **cohesive professional development** that supports the instructional framework.

- *Newmann et al., 2001a*



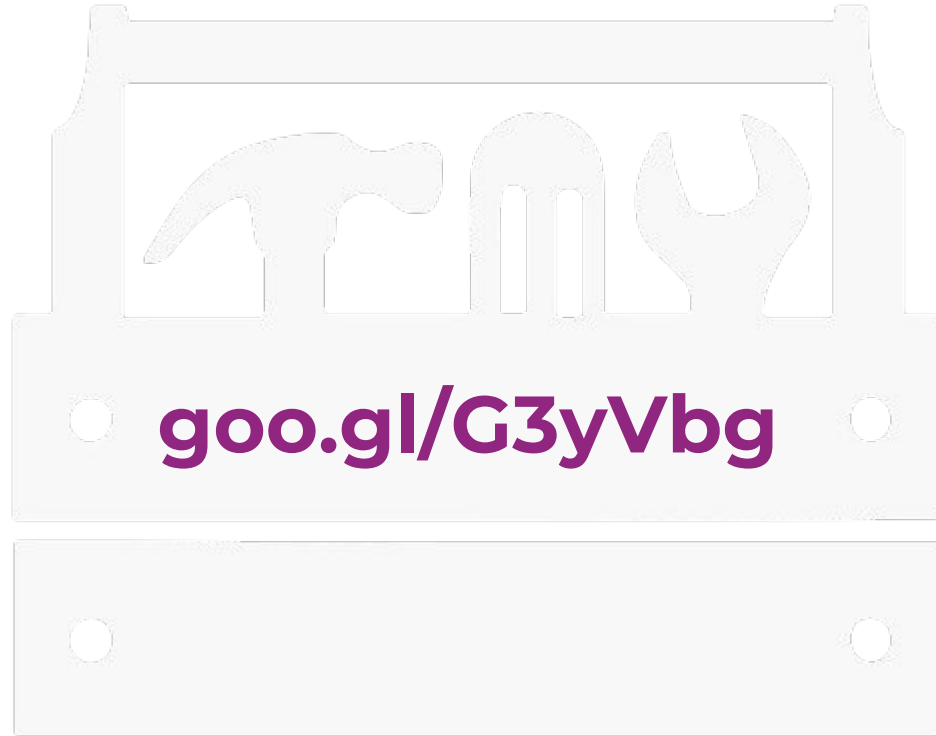
Instructional Coherence: Role of Leaders



Regularly **consult with staff** members about programs that may be **affecting** their **ability to implement** the cohesive instructional framework.

- Kedro - 2004

Instructional Coherence: Toolkit



Instructional Coherence: Continued Learning

Participate in continued learning opportunities throughout the school year about instructional coherence.



Sign Up: goo.gl/an5uEC



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