

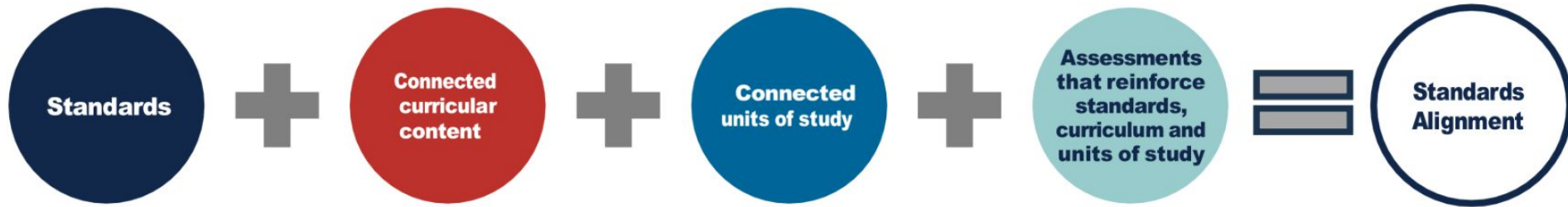


KSDE Program Managers

Standards Alignment



Standards alignment involves three-way alignment among standards (the expectation we hold), curriculum (the intentional plan and resources we have for guiding students to learn what is necessary to meet the standard), and assessment (an examination of to what extent the student meets the standard).



Across content areas, **Standards Alignment Toolkits** support educators with aligning curriculum, instruction, and assessments with the Kansas standards as a first step toward ensuring all students receive a high-quality education.

School Improvement Resource



ksde.gov

"If we strengthen **coherence** across Kansas through focusing on a few **high-leverage, fundamental** actions, then our students will develop more knowledge and skills leading to greater opportunities and fewer limitations."

Division of Learning Services Theory of Action

Welcome!

To assist districts and schools in effectively implementing the **Four Fundamentals**, the Kansas State Department of Education (KSDE) has dedicated resources to developing toolkits, guidance documents, Professional Learning opportunities, and support systems. Through these efforts, KSDE is committed to fostering continuous improvement, ensuring that all schools have the knowledge, resources, and support needed to be successful.

Mathematics



KSDE Math Team

- Jennifer Hamlet - Program Manager
- Jolene Goodheart Peterson - TLC
- Cherryl Delacruz - TLC
- Lara Staker - TLC
- Amber Boyington - TLC
- Todd Flory - TLC
- Amber Graham - FE
- Diane Kimsey - FE
- Julie Keithline - FE
- Shelly DeWeese - FE
- Luke Henke - FE
- Jennifer Walker - FE
- Samantha Wright - FE



Standards Alignment Process



- Learning Outcomes
- Vertical Alignment
- Horizontal Alignment
- Curriculum Analysis
- Content and Skills Mapping

Learning Outcomes



Articulate the details of the desired learning outcomes for students. Build educator knowledge related to the rigor and depth necessary for students to meet grade-level expectations.

Tools to use:

- Kansas Math Standards
- Flipbooks
- Guidance Document
- Unpacking the Standards process and template
- Depth of Knowledge (DOK)

Vertical Alignment



Clarify content across grade levels/ grade bands (vertical alignment), recognizing the specific expectations for the level of understanding students are expected to have at the current grade level, the grade above, and the grade below. ([Guidance Document](#))

KSDE - Kansas Math Standards Guidance Document					Kansas Math Standards Assessment Calendar Overview	Mathematics Flip books	Student Glossary	How to use" Guidance Document
<p>The major work of the grade level should focus on the major clusters. The supporting and additional clusters should support the major clusters and provide foundational ideas for future mathematics.</p> <p> ■ Major ■ Supporting ■ Additional ■ All </p>					Interim Blueprint	Educator Portal	Resource Sheet	Lexia/quantile hub
Previous Grade(s) Standards	6th Grade Standards Taught in Advance	6th Grade Standard	6th Grade Standards Taught Concurrently	Building Toward Other 6th Grade Standards Horizontal Alignment	Future Grade Standard(s) Vertical Alignment	Standards for Mathematical Practice	Vocabulary	Resources
4.MD.1 Know relative sizes of measurement units within one system of units including: ft, in, km, m, cm, kg, g, lb, oz., l, ml, hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches using the number pairs (1, 12), (2, 24), (3, 36), ... (4.MD.1) (Note: Conversions are limited to one-step conversions.)		6.RP.1 Use ratio language to describe a relationship between two quantities. Distinguish between part-to-part and part-to-whole relationships. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes." (6.RP.1)		6.RP.2 Use unit rate language (for each one, "for every one" and "per") and unit rate notation to demonstrate understanding the concept of a unit rate as associated with a ratio as with b:a). For example, "This recipe has a ratio of 2 cups of flour to 4 cups of sugar, so there is $\frac{3}{4}$ cup of flour for each cup of sugar." "We sold 120 for 15 hamburgers, which is a rate of \$5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.) (6.RP.2)		SMP 2: Reason abstractly and quantitatively. SMP 6: Attend to precision. SMP 8: Look for and express regularity in repeated reasoning.	Part-to-part ratio Part-to-whole ratio Ratio	
4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison (Example: 6 times as many vs. 6 more than). (4.OA.2)				6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, (e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagram, or using calculations.) a. Make tables of equivalent ratios relating quantities with whole-number measurements. Find the missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took $\frac{1}{2}$ hour to mow 4 lawns, then at that rate, how many lawns could be mowed in 3 hours? At what rate were lawns being mowed? (6.RP.3a) (6.RP.3b) b. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means $\frac{30}{100}$ times the quantity), solve problems involving				

Horizontal Alignment

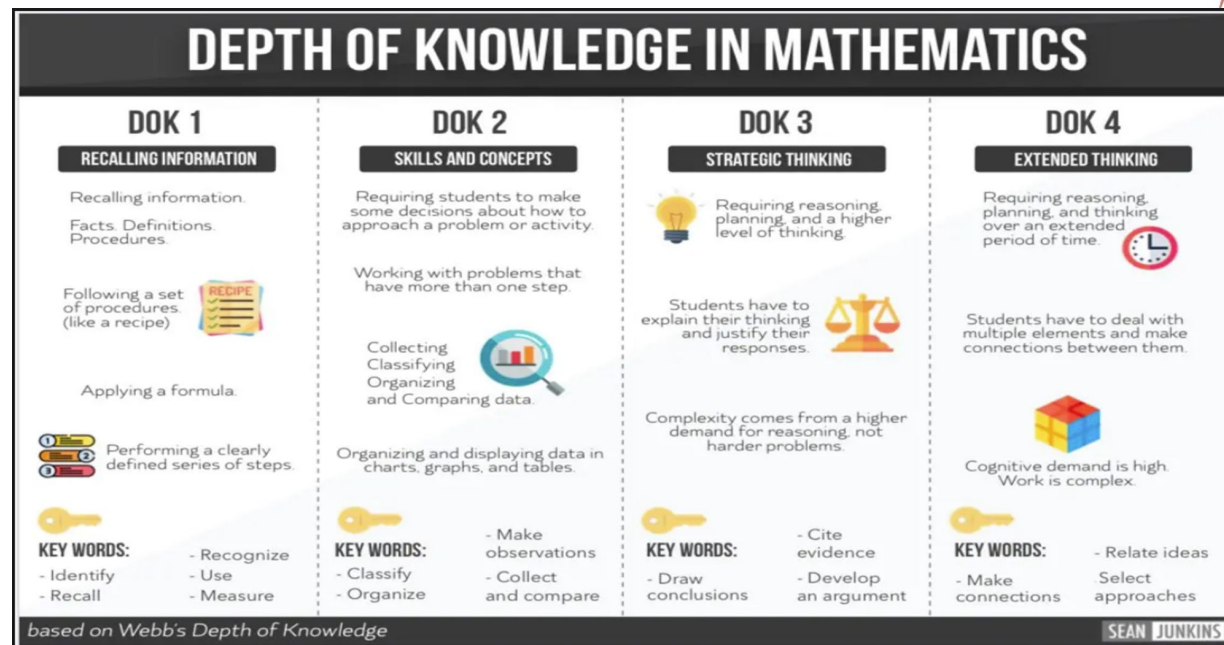


Identify how/when the content standards are addressed within a grade level (horizontal alignment). [\(Guidance Document\)](#)

KSDE - Kansas Math Standards Guidance Document					Kansas Math Standards Assessment Calendar Overview	Mathematics Flip books Interim Blueprint Educator Portal	Student Glossary Resource Sheet Lexile/quantile hub	"How to use" Guidance Document
Previous Grade(s) Standards	6th Grade Standards Taught in Advance	6th Grade Standard	6th Grade Standards Taught Concurrently	Building Toward Other 6th Grade Standards Horizontal Alignment	Future Grade Standard(s) Vertical Alignment	Standards for Mathematical Practice	Vocabulary	Resources
4.MD.1 Know relative sizes of measurement units within one system of units including ft, in, km, m, cm; g, lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36).... (4.MD.1) (Note: Conversions are limited to one-step conversions.)	6.RP.1 Use ratio language to describe a relationship between two quantities. Distinguish between part-to-part and part-to-whole relationships. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes." (6.RP.1)			6.RP.2 Use unit rate language ("for each one," "for every one" and "per") and unit rate notation to demonstrate understanding the concept of a unit rate a/b associated with a ratio a:b with b≠0. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid \$75 for 15 hamburgers, which is a rate of \$5 per hamburger." (Expectations for unit rates in this grade are limited to non-complex fractions.) (6.RP.2)		SMP 2: Reason abstractly and quantitatively. SMP 6: Attend to precision. SMP 8: Look for and express regularity in repeated reasoning.	Part-to-part ratio Part-to-whole ratio Ratio	
4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison (Example: 6 times as many vs. 6 more than). (4.OA.2)				6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, (e.g. by reasoning about tables of equivalent ratios, tape diagrams, double number line diagram, or using calculations.) a. Make tables of equivalent ratios relating quantities with whole-number measurements, find the missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? (6.RP.3a) (6.RP.3b) b. Find a percent of a quantity as a rate per 100 (e.g. 30% of a quantity means 30/100; solve the resulting multiplication, involving...				

Curriculum Analysis

Focus on the Depth of Knowledge (DOK) for each grade level to ensure adequate rigor.





HESS COGNITIVE RIGOR MATRIX | MATH-SCIENCE CRM

Integrating Depth-of-Knowledge Levels with Bloom's Cognitive Process Dimensions



Revised Bloom's Taxonomy	DOK Level 1 Recall and Reproduction	DOK Level 2 Skills and Concepts	DOK Level 3 Strategic Thinking or Reasoning	DOK Level 4 Extended Thinking
Remember Retrieve knowledge from long-term memory, recognize, recall, locate, identify	<ul style="list-style-type: none"> Recall, observe, and recognize facts, principles, properties Recall/ identify conversions among representations or numbers (e.g., customary and metric measures) 	Use these Hess CRM curricular examples with most mathematics or science assignments or assessments.		
Understand Construct meaning, clarify, paraphrase, represent, translate, illustrate, give examples, classify, categorize, summarize, generalize, infer a logical conclusion, predict, compare-contrast, match like ideas, explain, construct models	<ul style="list-style-type: none"> Evaluate an expression Locate points on a grid or number on number line Solve a one-step problem Represent math relationships in words, pictures, or symbols Read, write, compare decimals in scientific notation 			
Apply Carry out or use a procedure in a given situation; carry out (apply to a familiar task), or use (apply) to an unfamiliar task	<ul style="list-style-type: none"> Follow simple procedures (recipe-type directions) Calculate, measure, apply a rule (e.g., rounding) Apply algorithm or formula (e.g., area, perimeter) Solve linear equations Make conversions among representations or numbers, or within and between customary and metric measures 	<ul style="list-style-type: none"> Specify and explain relationships (e.g., non examples or examples; cause-effect) Make and record observations Explain steps followed Summarize results or concepts Make basic inferences or logical predictions from data or observations Use models or diagrams to represent or explain mathematical concepts Make and explain estimates Select a procedure according to criteria and perform it Solve routine problem applying multiple concepts or decision points Retrieve information from a table, graph, or figure and use it solve a problem requiring multiple steps Translate between tables, graphs, words, and symbolic notations (e.g., graph data from a table) Construct models given criteria 	<ul style="list-style-type: none"> Use concepts to solve non routine problems Explain, generalize, or connect ideas using supporting evidence Make and justify conjectures Explain thinking or reasoning when more than one solution or approach is possible Explain phenomena in terms of concepts Design investigation for a specific purpose or research question Conduct a designed investigation Use concepts to solve non routine problems Use and show reasoning, planning, and evidence Translate between problem and symbolic notation when not a direct translation 	<ul style="list-style-type: none"> Relate mathematical or scientific concepts to other content areas, other domains, or other concepts Develop generalizations of the results obtained and the strategies used (from investigation or readings) and apply them to new problem situations Select or devise approach among many alternatives to solve a problem Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results
Analyze Break into constituent parts, determine how parts relate, differentiate between relevant-irrelevant, distinguish, focus, select, organize, outline, find coherence, deconstruct	<ul style="list-style-type: none"> Retrieve information from a table or graph to answer a question Identify whether specific information is contained in graphic representations (e.g., table, graph, t-chart, diagram) Identify a pattern or trend 	<ul style="list-style-type: none"> Categorize, classify materials, data, figures based on characteristics Organize or order data Compare-contrast figures or data Select appropriate graph and organize and display data Interpret data from a simple graph Extend a pattern 	<ul style="list-style-type: none"> Compare information within or across data sets or texts Analyze and draw conclusions from data, citing evidence Generalize a pattern Interpret data from complex graph Analyze similarities-differences between procedures or solutions 	<ul style="list-style-type: none"> Analyze multiple sources of evidence Analyze complex or abstract themes Gather, analyze, and evaluate information
Evaluate Make judgments based on criteria, check, detect inconsistencies or fallacies, judge, critique	"UG"—unsubstantiated generalizations – stating an opinion without providing any support for it!		<ul style="list-style-type: none"> Cite evidence and develop a logical argument for concepts or solutions Describe, compare, and contrast solution methods Verify reasonableness of results 	<ul style="list-style-type: none"> Gather, analyze, and evaluate information to draw conclusions Apply understanding in a novel way, provide argument or justification for the application
Create Reorganize elements into new patterns or structures, generate, hypothesize, design, plan, produce	<ul style="list-style-type: none"> Brainstorm ideas, concepts, or perspectives related to a topic 	<ul style="list-style-type: none"> Generate conjectures or hypotheses based on observations or prior knowledge and experience 	<ul style="list-style-type: none"> Synthesize information within one data set, source, or text Formulate an original problem given a situation Develop a scientific/mathematical model for a complex situation 	<ul style="list-style-type: none"> Synthesize information across multiple sources or texts Design a mathematical model to inform and solve a practical or abstract situation

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Open Middle Math DOK Matrices

Sixth Grade Matrix

Depth of Knowledge Matrix – Sixth Grade Math

Topic	Percent of a Quantity	Ratios and Unit Rates	Dividing Fractions	Multiplying Decimals
CCSS Stand.	• 6.RP.3c	• 6.RP.1 & 6.RP.2	• 6.NS.1	• 6.NS.3
DOK 1 Example	Evaluate. 24 is 30% of what number?	Fill in the blank to make an equivalent ratio. ___ : 7 = 8 : 14	Find the quotient. $\frac{4}{9} \div \frac{2}{5}$	Find the product. $3.74 \cdot 4.29$
DOK 2 Example	Using the digits 0 to 9 at most one time each, fill in the boxes to make two true statements without rounding. You may reuse all the digits each time. □□ is □□% of □□	Using the digits 0 to 9 at most one time each, fill in the boxes to make an equivalent ratio. □ : □ = □□ : □	Using the digits 1 to 9 at most one time each, fill in the boxes to make two different pairs of fractions that have a quotient of $\frac{2}{3}$. You may reuse all the digits each time. $\frac{\square}{\square} \div \frac{\square}{\square} = \frac{2}{3}$	Using the digits 1 to 9 at most one time each, fill in the boxes to make a whole number product. □.□ · □.□□
DOK 3 Example	Using the digits 0 to 9 at most one time each, fill in the boxes to make a true statement with the greatest possible whole without rounding. □□ is □□% of □□	Using the digits 0 to 9 at most one time each, fill in the boxes to make an equivalent ratio with that has a unit rate with the greatest possible value. □ : □ = □□ : □	Using the digits 1 to 9 at most one time each, fill in the boxes to make two fractions that have a quotient that is as close to $\frac{4}{11}$ as possible. $\frac{\square}{\square} \div \frac{\square}{\square}$	Using the digits 1 to 9 at most one time each, fill in the boxes to make a product with the greatest possible value. □.□□ · □.□□



More free DOK 2 & 3 problems available at openmiddle.com

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Curriculum Analysis

Identify any gaps, redundancies, or outdated resources. [\(Guidance Document\)](#)



KSDE - Kansas Math Standards Guidance Document					Kansas Math Standards Assessment Calendar Overview	Mathematics Flip books	Student Glossary	"How to use" Guidance Document
<p>The major work of the grade level should focus on the major clusters. The supporting and additional clusters should support the major clusters and provide foundational ideas for future mathematics.</p> <p> ■ Major ■ Supporting ■ Additional ■ All </p>					IXL	Interim Blueprint Educator Portal	Resource Sheet Lexile/quantile hub	
Previous Grade(s) Standards	6th Grade Standards Taught in Advance	6th Grade Standard	6th Grade Standards Taught Concurrently	Building Toward Other 6th Grade Standards	Future Grade Standard(s) Vertical Alignment	Standards for Mathematical Practice	Vocabulary	Resources
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4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison (Example: 6 times as many vs. 6 more than). (4.OA.2)				6.RP.3 Use ratio and rate reasoning to solve real-world and mathematical problems, (e.g. by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or using calculations.) a. Make tables of equivalent ratios relating quantities with whole-number measurements, find the missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? (6.RP.3a) (6.RP.3b) b. Find a percent of a quantity as a rate per 100 (e.g. 30% of a quantity means $\frac{30}{100}$ of the quantity), solve problems involving...				

Curriculum Analysis



Unpacking the Standards for Mathematical Practices

UNPACKING THE STANDARDS FOR MATHEMATICAL PRACTICE

Grades 3 - 5

1. Make sense of problems and persevere in solving them

Mathematically proficient elementary students explain to themselves and others the meaning of a problem, look for entry points to begin work on the problem, and plan and choose a solution pathway. As they work, they continually ask themselves, "Does this make sense?" When they find that their solution pathway does not make sense, they look for another pathway that does. They may also consider simpler forms of the original problem.

Example: When solving a problem involving multi-digit numbers, students might first consider similar problems that involve multiples of ten or one hundred.

2. Reason abstractly and quantitatively

Mathematically proficient elementary students make sense of quantities and their relationships in problem situations. They contextualize quantities and operations by using images or stories. They interpret symbols as having meaning, not just as directions to carry out a procedure. They can then interpret the solutions to operations in terms of the context.

Example: Students might visualize the expression $40 - 26$ by thinking, "If I have 26 marbles and Marie has 40, how many more do I need to have as many as Marie?" Then, in that context, they may think, "4 more will get me to a total of 30, and then 10 more will get me to 40, so the answer is 14."

Content and Skills Mapping



Align lessons to standards by analyzing existing lessons, units, and activities to ensure they correspond to the specific Kansas Mathematics Standards. Identify specific gaps of content or skills that may exist and identify or create supplemental materials to fill the gaps.

[Unpacking template](#)

Kansas Math Standards Unpacking Template

GRADE	DOMAIN:	
CLUSTER:		
Grade Level Standard:		

What do the students need to know?	What do the students need to be able to do?	ASPECTS OF RIGOR
		Procedural Conceptual Application
Key Vocabulary		Misconceptions
MATHEMATICAL PRACTICES (Mark the ones that apply) 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	Explanation	Examples
Alignment	Horizontal:	
	Vertical:	

Greenbush - Lawrence

February 24th, 2025 (Day 2)

April 21st, 2025 (Day 3)

June 24th, 2025 (Day 4)

June 25th, 2025 (Day 5)

Greenbush - Girard

March 3rd, 2025 (Day 2)

May 2nd, 2025 (Day 3)

June 18th, 2025 (Day 4)

June 19th, 2025 (Day 5)

Smoky Hill - Salina

March 3rd, 2025 (Day 3)

SW Plains

February 21st, 2025 (Day 2)

April 4th, 2025 (Day 3)

June 13th, 2025 (Day 4)

July 9th, 2025 (Day 5)

Orion

February 10, 2025 (Day 2)

March 10, 2025 (Day 3)

ESSDACK

February 25th, 2025 (Day 2)

March 31st, 2025 (Day 3)

April 25, 2025 (Day 4)

May 7, 2025 (Day 5)





KSDE Math Newsletter

KSDE Math Listserv:
jennifer.hamlet@ksde.gov

Science



Science Team Updates

New – Science/STEM Program Manager

Stephanie Alderman-Oler salderman-oler@ksde.org

Teacher Leader Consultants

Sarah Evans (USD 233)

Stacey Hart-Townsley (USD 259)

Betsy Lawrence (USD 231)



Science Standards Alignment Toolkit

- 5 **Overview**
 - 5 Purpose of the Toolkit
 - 6 How to Use the Toolkit
- 7 **Four Fundamentals**
- 8 **Instructional Vision for Science**
- 9 **Kansas Science Standards**
 - 10 Standards Alignment Process and Purpose
 - 10 Process and Purpose
 - 12 Unpacked Science Standards
- 13 **Recommended High School Scope and Sequence Guidance**
 - 13 Physical Science (03159) or Physics (03151)
 - 14 Life Science - Biology (03051)
 - 14 Chemistry (03101)
- 15 **Making Sense of the Unpacked Standards**
- 18 **Using the Unpacked Science Standards**
- 19 **Science Instructional Materials and Curriculum Evaluation Tool**
- 20 **Student Standard Alignment Tool**
- 21 **Glossary of Terms**
- 23 **References**



Standards Alignment Process

1. Define learning outcomes by close examination of the “unpacked” standards
2. Vertical alignment
3. Horizontal alignment
4. Analyze existing curriculum
5. Assessments alignment and timeline
6. Map content and skills
7. Monitor and revise



Unpacked Standards Tools

Supports standards alignment:

1. Define learning outcomes by close examination of the “unpacked” standards

2. Vertical alignment

The example below shows what to expect from the Unpacked Standards tools.

HS-LS1-1

Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out most of the functions of living systems and interact with other molecules. Molecular description does not include explanation of specific cell or tissue types, whole body systems, concepts, protein structures and functions, or the biochemical of protein synthesis.

TARGET SCIENCE AND ENGINEERING PRACTICE: PROGRESSION
Constructing Explanations and Designing Solutions

BELOW GRADE LEVEL

Grade	Grade Level Elements
Grades K-5	<ul style="list-style-type: none">Construct an account of explanation based on evidence and make connections between form and function (including the structure of proteins) and the assumption that molecules and interactions determine the natural world (open order, surface and molecular structure and function).Apply scientific ideas, principles, and/or evidence to construct, revise, and/or use an explanation for real-world phenomena, examples, or events.
Grades 6-8	<ul style="list-style-type: none">Use evidence, data, measurements, observations, patterns for construction or support an explanation or design a solution to a problem.
Grades 9-12	<ul style="list-style-type: none">Use evidence, data, measurements, observations, patterns for construction or support an explanation or design a solution to a problem.

9-12 GRADE LEVEL ELEMENTS

- Construct an explanation based on evidence and make connections between form and function (including the structure of proteins) and the assumption that molecules and interactions determine the natural world (open order, surface and molecular structure and function).

Prerequisites or skills already unique to this grade band:

- Variety of viruses
- Students can include students' own investigations, records, theories, predictions, peer review

Key experiences students need access to in order to be successful:

- Access to evidence that would support an explanation of the relationship between DNA, proteins, and natural world functions
- Provide the evidence for what is possible and realistic for support interpretation of how the structure of DNA determines the structure of proteins which determine the function of the proteins
- Use the evidence to explain an explanation above:
 - 9-12 cells (grades 9-12)
 - This specific sequence of genes determines the structure of the proteins
 - The structure of a protein determines the function of the protein
 - The function of the protein determines the function and specialization of the cell which is needed to support life functions

The standards have been grouped into “bundles” that are recommended to be taught and assessed together.

The performance expectation (PE) is the standard. The PE has been color coded to identify the three dimensions of the standard.

The vertical alignment information for the Science and Engineering Practice (SEP) comes from the NGSS Appendix F

The grade-level element is identified by NGSS for each dimension of each performance expectation.

The SEP has been unpacked by KSDE to identify what is new in the 9-12 grade band based on the vertical alignment and what are the key experiences a student needs to successfully reach the expectations of this SEP within the context of this standard.



Recommended Scope & Sequence

Supports standards alignment:

3. Horizontal alignment

Physical Science (03159) or Physics (03151)

ONE DIMENSIONAL MOTION

HS-PS2-1
HS-PS2-2
HS-PS2-3

EARTH'S SURFACE AND INTERIOR PROCESSES

HS-ESS2-3
HS-ESS2-1
HS-ESS1-5

ELECTRICITY AND MAGNETISM

HS-PS2-5
HS-PS3-5

ELECTROMAGNETIC RADIATION AND TECHNOLOGY

HS-PS4-1
HS-PS4-2
HS-PS4-3
HS-PS4-4
HS-PS4-5

GRAVITY AND ORBITS

HS-PS2-4
HS-ESS1-4
HS-ESS1-6

ENERGY CONVERSION

HS-PS3-2
HS-PS3-3

CLIMATE CHANGE

HS-PS3-1
HS-ESS2-4
HS-ESS3-1
HS-ESS3-4
HS-ESS3-5
HS-ESS3-6



Science Instructional Materials & Curriculum Evaluation Tool

Supports standards alignment:

4. Analyze existing curriculum

Section 1

Non-Negotiable Criterion of Standards Alignment ([Video](#))

1. The materials promote **students making sense of the Kansas Science Standards** by utilizing a **phenomenon or problem based approach**. They incorporate observable events and/or problems that are experienced in the natural world.
Select: **YES** **NO**
Comments:
2. The materials clearly identify areas for students to **utilize the three dimensions** of the science standards (disciplinary core ideas, cross cutting concepts and science and engineering practices).
Select: **YES** **NO**
Comments:
3. The science concepts represented in the material represent the most **current** understanding of **accurate** understandings and widely accepted scientific explanations.
Select: **YES** **NO**
Comments:



Student-Standard Alignment Tool

Supports standards alignment:

6. Map content and skills

Student Standard Alignment Tool

*(Analyze Students' Interests and Identities.)**

This tool is intended as an instructional planning tool. The standards are the expectation for every student in the state of Kansas. However, we acknowledge that Kansas students are a diverse population. Teachers should think intentionally about how the ideas and experiences that students bring to the classroom relate to the science standards in order to plan for the unique students in your classroom.

Question	Ideas and Experiences
What everyday experiences or knowledge from other content areas might students bring to help them develop the targets from the SEP, DCI, and CCC?	
Where are students using and experiencing these ideas, practices, and concepts outside of the classroom?	
What questions may students have related to these ideas about how the world works?	
What scaffolding might my students need to fully understand this particular standard?	
What phenomena could capture students' interest and provide opportunities to use the science covered in this standard to understand the phenomena?	



Where are the science tools?



Toolkit is currently focused on high school science document is published

- *The HS unpacked standards are still being formatted*

Middle school unpacked standards are currently being reviewed

Elementary unpacked standards are currently being reviewed

- Will include academic vocabulary
- Will include ideas for integrating with ELA/math standards

2025 Science Professional Development



bit.ly/KSsciPD2025



English Language Arts



English Language Arts Team



Teacher Leader Consultants

Mary Lonker
Mary Williams
Effie Conway
Jennifer Hansen
LuAnn Fox

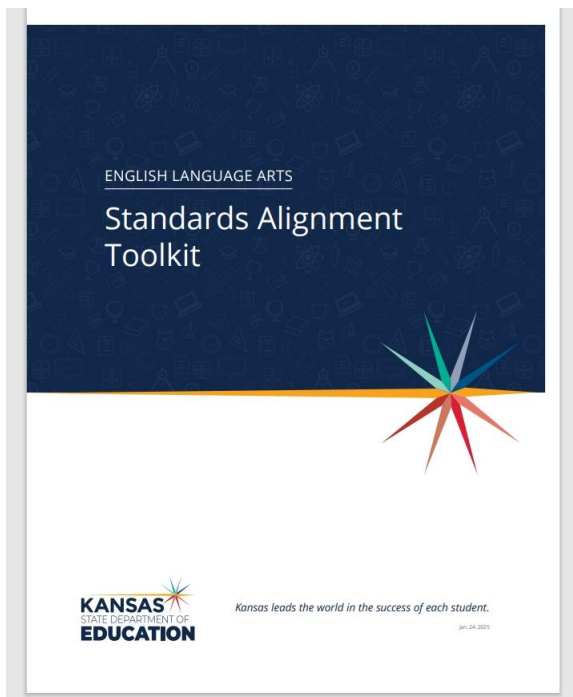


Field Educators

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ELA Standards Alignment Toolkit



- Vertical alignment of standards
- Horizontal alignment of standards
- Text complexity guidance
- Grammar Scaffolding Guidance
- KAP ELA Assessment Support
- The Kansas Writing Tenets
- Directed Reading Thinking Protocol



Highlights for Today



The quick links and bookmark page numbers

- a. Breaking Down the Standards / ELA Vertical Alignment (9)
 - i. To open the ELA Vertical Alignment document, click on the blue link on the bottom of page 9.
- b. Webb's Depth of Knowledge (11)
- c. Examples of Standards Alignment Documents Examples (12)
 - i. Standard Alignment Form for teachers(12)
- d. The Writing Tenets Explained (13-18)
- e. Text Complexity (22-26)

Vertical Alignment Document (9)



The vertical alignment standards outline...

- the progression of skills and knowledge across grade levels- identifies nuances between standards
- fosters a continuum of learning from one year to the next
- ensures foundational skills are built upon systematically

The horizontal alignment standards outline...

- skills and expectations by specific grade levels
- establish what students should know and be able to do within that grade throughout the school year

Webb's Depth of Knowledge ⁽¹¹⁾

Cognitive Engagement: Depth of Knowledge Level

KSDE Aligned with Kansas Assessments for ELA and Math

DOK 1 Recall and Reproduction

Recall a fact, term, definition, principle, or concept; **perform** a simple procedure.

DOK 2 Basic Application of Skills and Concepts

Apply conceptual knowledge; **use** provided information to **select appropriate** procedures for a task; **perform** two or more steps with decision points along the way; solve routine problems; organize or display data; **interpret** or use simple graphs.

DOK 3 Strategic Thinking

Apply reasoning, using evidence, and **developing** a plan to approach or **solve** abstract, complex, or nonroutine problems; **interpret** information and **provide** **justification** when more than one approach is possible.

DOK 4 Extended Thinking

Perform investigations or **apply concepts** and skills that require research and problem solving across content areas or multiple sources.

transfer
content
or process
to
different
setting

understanding
of skill;
repetition

Alignment Examples (12)

Standard Alignment Examples for Writing Text Types and Purposes are completed!

Links ready for you!



ELA STANDARDS ALIGNMENT TOOLKIT
STANDARDS ALIGNMENT

Standard Alignment Documents and Examples

In addition to analyzing standards by grade level, teachers and teams should also break down standards to best understand learning targets, learning progressions, who benefited and who did not benefit, as well as potential vocabulary students need to understand for each particular standard.

- [Standard Alignment: Instruction³](#)
- [Standard Alignment Form⁴](#)

The following documents can be used as an example of what teachers and schools should do when analyzing a standard. It demonstrates how to break down a standard for each grade level from kindergarten to grade 10 in the Writing Standard 1-3 covering Text Types and Purposes.

Standards 1-3 Writing Texts and Purposes examples:

- [Kindergarten⁵](#)
- [Grade 1⁶](#)
- [Grade 2⁷](#)
- [Grade 3⁸](#)
- [Grade 4⁹](#)
- [Grade 5¹⁰](#)
- [Grade 6¹¹](#)
- [Grade 7¹²](#)
- [Grade 8¹³](#)
- [Grades 9-10¹⁴](#)



KSDE Writing Tenets (13-18)

- Reading and writing go hand in hand as complementary skills that students need to master as they mature.
- While a focus centered on reading instruction is clearly warranted, the use of writing to cement and transfer the learning will yield a greater positive effect than reading alone.

“70% of the variation in reading and writing abilities are shared, meaning a large portion of skills needed for good reading are also necessary for good writing and vice versa.”

- Shanahan



KSDE Writing Tenets (13-18)

- Guide to bring back the focus on writing – writing across all curricular and content areas. Backed by research for the reading and writing connection in classrooms.
- Focuses on writing development from K-12.
- Need for explicit instruction at all grade levels.
- Professional development is available.



Text Complexity (22-26)

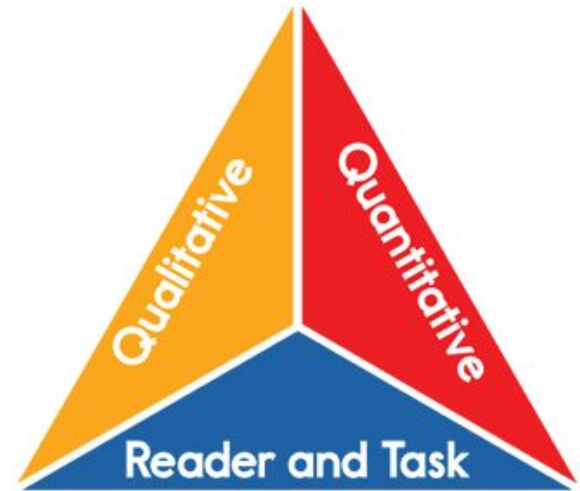
- To ensure students are reading text that is at or slightly above grade level, use both qualitative and quantitative measures.
- Use literary and informative rubrics as a guide to help determine if student text is challenging.
- Lexile is just one piece of the puzzle; remember it shouldn't be used as a student placement.



Complex text challenges students to do the following:

Reader and task

- ☐ What we ask students to DO with text information
 - ☐ Webb's DOK level 2 and 3
- ☐ Qualitative (22-23)
 - ☐ Informational vs. literary
 - ☐ Purpose/meaning
 - ☐ Structure
 - ☐ Language
 - ☐ Knowledge demands
- ☐ Quantitative
 - ☐ Lexile level, Coh-metrix



English Language Arts Team- ELA Standards Alignment

- ELA Interims and Mini-Tests
- Writing Tenets
- Incorporating vocabulary and morphology
- Directed Reading Thinking Activity Model/ Standards Alignment
- Aligned Grammar and Writing Techniques
- Text complexity Across Disciplines/ PLCs



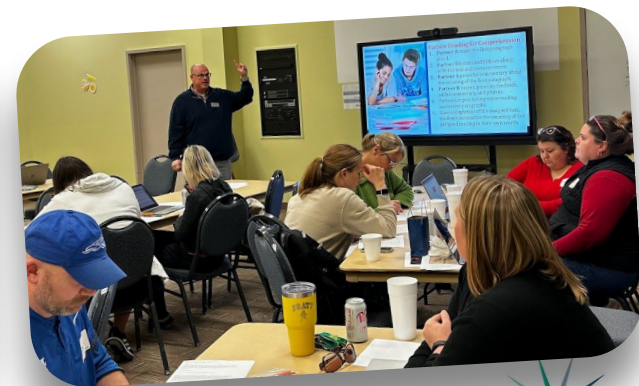


HGSS





HGSS Teacher Leader Team





Our Focus This Year



Standards Alignment

We clearly
communicate
what we want
our students to
know and be able
to do.
in Social
Studies.

HISTORY, GOVERNMENT AND SOCIAL STUDIES

Standards Alignment Toolkit



Kansas leads the world in the success of each student.

August 6, 2024

Instructional Guidance and Unit Planning

Educators have requested that example Unit Plans be placed in the Standards Alignment Toolkit.

If you would like to be a part of this and possibly have your example included in the toolkit, please download the template, fill it out with your example, and send it to Nate at nathan.mcalister@ksde.gov.

History, Government, and Social Studies (HGSS)

Content and Skills Planning Tool for Unit Planning

(The unit plan of study is designed to assist educators as they intentionally link the Kansas State Department of Education HGSS Standards with units in the classroom. **This is not meant to replace daily lesson planning.** Follow the steps below to complete this unit planning.)

STEP 1: Unit Content (*Identify the essential content covered in the unit. For example, The Vietnam Era, Bleeding Kansas, regions of Kansas, etc.*)

STEP 2: Focus Standard (*Select the HGSS standard and benchmarks that will inform the instruction for the unit. Your instruction may change depending on the focus standard selected. Use the HGSS benchmark sentence starters to aid in building your unit.*)

1. The student will recognize and evaluate ...
2. The student will analyze the context and draw conclusions about ...
3. The student will investigate and connect _____ with contemporary issues.
4. The student will use their understanding of _____ to make a claim or advance a thesis using evidence and argument.

STEP 3: HGSS Supporting Standard(s) (*Identify which HGSS standards will best support the unit. Not all remaining standards will be utilized.*)

STEP 4: Compelling Question(s) (*As compelling questions typically focus on a narrow amount of content, you may have several compelling questions depending on the scope of the unit. Refer to page 7 of the Classroom-Based Assessment Toolkit for compelling question ideas.*)

STEP 5: Assessment Connections: (*How does this unit prepare teachers and students for a classroom-based assessment?*)



Unit Planning Tool

Step 1: Unit of Study: _____

(Identify the essential content covered in the unit. For example, The Vietnam Era, Bleeding Kansas, Regions of Kansas, etc.)

Step 2: HGSS Focus Standard _____

(Select the HGSS Standard and Benchmarks that will inform the instruction for the Unit. Your instruction may change depending on the Focus Standard selected. Use the HGSS Benchmark sentence starters to aid in building your unit.)

1. The student will recognize and evaluate...
2. The student will analyze the context and draw conclusions about...
3. The student will investigate and connect ____ with contemporary issues.
4. The student will use their understanding of ____ to make a claim or advance a thesis using evidence and argument.

HGSS Standards:

1. **Choices have consequences.**
2. **Individuals have rights and responsibilities.**
3. **Societies are shaped by identities, beliefs and practices of individuals and groups.**
4. **Societies experience continuity and change over time.**
5. **Relationships among people, places, ideas and environments are dynamic.**



Unit Planning Tool

Step 3: HGSS Supporting Standard(s):

(Identify which HGSS Standards will best support the Unit. Not all remaining standards will be utilized.)

Step 4: Compelling question(s)

(As compelling questions typically focus on a narrow amount of content, you may have several compelling questions depending on the scope of the unit. Refer to page 7 of the Classroom Based Assessment Toolkit.)

Step 5: Assessment Connection

(How does this unit prepare teachers and students for a Classroom Based Assessment?)



Unit Planning Tool

KNOW STEP 6: Identify social studies content concepts (big ideas) covered in the unit. <i>(What students will know.)</i>	DO STEP 7: Identify social studies disciplinary skills and literacies embedded in the unit and the DOK levels 1-4 for each literacy and skill. <i>(What students will be able to do.)</i>	RESOURCES STEP 8: Identify social studies sources <i>(primary and secondary)</i>

Big Ideas: Content 

Skills Depth of Knowledge 

Resources Need 



KU Indigenous Education Partnership



2025 Summer IndigED Seminar

K-12 Teacher Professional Development

June 8-13

ISP 804 (Special Topics Course) Improving
Indigenous Studies Content Delivery in
Kansas Classrooms

For more information:
indigenous@ku.edu

- 3-hr Graduate Course
- 1 week on KU campus
- Room, Board, and Tuition Paid!
(Excluding Fees)

- Field Trips
- Indigenous Studies Presentations
- Unit/Lesson Workshopping



Applications Open Through April 28
https://kusurvey.ca1.qualtrics.com/jfe/form/SV_OrigncUSb6nwlk
**Note: Official KU Application will be a secondary
process following this initial application/selection process**
Limited Spaces Available!



Service Center Partnerships



SW Plains Regional Service Center

Site-based learning for teachers in Western Kansas built around the Four Fundamentals



ESSDACK

3-Day Summer Symposiums for teachers built around the Four Fundamentals



Greenbush Education Service Center

Multiple Summer Training Opportunities for K-12 teachers built around the Four Fundamentals



**More opportunities
to come.
Don't miss out!**



**HGSS Update
Newsletter!!**

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