Implementing New Standards: Curriculum Frameworks

Link to Presentation:
http://bit.ly/engagadmin19

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Session Goals:

- **Explore** the **information and resources** available through the Oklahoma Curriculum Frameworks.
- **Examine** how the Oklahoma Curriculum Frameworks **support implementation** of the Oklahoma Academic Standards.
- **Discuss strategies** for utilizing the Oklahoma Curriculum Frameworks to support **quality instruction, curriculum and assessment.**

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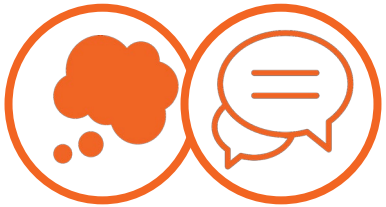
Introduction:

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

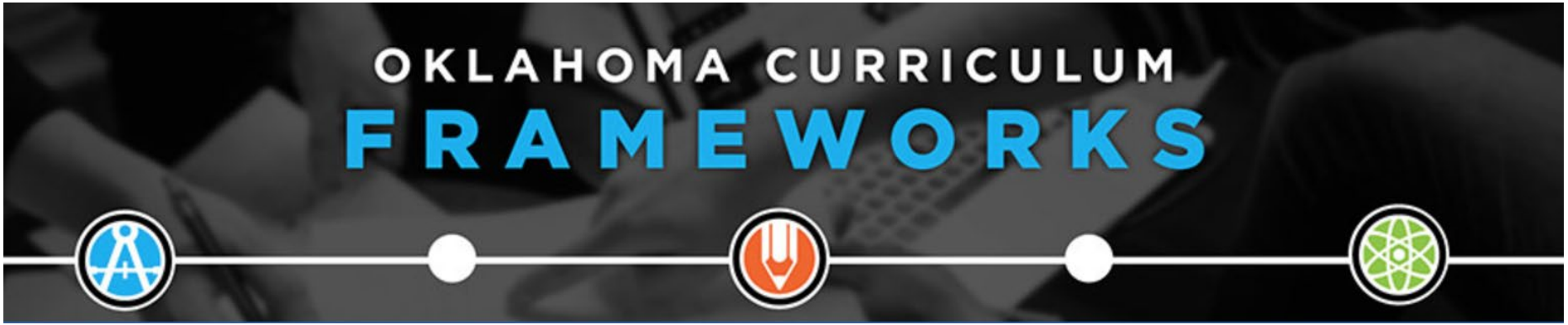
1. Our curriculum, instruction, and learning materials are **well aligned** to state standards at each grade level.
2. There is **consistency** in curriculum, instruction, and learning materials among teachers in the **same grade level or subject** at my school.
3. Our curriculum **deepens understanding and addresses gaps** across grade levels.

Introduction:



What **resources** do teachers have (or need) access to that support alignment, consistency and grade-level progressions?

Curriculum Frameworks:



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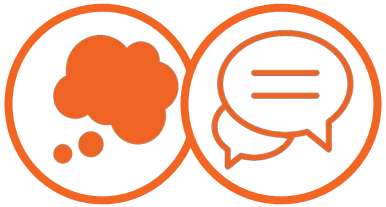
Using Curriculum Frameworks:



How might schools and teachers utilize the information and resources found in the Oklahoma Curriculum Frameworks?

Using Curriculum Frameworks:

1. Instructional Material Alignment
2. Professional Development
3. Instructional Leader Guidance
4. Differentiated Learning Supports

Instructional Material Alignment: Example

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.*

Instructional Material Alignment: Example

This lesson is designed for 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.

Instructional Material Alignment: Example

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 titled 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.)

Instructional Material Alignment: Example

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
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?" 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." 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	**Students Will...** • 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.*

Instructional Material Alignment: Example

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.

Instructional Material Alignment: Example

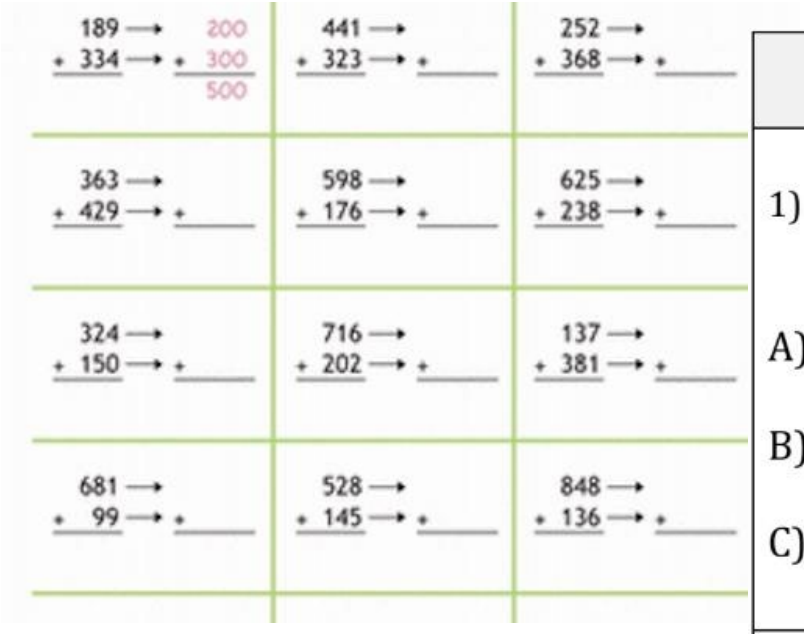
Math Assessment Example

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

Instructional Material Alignment: Example

Math Instruction

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



How coherent are they?

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

2 Professional Development

In a Nutshell

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

Student Actions	Teacher 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 x 60, before being introduced to algorithms for working with multi-digit numbers.	• **Pose purposeful questions** that help students discover number family relationships. For example, 2 x 4, 4 x 4, 2 x 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	**Misconceptions**
• 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.	• Multiplication and addition have the same function. For example, because 1 + 0 = 1 then 1 x 0 = 1. • 2 x 3 and 3 x 2 are two separate, unrelated facts. Students may not understand the commutative property.

Provide teachers time to discuss in and across grade levels.

3 Instructional Leader Guidance

Provide teachers time to discuss in and across grade levels.

5.PS1.2 Develop a model to describe that matter is made of particles too small to be seen.

5.PS1.3 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

3 Instructional Leader Guidance

Students should be given opportunities to **gather and analyze data to determine** that **matter exists at a scale that is too small to be seen.** Students can develop and communicate their understanding of this abstract concept by observing instances where they know matter is taking up space even if they can't see the things that make up matter. For example, **by inflating a balloon or a basketball, students can see air moving into the system causing it to expand, even though they cannot see the air.** Students can **gather additional data to make claims** that **air is made of particles too small to see.**

3 Differentiated Learning Support

Developing

4.2.PWS.1

Students will use **their combined knowledge of letter-sound correspondences, syllable patterns, morphology and semantics to accurately read unfamiliar words, including multisyllabic words.**

Approaching

4.2.PWS.1

Students will use their combined knowledge of letter-sound correspondences, syllable patterns, morphology and semantics to accurately read unfamiliar words, including multisyllabic words.

Instructional Coherence:

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

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