Proclamation 2024 Science Publisher Webinar

7/27/2022

Objective

To provide science-specific *Proclamation 2024* information so publishers can make informed decisions about participating in the Texas State Board of Education's review and adoption process and to provide the next steps in the process.

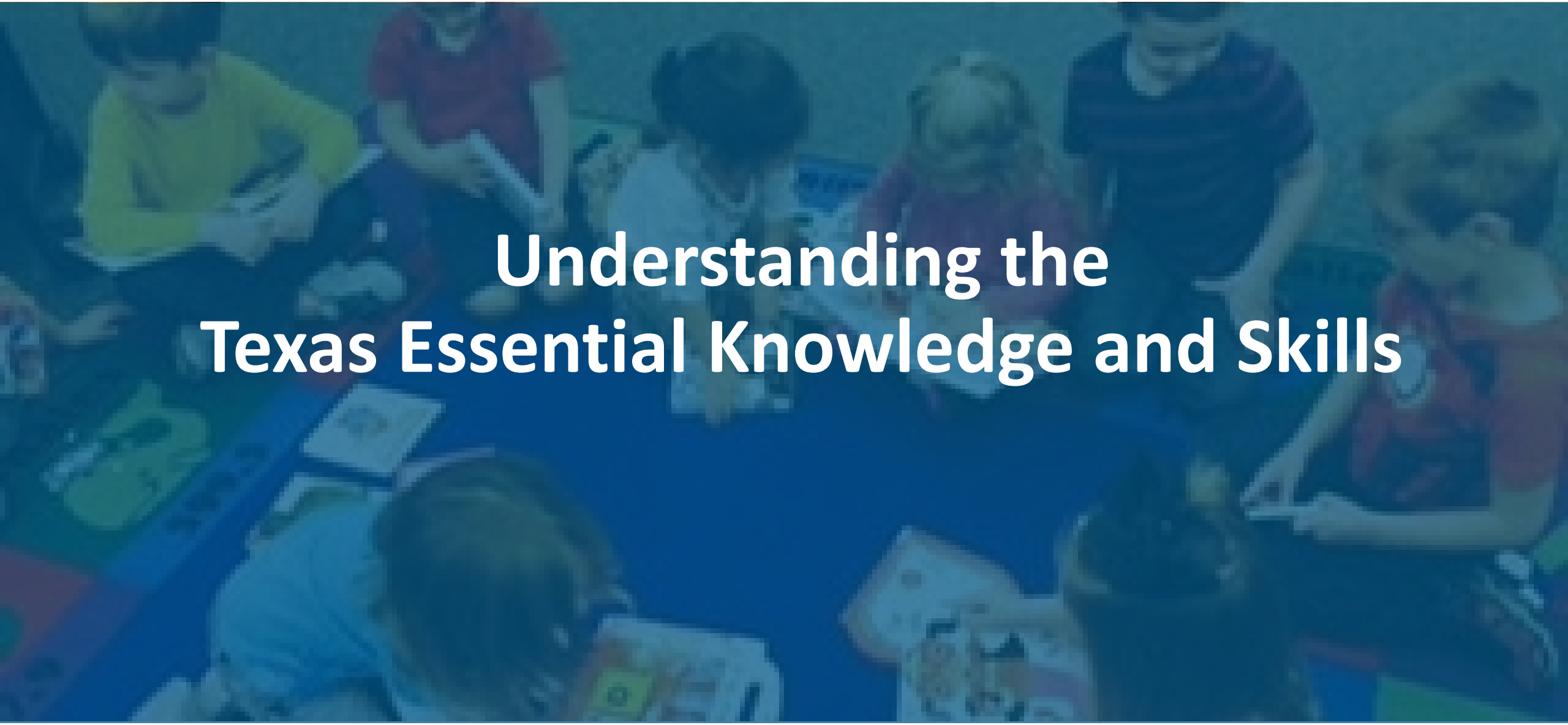
Agenda

- Science TEKS
- Texas Resource Review (TRR)
- STAAR Science Redesign and TEKS Implementation Update
- Next Steps

Texas Education Agency

Proclamation 2024 - Science

Curriculum Standards and Student Support



Understanding the Texas Essential Knowledge and Skills

Texas Essential Knowledge and Skills (TEKS)

- The Texas Essential Knowledge and Skills, or TEKS, identify what students should know and be able to do by the end of each course or grade level.
- State review panels are required to evaluate all instructional materials submitted for review to determine if the TEKS are covered in the instructional materials intended for student and teacher use.

Texas Essential Knowledge and Skills (TEKS)

Texas Essential Knowledge and Skills by Chapter

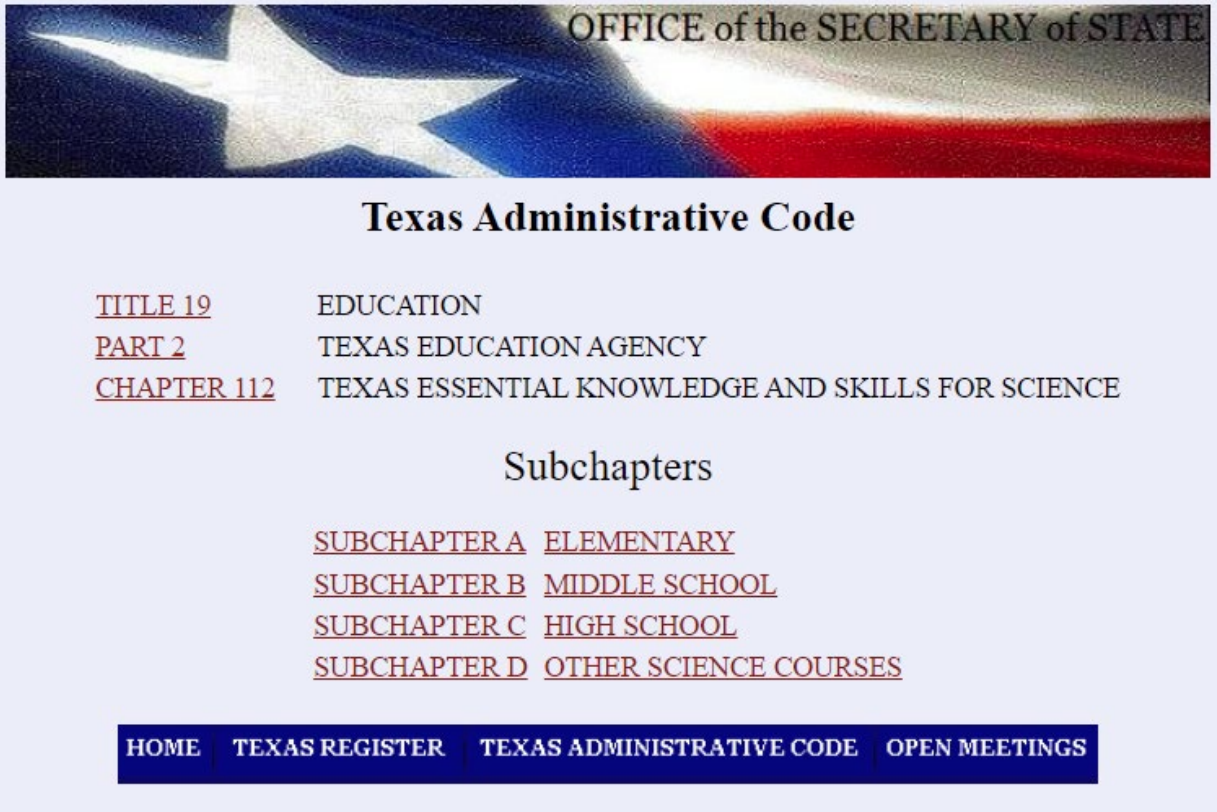
The Texas Essential Knowledge and Skills (TEKS) are listed below in two different formats, a web-based version of the standards and a PDF version of the standards. Click on the link below to access the web version (Web) of the standards or a PDF version (PDF) of the standards. Please note that the web-version of the standards may contain more than one page.

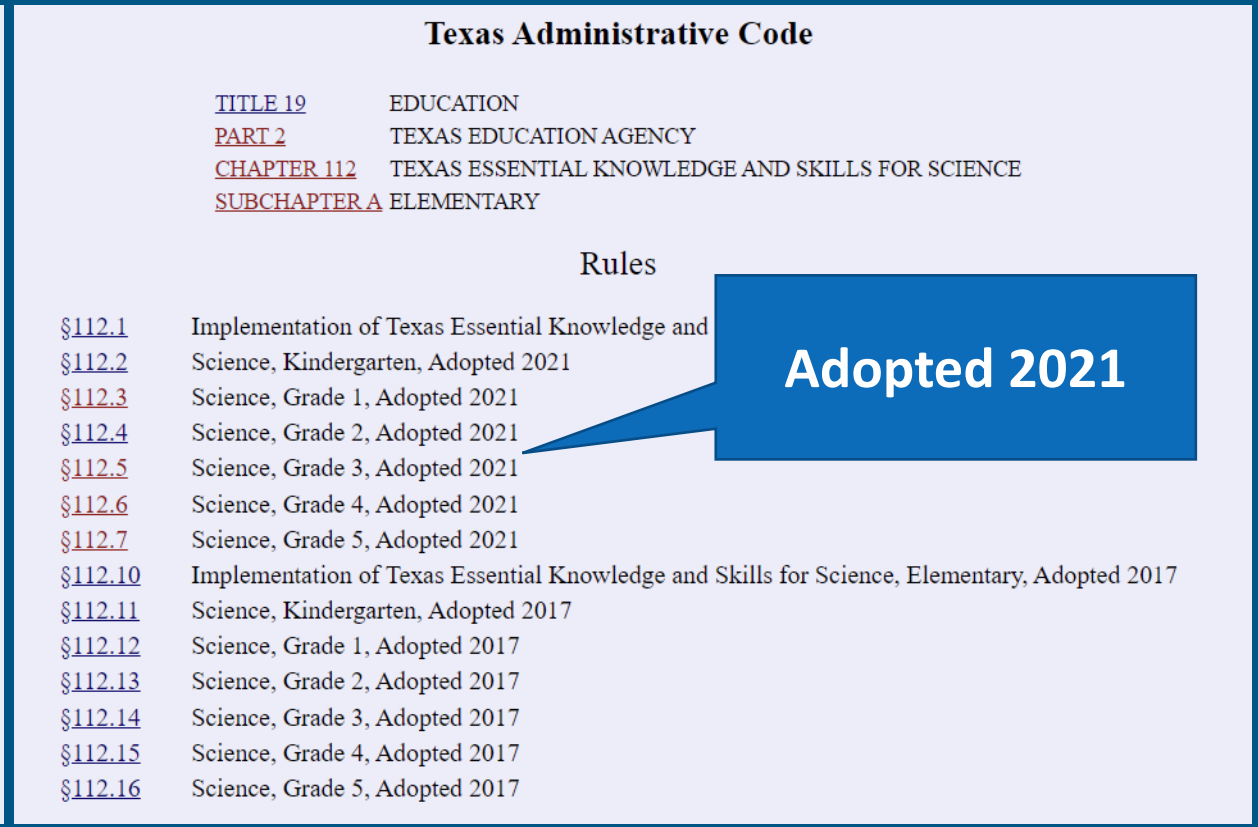
Chapter 110. English Language Arts and Reading	Web	PDF
Chapter 111. Mathematics	Web	PDF
Chapter 112. Science	Web	PDF
[illegible]	Web	PDF
Chapter 114. Languages Other Than English	Web	PDF
Chapter 115. Health Education	Web	PDF
Chapter 116. Physical Education	Web	PDF
Chapter 117. Fine Arts	Web	PDF

Where to find the new TEKS

Texas Essential Knowledge and Skills (TEKS)

Where to find the new TEKS?





https://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=4&ti=19&pt=2&ch=112

Texas Essential Knowledge and Skills (TEKS)

TEKS Structure

- The **introduction** to the TEKS provide high-level information about the subject area, a description of each course or grade level, and key information about the course/grade level.
- The **standards** consist of—
  - **knowledge and skill statements**: broad statements that summarize what students should know/be able to do; end with "The student is expected to."
  - **student expectations**: specific statements that describe how students will demonstrate their learning; directly connected to knowledge and skills statement; always begin with a verb

Texas Essential Knowledge and Skills (TEKS)

K-12 Science Standards

(8) Force, motion, and energy. The student knows that energy is everywhere and can be observed in cycles, patterns, and systems. **The student is expected to:**

(A) identify everyday examples of energy, including light, sound, thermal, and mechanical; a

(B) plan and conduct investigations that demonstrate how the speed of an object is related to its m hanical energy.

(9) Earth and space. The student knows there are recognizable objects and patterns in Earth's solar system. **Th student is expected to:**

(A) construct models and explain the orbits of the Sun, Earth, and Moon in relation to each other; and

(identify the order of the pla ts in Earth's solar system in relation to the Sun.

Strands

Student expectations

Knowledge and skills statements

Texas Essential Knowledge and Skills (TEKS)

TEKS Terminology

- *and* — must be included
- *between/among* — include all
- *or* — use one or the other (both not necessary)
- *including* — must include
- *such as* — only examples

Texas Education Agency

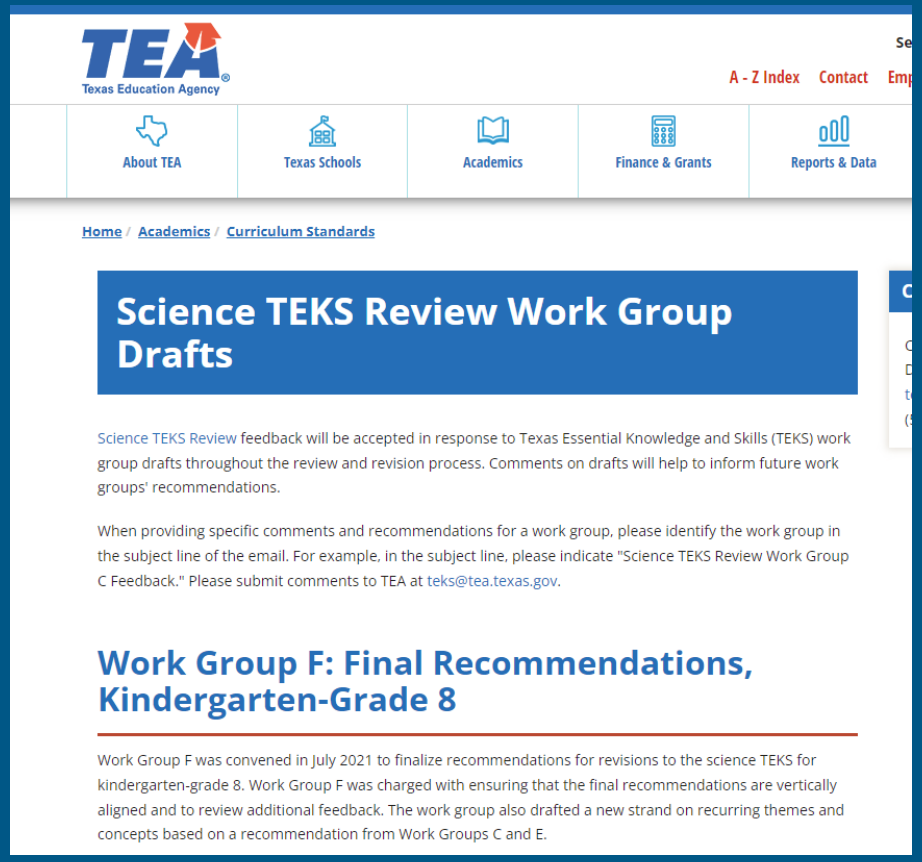
TEKS Development & Design

TEKS Development: Work Group Resources

- **A Framework for K–12 Science Education**
- **Other states' standards**
  - Florida
  - North Carolina
  - Ohio
  - Virginia
- **Texas College and Career Readiness Standards**

TEKS Development: Work Group Recommendations

Documents from the SBOE's TEKS review work groups are available on the Science TEKS Review Work Group webpage.



https://tea.texas.gov/academics/curriculum-standards/teks-review/science-teks-review-work-group-drafts

TEKS Development: Work Group Recommendations

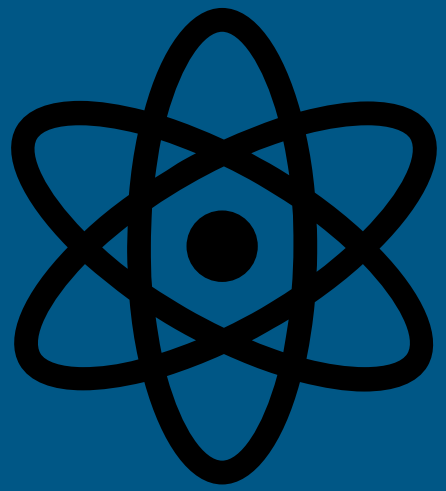
The TEKS review work groups included rationales, suggestions, and other information in their TEKS recommendations charts.

Science TEKS Review Draft Recommendations

Kindergarten	Grade 1	Grade 2	Work Group Comments/Rationale
7. Energy. The student knows that there are multiple phenomena in everyday life that come from the transfer of energy from place to place and between objects. ~~The student knows that energy exists in many forms and is a part of their everyday life.~~ **The student is expected to:**	**7. Energy.** The student knows that there are multiple phenomena in everyday life that come from the transfer of energy from place to place and between objects. ~~The student knows that energy exists in many forms and is a part of their everyday life.~~ **The student is expected to:**	**7. Energy.** The student knows that there are multiple phenomena in everyday life that come from the transfer of energy from place to place and between objects. ~~The student knows that energy exists in many forms and is a part of their everyday life.~~ **The student is expected to:**	**Framework (p. 120-122) states that "energy" shouldn't be taught in K-2 but the workgroup felt it was important to still introduce the energy phenomena in this grade band; there are no separate "forms" of energy (e.g. sound energy, light energy)** **Include rationale in TEKS Guide.** **Organization feedback suggests a strand title change to "Phenomena" (recurring themes and concepts) but workgroup felt that keeping "Energy" aligned better across all grade levels.** **This workgroup recommends that "transfer of energy" be addressed in SEs at a later grade band.**
~~energy~~ ~~enses;~~	~~1.7.A identify and explain how different forms of energy, including light, thermal, and sound, are important to everyday life;~~	~~2.7.A compare different forms of energy including light, thermal, and sound energy;~~	
~~een when a~~ ~~of different~~ ~~and~~	1.7.A~~B~~ investigate and describe applications of heat ~~thermal energy~~ in everyday life such as cooking food or using a hair dryer; and	2.7.A~~B~~ demonstrate and explain that sound ~~energy~~ is made by vibrating matter and that sound ~~energy~~ can make matter vibrate; and	in addition to the comment above re: "energy", changing to "heat" keeps the vocabulary consistent between this grade band and others.
~~K.7.BC identify and demonstrate that light travels through~~ some objects and is blocked by other objects, creating shadows.	1.7.B~~C~~ describe how some changes caused by heat ~~thermal energy~~ may be reversed, such as melting butter and other changes cannot be reversed, such as cooking an egg or baking a cake.	2.7.B~~C~~ explain how different levels of sound ~~energy~~ are used in everyday life such as a whisper in a classroom or a fire alarm.	1.7.B TEKS Guide: define the upper boundary; teacher should not delve into chemical change
		2.7.C design and build a device using tools and materials that uses sound to solve the problem of communicating over a distance.	new 2.7.C added at the suggestion of organizational feedback. Workgroup felt that examples should be relegated to TEKS guide: such as a light source to send signals, paper cup and string "telephones" or a pattern of drum beats.

Overarching Changes in the 2021 Science TEKS

- Integration of scientific and engineering practices within content
- Introduction of engineering principles, practices, and processes
- Duplicated content has been removed between elementary grade levels
- Reorganization of content across middle school to spiral depth and complexity
- Integration of recurring themes and concepts with science content, K–8
- High school courses have moved content down to middle school



Key Changes in the 2021 Science TEKS

Kindergarten

Added:

- Energy has been split between grade levels
  - Light energy is taught in K
- Animal structures and how they interact with their environment

Removed:

- Patterns of movement

Moved:

- Natural sources of water to 1st grade

Key Changes in the 2021 Science TEKS

1st Grade

Added:

- Parts of a system
- The foundational concept that pushes and pulls change speed and direction of objects
- Heat energy is covered in 1st grade
- Water erosion

Removed:

- Removed the concept of wind
- Removed patterns of movement

Moved:

- Fresh and saltwater from 2nd grade
- Weather's impact on daily choices from 2nd grade
- Parts of a plant to 2nd grade

Key Changes in the 2021 Science TEKS

2nd Grade

Added:

- Foundational knowledge that pushes and pulls can cause change to an object's shape
- Pushes and pulls change an object's motion objects motion
- Sound energy is covered in 2nd grade
- Wind and water erosion
- Severe weather events
- Natural methods of seed dispersal

Moved:

- Hibernation, migration, and dormancy to 3rd grade

Key Changes in the 2021 Science TEKS

3rd Grade

Added:

- The concept that materials can be combined to create or modify objects
- Foundational knowledge of fields (magnetic and gravity)
- Foundational knowledge of the relationship between speed and mechanical energy
- Natural resource management
- Texas fossils as evidence of past living organisms and environments

Moved:

- Structure and function of plants to 4th grade

Key Changes in the 2021 Science TEKS

4th Grade

Added:

- Foundational knowledge for the conservation of matter in mixtures
- Transfer of energy
- Natural resource management
- Physical properties of rocks that allow natural resources to be stored
- Foundational knowledge for cycling of matter

Removed:

- Learned behaviors was moved to 5th grade
- Shadows moved to 5th grade
- Volume moved to 5th grade

Moved:

- Climate from 5th grade
- Advantages and disadvantages of resources from 6th grade
- Evidence of past living organisms and environments from 5th grade

Key Changes in the 2021 Science TEKS

5th Grade

Added:

- Foundational knowledge for the conservation of matter in solutions
- Foundational knowledge that matter is made up of particles
- Energy transformations
- The concept that light can be absorbed
- The concept of healthy ecosystems and that human's impact can be positive and negative

Removed:

- Physical characteristics of the Earth, Sun, and Moon

Moved:

- Animal behaviors to 4th grade
- Equal and unequal forces on an object's motion from 6th grade

Key Changes in the 2021 Science TEKS

6th Grade

Added:

- Matter is made up of atoms
- Comparison of solids, liquids, and gases in terms of their structure, shape, volume, and kinetic energy of atoms and molecules
- Homogeneous and heterogeneous mixtures
- Rare earth elements from the periodic table
- Applied and normal forces
- Conservation of energy
- Gravitational, potential, and elastic potential energy
- Transverse and longitudinal waves
- Biosphere, hydrosphere, atmosphere, and geosphere
- Natural resource management

Moved:

- Tides from 8th grade
- Population diversity from 7th grade
- Biological relationships (predatory, competitive, and symbiotic) from biology
- Cell theory from 7th grade
- The concept of net force from 8th grade
- Newton's Laws of Motion from 8th grade
- Seasons from 8th grade

Removed:

- Taxonomy classification moved to 7th grade
- Elements and Compounds moved to 7th grade
- Speed and Motion graphs to 7th grade

Key Changes in the 2021 Science TEKS

7th Grade

Added:

- Aqueous solutions
- Rate of dissolution of solid solutes in aqueous solutions
- Newton's First Law
- Thermal energy transfer in and out of a system
- Relationship between temperature and kinetic energy
- Human dependence and influence on ocean systems

Removed:

- Photosynthesis
- Forces that affect motion in organisms
- Manned space exploration
- Weathering, erosion, and deposition
- Impact of catastrophic events on the ecosystem

Moved:

- Chemical formulas moved from 6th grade
- Force and motion relationships moved from 8th grade
- Speed and velocity moved from 8th grade
- Physical properties, locations, and movements of the Sun, planets, moons, meteors, asteroids, comets, Kuiper belt, and Oort cloud moved from 6th grade
- Law of universal gravitation from 6th grade
- Plate Techtonics moved from 6th and 8th grade
- The concept of available energy decreases in successive trophic levels moved from Biology
- Ecosystems are sustained by the continuous flow of energy and the recycling of matter and nutrients within the biosphere moved from Biology
- Kingdoms moved from Biology
- Biodiversity moved to 8th grade

Key Changes in the 2021 Science TEKS

8th Grade

Added:

- Conservation of energy in chemical reactions
- Chemical reactions
- Cohesion, adhesion, and surface tension in water
- Properties of acids and bases
- Energy is transferred through waves
- Natural events and human activity can impact global climate

Moved:

- Carbon cycle moved from Biology
- Ecological succession moved from Biology
- Function of plant and animal cells moved from 6th and 7th grade
- Concept of genetic material moved from 7th grade

Removed:

- Topographic maps and satellite views to identify land and erosional features
- Sun
- Tides
- Acceleration
- Structure of an atom

Key Changes in the 2021 Science TEKS

Integrated Physics and Chemistry

Added:

- Velocity
- Impulse
- The four fundamental forces: gravitation, electromagnetic, nuclear forces, and mass-energy equivalency
- How physical and chemical properties of substances are related to their usage in everyday life
- Electron transition in energy levels

Removed:

- Changes of state as it relates to the arrangement of particles of matter and energy transfer
- Physical and chemical properties of elements and compounds
- Kinetic energy
- Potential energy
- Energy transformations of renewable and nonrenewable resources
- Displacement and speed

Key Changes in the 2021 Science TEKS

Biology

Removed:

- Food chains, food webs, and the energy pyramid
- The role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems
- Components that make up the genetic code are common to all organisms

Key Changes in the 2021 Science TEKS

Chemistry

Added:

- Properties of ionic, covalent, and metallic substances in terms of intramolecular and intermolecular forces
- Four Laws of Thermodynamics
- Applications of nuclear phenomena

Moved:

- Properties of elements based on valence electrons patterns using the Periodic Table moved from 8th grade
- Structure of atoms and ions, including the masses, electrical charges, and locations of protons and neutrons in the nucleus and electrons in the electron cloud moved from 8th grade

Removed:

- Law of conservation of energy
- Forms of energy including kinetic, potential, chemical, and thermal energies
- Calculations involving heat, mass, temperature change, and specific heat
- Metallic bonding and metallic properties
- Extensive and intensive properties

Key Changes in the 2021 Science TEKS

Physics

Added:

- Scalar and vector quantities related to one- and two-dimensional motion and combine vectors using both graphical vector addition and the Pythagorean theorem
- Equilibrium
- Calculate the effect of forces on objects, including tension, friction, normal, gravity, centripetal, and applied forces
- Conservation of charge
- Momentum qualitatively in inelastic and elastic collisions
- Harmonic motion
- Standing waves, polarization, and superposition
- Malus's Law
- Heisenberg uncertainty principle

Removed:

- Atomic and nuclear phenomena
- Calculating and describe the applications of mass-energy equivalence
- Oscillatory motion
- Calculating the mechanical energy of and power generated within
- Gravitational forces
- Electromagnetic forces

TEKS Design

K–12 Science Introduction

(a) Introduction.

(1) In Kindergarten through Grade 5 Science, content is organized into recurring strands. The concepts within each grade level build on prior knowledge, prepare students for the next grade level, and establish a foundation in science. In Grade 1, the following concepts will be addressed in each strand.

(A) Scientific and engineering practices. Scientific inquiry is the planned and deliberate investigation of t natural world using scientific and engineering practices. Scientific methods of investigation are descri correlative, comparative, or experimental. The method chosen should be appropriate to the grade level and question being asked. Student learning for different types of investigations includes descriptive investigations, which have no hypothesis that tentatively answers the research question and involve collecting data and recording observations without making comparisons; correlative and comparative investigations, which have a hypothesis that predicts a relationship and involve collecting data, measuring variables relevant to the hypothesis that are manipulated, and comparing results; and experimental investigations, which involve processes similar to comparative investigations but in which a hypothesis can be tested by comparing a treatment with a control.

(i) Scientific practices. Students ask questions, plan and conduct investigations to answer questions, a explain phenomena using appropriate tools and models.

(ii) Engineering practices. Students identify problems and design solutions using appropriate tools and models.

Course/grade level description

Description of strands

Description of scientific and engineering practices

TEKS Design

K–12 Science Introductions

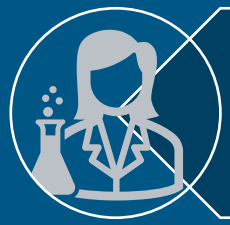
Topics addressed in the K–12 science introductions

- Description of grade level and strands
- Description of scientific and engineering practices
- Recommended time for classroom and outdoor investigations (K–5)
- Description of the nature of science
- Information on scientific inquiry
- Information on science and social ethics
- Description of recurring themes and concepts*

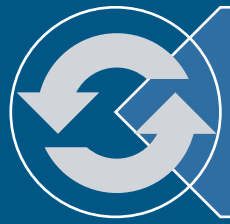
* K–8 The introduction contains a brief description that is expanded further in the knowledge & skills.
9–12 The introduction is the only place where the recurring themes and concepts appear in high school.

TEKS Design

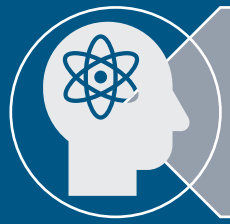
The Standards: Knowledge & Skills



Scientific & Engineering Practices
(K–12)



Recurring Themes & Concepts
(K–8)



Science Content
(K–12)

TEKS Design

The Standards: K–8* Science Strands

- Scientific and Engineering Practices
- Recurring Themes and Concepts
- Matter and Energy
- Force, Motion, and Energy
- Earth and Space
- Organisms and Environments

* High school only has two strands: scientific processes and scientific concepts

TEKS Design

Scientific & Engineering Practices

- Conducting investigations
- Analyzing & interpreting data
- Communicating evidence-based explanations
- Interactions between science and society

Scientific and engineering practices are located in knowledge and skill statements 1 – 4.

TEKS Design

Science and Engineering Practices should be embedded throughout the concept standards.

Key Changes in Practice:

- Teaching science through phenomena—an observable scientific event
- Modeling phenomena and engineering prototypes
- Students engage in engineering practices including the engineering design process
- Design solutions to engineering problems
- Communicate through evidence-based arguments
- Innovation
- Science, Technology, Engineering, and Mathematics (STEM) careers

Scientific and engineering practices are located in knowledge and skill statements 1 – 4.

TEKS Design

Recurring Themes & Concepts

1. Patterns
2. Cause-and-effect relationships
3. Scale, proportion, and quantity in systems
4. Model the interdependence and parts of a system
5. Flow of energy and cycling of matter through systems
6. Relationship between structure and function
7. Stability and change

TEKS Design

Recurring Themes & Concepts

- Recurring themes and concepts provide a framework that allows students to make connections across science disciplines.
- The recurring themes and concepts are very similar (though not identical) in K–8. In high school, the recurring themes are simplified.
- In K-8 the recurring themes and concepts are addressed both as a stand-alone strand (KS 5) and embedded in SEs. In high school, the recurring themes are embedded into the content standards.

Texas Education Agency

Stand-alone recurring themes and practices

Texas Education Agency

Recurring themes and concepts. The student understands that recurring themes and concepts provide a framework for making connections across disciplines. The student is expected to:

Kinder–Grade 2

(A) identify and use **patterns** to describe phenomena or design solutions;

(B) investigate and predict **cause-and-effect relationships** in science;

(C) describe the properties of objects in terms of **relative size (scale) and relative quantity**;

(D) examine the **parts of a whole** to define or model a system;

(E) identify **forms of energy and properties of matter**;

(F) describe the **relationship between structure and function** of objects, organisms, and systems; and

(G) describe how factors or conditions can cause objects, organisms, and systems to **either change or stay the same**.

Grades 3–5

(A) identify and use **patterns** to explain scientific phenomena or to design solutions;

(B) identify and investigate **cause-and-effect relationships** to explain scientific phenomena or analyze problems;

(C) use **scale, proportion, and quantity** to describe, compare, or model different systems;

(D) examine and model **the parts of a system** and their interdependence in the function of the system;

(E) investigate **how energy flows and matter cycles** through systems and how matter is conserved;

(F) explain the **relationship between the structure and function** of objects, organisms, and systems; and

(G) explain how factors or conditions impact **stability and change** in objects, organisms, and systems.

Grades 6–8

(A) identify and apply **patterns** to understand and connect scientific phenomena or to design solutions;

(B) identify and **investigate cause-and-effect relationships** to explain scientific phenomena or analyze problems;

(C) analyze how differences in **scale, proportion, or quantity** affect a system's structure or performance;

(D) examine and model the **parts of a system** and their interdependence in the function of the system;

(E) analyze and explain **how energy flows and matter cycles** through systems and how energy and matter are conserved through a variety of systems;

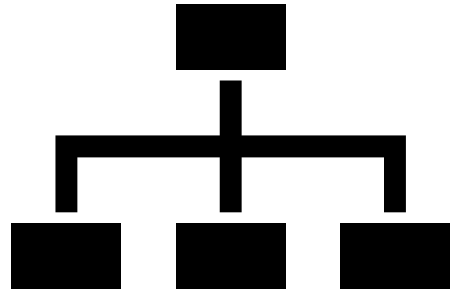
(F) analyze and explain the complementary **relationship between structure and function** of objects, organisms, and systems; and

(G) analyze and explain how factors or conditions impact **stability and change** in objects, organisms, and systems.

TEKS Breakouts

Breakouts — component parts of a student expectation; used to determine coverage of an SE

A single SE might have only one breakout or could have multiple breakouts.



TEKS Breakouts

Knowledge and Skills Statement

(10) Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to:

Student Expectation

(C) observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds

TEKS Breakouts

Knowledge and Skills Statement	Student Expectation	Breakout
Organisms and environments. The student knows that there is a relationship between organisms and the environment. The student is expected to:	(C) observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds	(i) **observe** the role of ecological succession
		(ii) **record** the role of ecological succession
		(iii) **describe** the role of ecological succession

Texas Essential Knowledge and Skills (TEKS)

TEKS Terminology

- *and* — must be included
- *between/among* — include all
- *or* — use one or the other (both not necessary)
- *including* — must include
- *such as* — only examples

TEKS Breakouts

Knowledge and Skills Statement

(12) Science concepts. The student knows that interdependence and interactions occur within an environmental system. The student is expected to:

Student Expectation

(C) analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids;

TEKS Breakouts

Knowledge and Skills Statement	Student Expectation	Breakout
Science concepts. The student knows that interdependence and interactions occur within an environmental system. The student is expected to:	(C) analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids	(i) analyze the flow of **matter** through trophic levels using various models, **including food chains**
		(ii) analyze the flow of **matter** through trophic levels using various models, **including food webs**
		(iii) analyze the flow of **matter** through trophic levels using various models, **including ecological pyramids**
		(iv) analyze the flow of **energy** through trophic levels using various models, **including food chains**
		(v) analyze the flow of **energy** through trophic levels using various models, **including food webs**
		(vi) analyze the flow of **energy** through trophic levels using various models, **including ecological pyramids**

Upcoming Resources

Resources

Upcoming Resources to Support the 2021 Science TEKS

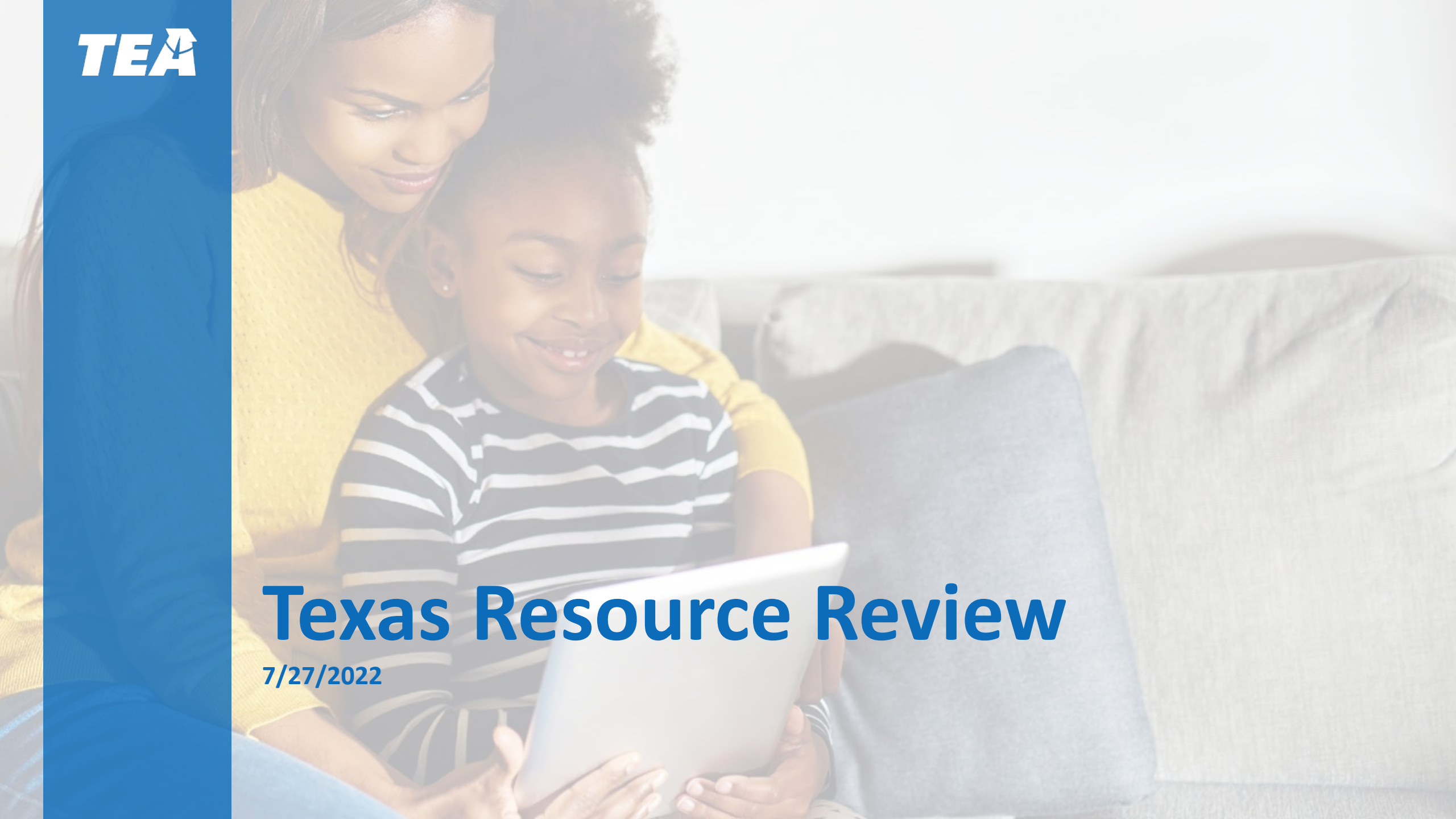
- Breakouts – under review
- Vertical alignment – under review
- Crosswalk – under review
- K-8 Glossary – under review
- 9-12 Glossary – in process
- Detailed Explanations
- Assessment samples – linked to Assessment
- Research

TEKS Crosswalk (2017 to 2021)

2021 KS/SE	2021 Text	2017 KS/SE	2017 Text	Content Deleted or Removed from Grade Level
SCIENCE.8.1	Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:	8.1	Scientific investigation and reasoning. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:	~~8.1B practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.~~
SCIENCE.8.1.A	ask questions and define problems based on observations or information from text, phenomena, models, or investigations;	8.2A	plan and implement comparative and descriptive investigations by making observations, asking well defined questions, and using appropriate equipment and technology;	
SCIENCE.8.1.B	use scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;	8.2B	design and implement experimental investigations by making observations, asking well defined questions, formulating testable hypotheses, and using appropriate equipment and technology;	
SCIENCE.8.1.C	use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;	8.1A	demonstrate safe practices during laboratory and field investigations as outlined in Texas Education Agency-approved safety standards; and	
	use appropriate tools such as graduated cylinders, metric rulers, periodic tables, balances, scales, thermometers,		use appropriate tools, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, balances	~~8.4 Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:~~

TEKS Glossary

112.5.b.5.B	SCIENCE.3.5.B	identify and investigate **cause-and-effect relationships** to explain scientific **phenomena** or analyze problems;	cause-and-effect relationships	A type of relationship between two or more variables or phenomena whereby the first leads to the second.
			phenomena	An observable fact or event, known through the senses, and susceptible to scientific description and explanation.
112.5.b.5.C	SCIENCE.3.5.C	use **scale, proportion**, and **quantity** to describe, compare, or model different **systems**;	scale	A ratio between two sets of measurements.
			proportion	An equation showing two ratios that are equivalent.
			quantity	A count of a set of objects or a measurement of a substance.
			systems	A regularly interacting or interdependent group of items forming a unified whole, such as a solar system, a body system, a highway system, a computer system, a mechanical system, a river system, or a taxonomic system.
112.5.b.5.D	SCIENCE.3.5.D	examine and **model** the parts of a **system** and their interdependence in the function of the system;	model	Both scientists and engineers use models. Physical Models show how things look or work in the real world. Conceptual models represent relationships and describe how things work or fit together. Mathematical models use mathematical equations, theories, formulas, and proofs. Simulations allow for the control of variables and mimic real-world processes. Examples of models include sketches, diagrams, mathematical relationships, simulations, and physical models and are used to make predictions about the behavior of a system. Science often involves the construction and use of a wide variety of models and simulations to help develop explanations about natural phenomena. Models make it possible to go beyond observables and imagine a world not yet seen. Models enable predictions of the form "if . . . then . . . therefore" to be made to test hypothetical explanations.



Texas Resource Review

7/27/2022

Meet your Facilitator

Amie Williams, Director of Materials Review
Instructional Materials & Implementation
amie.williams@tea.texas.gov

Objectives

- Understand the significance of TRR
- Outline the Texas Resource Review (TRR) process
- Identify where to find the TRR resources on the website
- Learn about feedback opportunities

What is the TRR and why is it important?

Instructional Materials Matter: A growing body of research points to the positive impact high-quality instructional materials have on student learning.

For example, high-quality materials:

Allow students to engage deeper and more meaningfully with standards[1]

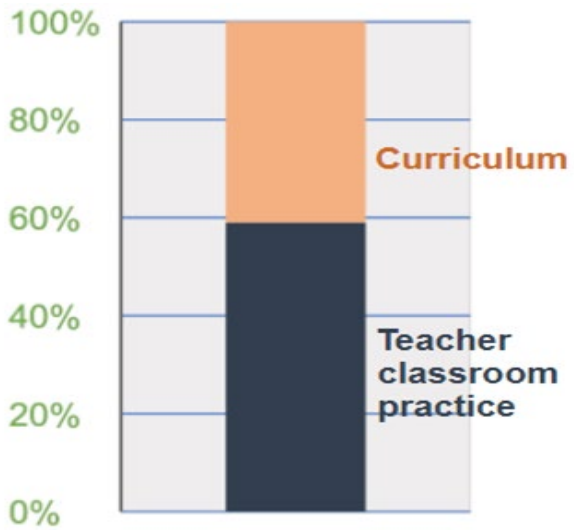
Lead to additional learning for students[2]

Create larger, more cost-effective impact on academic outcomes than many interventions[3]

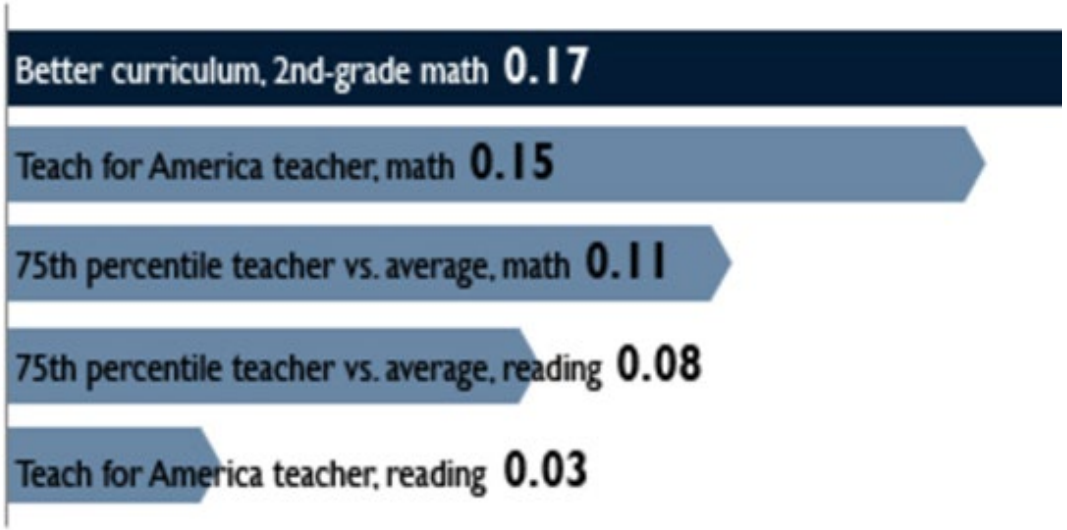
1) “Curriculum Research: What We Know and Where We Need to Go” (Washington: StandardsWork, 2018); 2) Boser, Ulrich, Chingos, Matthew, & Straus, Chelsea. (2015, October). The Hidden Value of Curriculum Reform: Do States and Districts Receive the Most Bang for Their Curriculum Buck? Center for American Progress. 2) Whitehurst, Grover. (2009, October). Don’t Forget Curriculum. Brookings Institute. 2) Polikoff, Morgan, Koedel, Cory, Li, Diyi, Hardaway, Tenice, & Wrabel, Stephani. (2016, September). Mathematics Curriculum Effects on Student Achievement in California. 2) Bjorklund-Young. (2016, April). High-Quality Curricula: A Cost-Effective Way to Increase Student Learning. Johns Hopkins Institute for Education Policy. 3) Kane, T. J., Owens, A. M., Marinell, W. H., Thal, D. R. C., & Staiger, D. O. (2016, February). Teaching Higher. Harvard University Center for Education Policy Research.

Research demonstrates high quality instructional materials matter to student outcomes.

Students in an integrated improvement model gained an estimated **four months of learning** over two years relative to students in the comparison group, 41% of which was **attributable to instructional materials.**

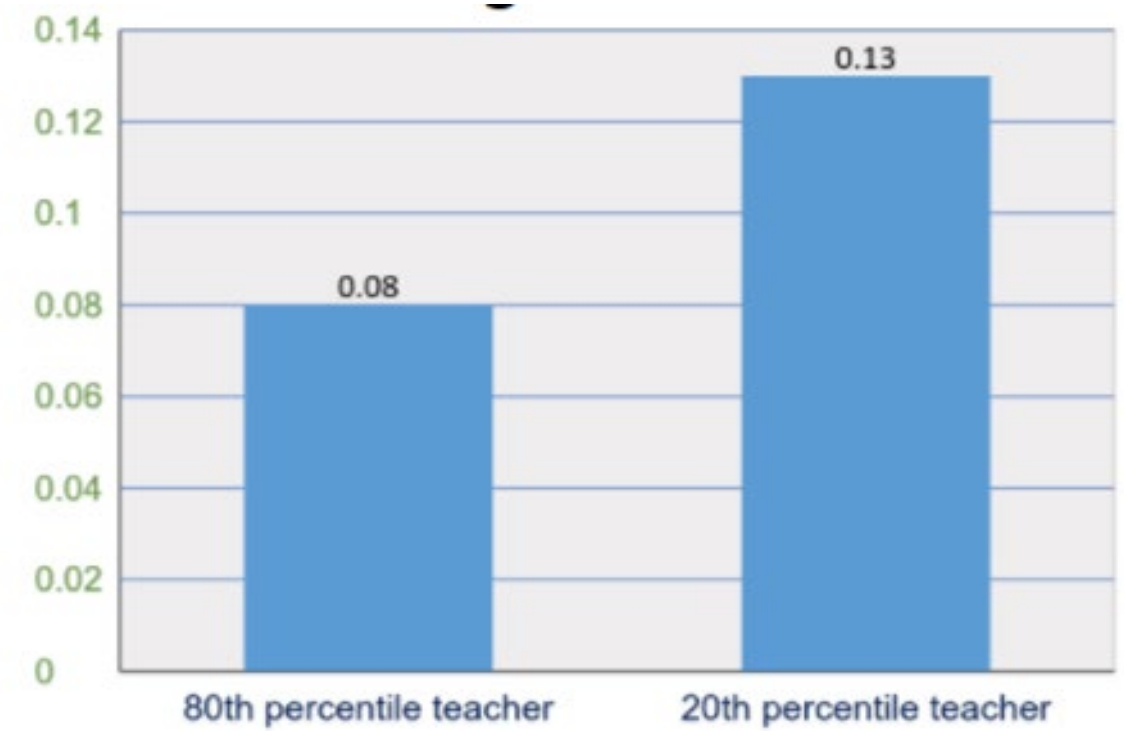


Research demonstrates **high quality instructional materials has the largest effect** size of selected interventions on student test scores.



Source: 1) Joseph A. Taylor et al., "An Efficacy Trial of Research-Based Curriculum Materials with Curriculum-Based Professional Development," American Educational Research Journal, 2015, 2) Matthew Chingos and Grover "Russ" Whitehurst, "Choosing Blindly: Instructional Materials, Teacher Effectiveness," Brookings Institution, 2012

Using HQIM helps all teachers improve results.



All teachers using well designed math lessons saw an **increased impact on test scores, regardless of teacher effectiveness level**; however, the effect size was larger for lower performing teachers.

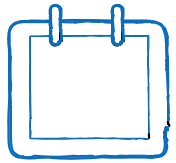
Source: 1) Joseph A Taylor et al., "An Efficacy Trial of Research-Based Curriculum Materials with Curriculum-Based Professional Development," American Educational Research Journal, 2015.

Yet Many Teachers Do Not have Access to High Quality Materials

Districts are eager to purchase the best instructional materials for their teachers and students, but LEAs have communicated the following barriers:

Free information comes from a variety of sources and is often unorganized, not standardized and unreliable.

Smaller districts have limited purchasing power, making it more difficult to access updated, relevant information.



Tens of thousands of teachers across Texas often spend multiple instructional days each year to review materials.

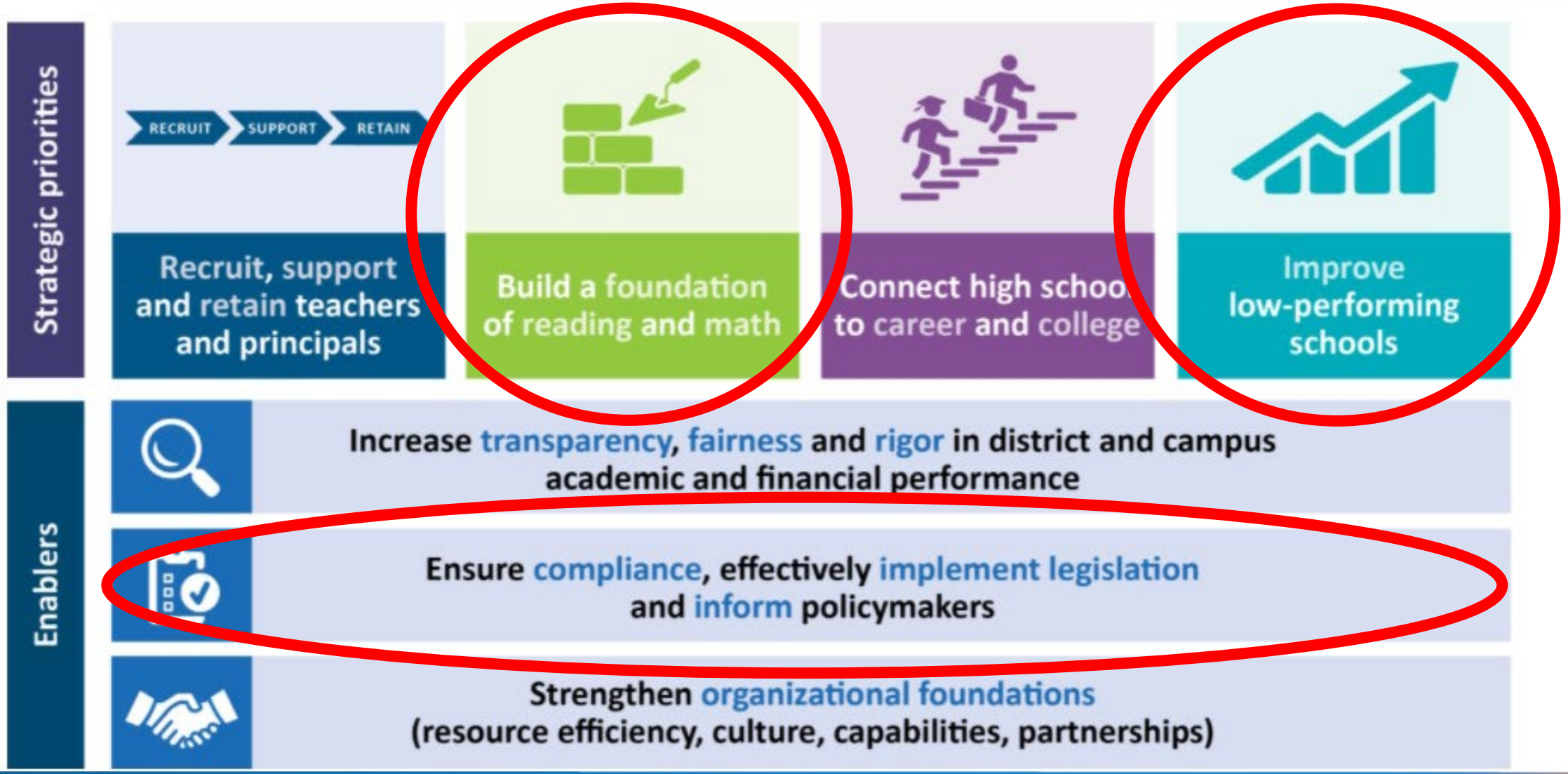
Local reviews start from scratch, increasing time sorting through low quality materials and limiting time comparing high quality options.

The existing SBOE TEKS alignment process does not review materials for quality, leaving many districts with limited support.

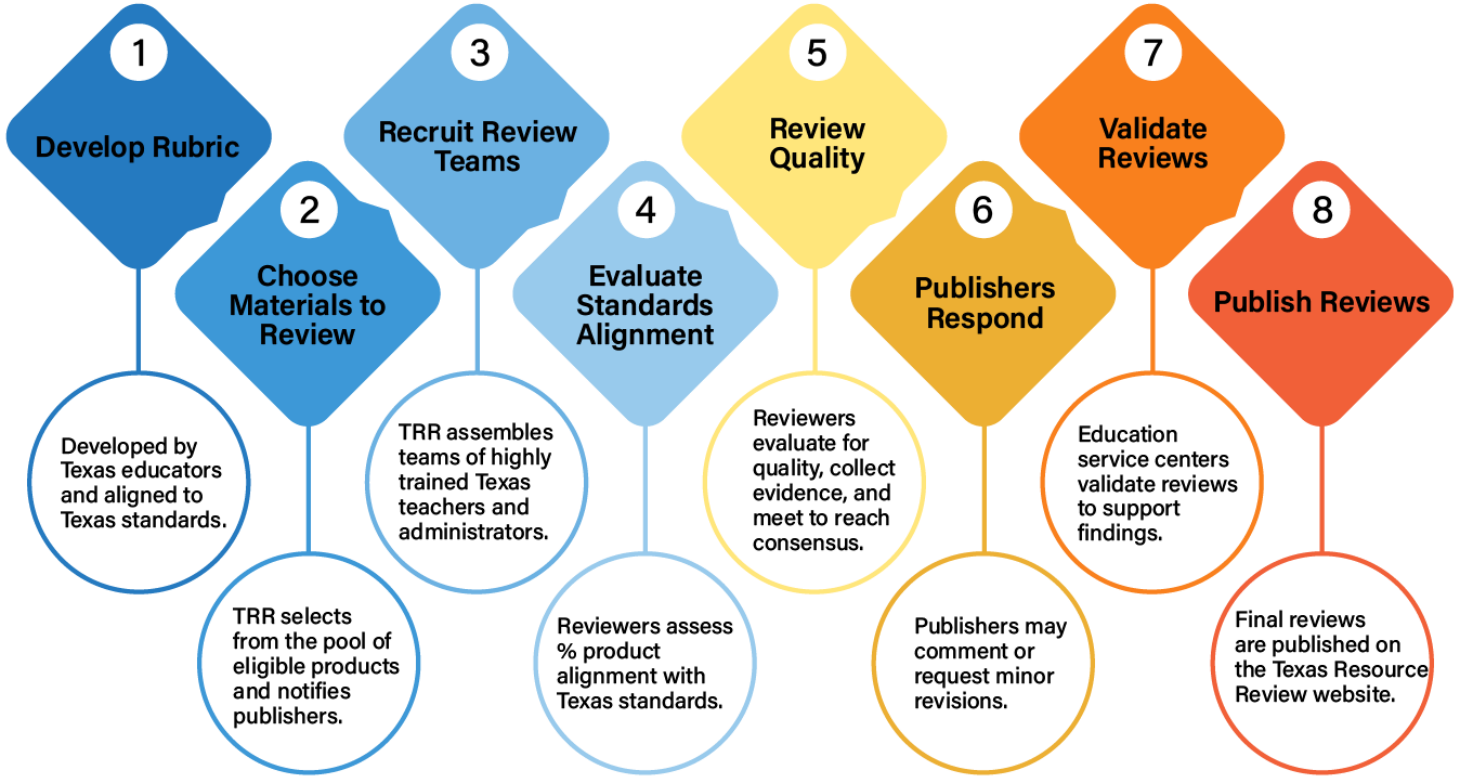
TEA is required by law to implement the TRR

- The TRR was established by the 85th Legislature (2017).
- The legislation directed TEA to develop and maintain a website with general information about instructional materials, quality reviews, and open education resources.
- TEA is also required to contract with a 3rd party to conduct independent quality reviews.

Every child, prepared for success in college, a career, or the military.



TRR Quality Review Process



Overview of the TRR Process

1. Develop Texas specific quality rubric designed for Texas standards

2. Recruit, select, and train diverse teams of Texas educators, including teachers and administrators, to serve as reviewers

3. Reviewers evaluate materials, collect evidence, and meet weekly to reach consensus and draft reviews

Overview of the TRR Process (cont.)

4

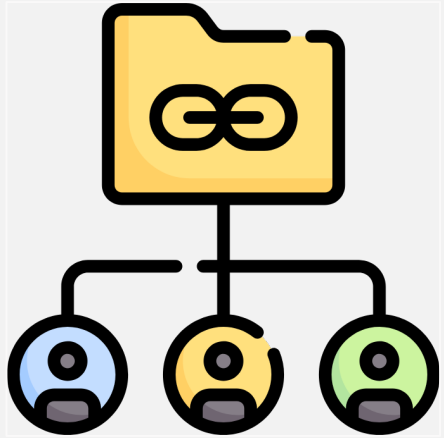
ESCs validate reviews to ensure reports include evidence to support scores

5

Publishers may revise materials, submit errors and provide a response based on the quality review

6

Final quality reviews are published on the Texas Resource Review website

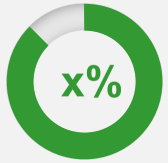


How the Process Works

Instructional Materials Submitted for Quality Review

SBOE TEKS/TPG Coverage Process

Reviewers determine ***which*** *standards are met*

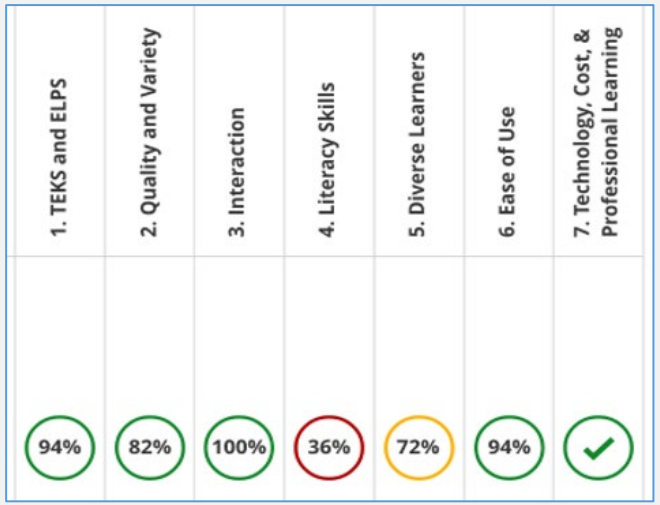


Percent TEKS Coverage

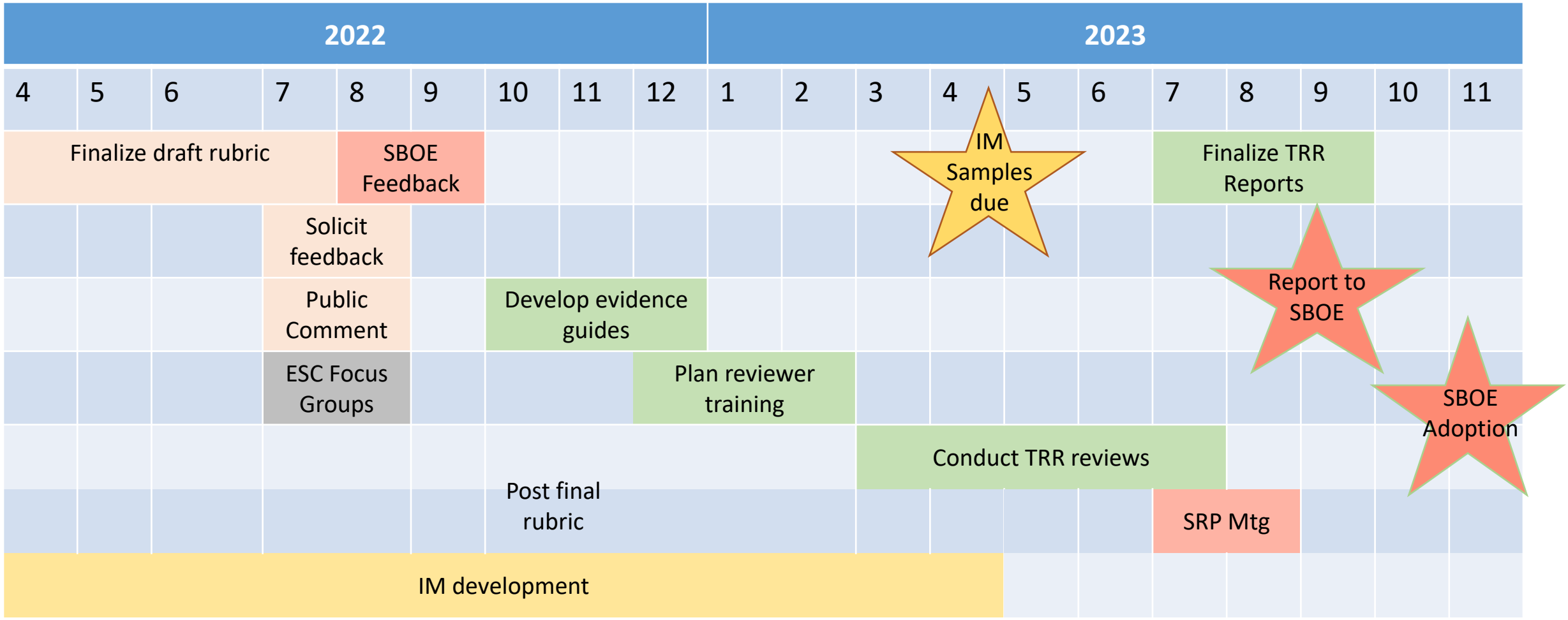
Quality Review Process

Reviewers collect evidence to determine ***how well*** *standards are met*

Clear, Transparent, User-Friendly Results Published on Portal



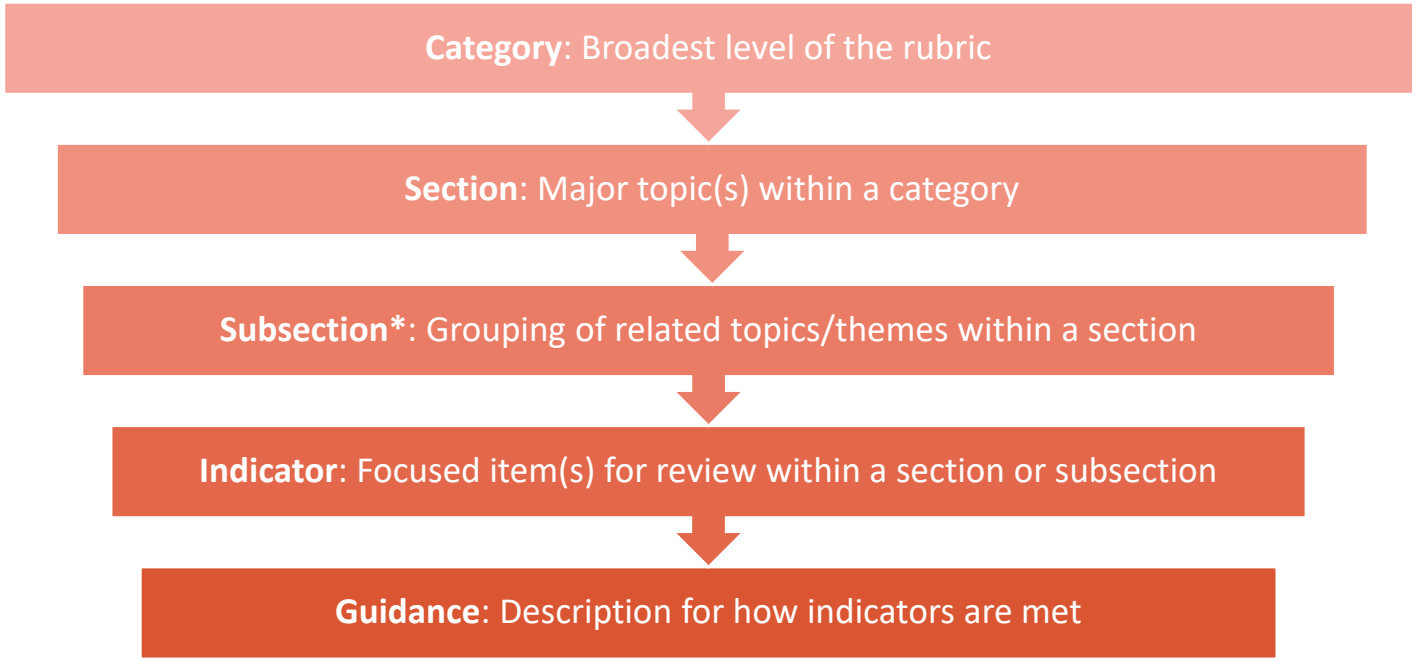
Science Timeline



Science Rubrics

TRR rubrics follow a standard design pattern.

- Rubrics are arranged by category, section, subsection, indicator, and guidance.



Science rubric design (draft)

Category	Section	Number of Indicators	Total Possible Points	Display on Report
TEKS- and ELPS-Alignment Review	1. Standards-Alignment	N/A	N/A	% TEKS and ELPS
Content and Instructional Approach	2. Instructional Anchor	2 indicators	8 points	% of total section points
Content and Instructional Approach	3. Knowledge Coherence	3 indicators	12 points	% of total section points
Content and Instructional Approach	4. Productive Struggle	1 indicator	4 points	% of total section points
Content and Instructional Approach	5. Evidence-based Reasoning and Communicating	2 indicators	8 points	% of total section points
Educator Supports	6. Progress Monitoring	3 indicators	6 points	% of total section points
Educator Supports	7. Supports for All Learners	4 Indicators	8 points	% of total section points
Educator Supports	8. Implementation Supports	3 indicators	6 points	% of total section points
Educator Supports	9. Design Features	3 indicators	N/A	Narrative Only
Additional Information	10. Technology, Price, Professional Learning, and Additional Language Supports	N/A	N/A	Information Provided

Each category assesses something different.

Category	Description
State Board of Education (SBOE) Review	This category focuses on the SBOE's TEKS and ELPS alignment review of instructional materials. The TRR compliments the SBOE review process and presents its results in the overall quality report. The SBOE review process results in a percentage of TEKS and ELPS coverage and establishes if materials meet or do not meet requirements for state adoption.
Content and Instructional Concepts	This category focus on **how well** standards are addressed by instructional materials. Sections within this category evaluate guidance for effective teaching and learning specific to the content.
Educator Supports	This category focuses on aspects of instructional materials that directly relate to tools and resources for supporting instruction. Sections within this category focus on the **guidance and support** students and educators need to ensure all students learn and succeed.
Additional Information	This category provides information on technology, cost, professional learning, and additional language supports as shared by the publisher.

Let's look at one of the subsections.

2 Instructional Anchor

Materials are designed to anchor instruction in phenomena and engineering problems.

Science Indicator	Science Guidance	Scoring
2.1 Materials are designed to integrate scientific and engineering practices, recurring themes and concepts, and course-level content.	• Materials consistently integrate scientific and engineering practices, recurring themes and concepts, and course-level content. • Materials provide multiple opportunities for students to practice, develop, and demonstrate mastery of appropriate scientific and engineering practices as outlined in the TEKS. • Materials provide multiple opportunities to make connections between overarching concepts using the recurring themes. • Materials strategically and systematically develop students' content knowledge and skills as appropriate for the concept and course as outlined in the TEKS.	0/2/4
2.2 Materials anchor the learning in phenomena and engineering problems as the key lever for driving learning and student mastery of disciplinary knowledge and skills.	• Materials embed phenomena or problems across lessons to support students to construct, build, and develop knowledge of scientific and engineering practices, recurring themes and concepts, and course-specific content as outlined in the TEKS. • Materials are designed to include both phenomena and engineering problems to authentically engage students in developing and applying science and engineering practices, recurring themes and concepts, and course-specific content as outlined in the TEKS. • Materials intentionally leverage students' prior knowledge and experiences related to phenomena or engineering problems. • Materials clearly outline for the teacher the scientific concepts and goals behind each phenomenon or engineering problem.	0/2/4

Total points possible: 8

Note: This is a draft.

We have posted the draft rubrics.

www.texasresourcereview.org

The science rubrics can be found at the bottom of the page.

Established TRR Rubrics

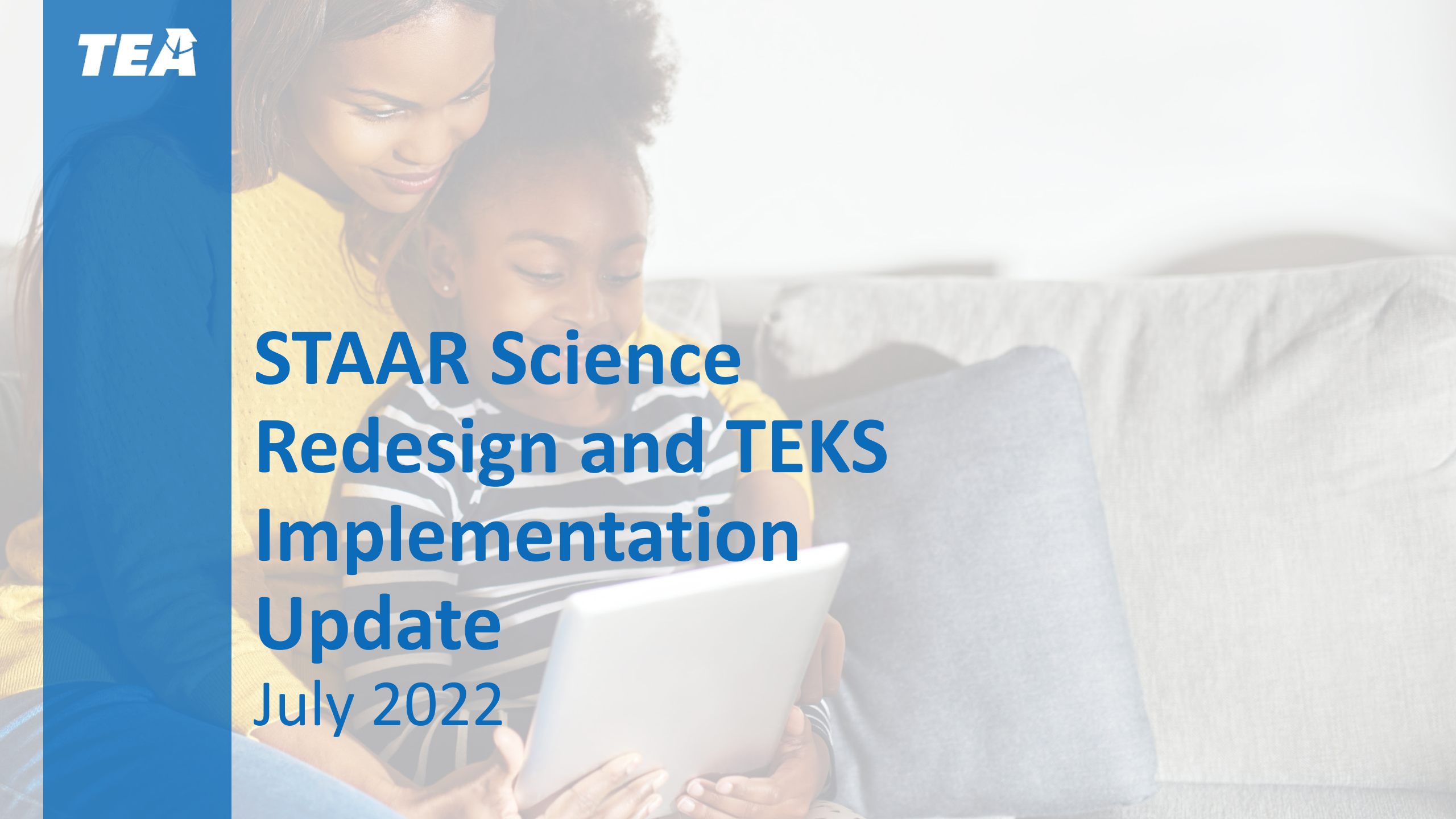
RUBRICS	DATE PUBLISHED
English Language Arts & Reading Grades K–2	June 2019
English Language Arts & Reading Grades 3–8	June 2019
English I - English IV Grades 9–12	June 2019
Prekindergarten Systems	November 2019
Foundational Literacy K–2	November 2019
Mathematics K–8	November 2019
Spanish Language Arts and Reading K–2 (English/Español)	July 2020
Spanish Language Arts and Reading 3–6 (English/Español)	July 2020
Spanish Foundational Literacy (English/Español)	July 2020
Spanish Prekindergarten Systems (English/Español)	July 2020
English K-3 Phonics Rubric (updated draft)	May 2022
Spanish K-3 Phonics Rubric (updated draft)	May 2022
Science K–8 (Draft)	July 2022
Science 9–12 (Draft)	July 2022

We want your feedback on the rubric!

- TEA will be soliciting feedback on the draft rubrics over the course of the next month.
- Publishers are invited to attend a focus group from 1:00 to 3:00 p.m. on Thursday, August 18, 2022. (Register here.)
- As we receive feedback, we will post a memo of changes and an updated draft.
- The final version will be available in September.

Questions

- Is there anything that is unclear?
- Is there anything you want to know more about?
- After this webinar, submit TRR-related questions to the TRR help desk.



STAAR Science Redesign and TEKS Implementation Update

July 2022

State and Federal laws require a redesign of Texas's state summative assessment (STAAR), effective 2022-23

HB 3906 in 2019 created **transformative changes to improve the STAAR program.**

- 75% multiple choice cap
- Transition to online testing
- Through-year assessment pilot
- Interim and formative assessments

Additionally, the federal government requires Texas to assess the breadth of the TEKS, which for RLA includes **writing**.

These policies are intended to ensure **assessments engage students in the same ways they are learning in the classroom and reward good instruction** while continuing to accurately measure student mastery.

Feedback from educators informed the main components of the STAAR redesign

	In effective classrooms, teachers are…	*...and avoid less effective practices by…*
1	Coherently building students' **background knowledge and vocabulary** in all subject areas...	…not just having students **read passages on random topics**
2	Asking students to **write about what they read using evidence from text**…	…not just **reading without writing**
3	Providing **various open-ended formats** for students to respond to questions…	…not just having students **select among multiple choices**
4	Supporting the learning needs of all students by providing **appropriate accommodations**…	…not requiring all students to perform without **appropriate supports**

The STAAR redesign is based on improving alignment to the classroom experience

	In effective classrooms, teachers are…	*The STAAR redesign will…*
1	Coherently building students' **background knowledge and vocabulary** in all subject areas...	Prioritize **cross-curricular passages** in RLA that reference topics that students have learned about in other classes
2	Asking students to **write about what they read using evidence from text**…	Include **writing in all RLA tests**, reflecting our updated TEKS, and having **students write text-based responses**
3	Providing **various open-ended formats** for students to respond to questions…	Add new**, non-multiple-choice questions** that are more like questions teachers ask in class
4	Supporting the learning needs of all students by providing **appropriate accommodations**…	Move to **online assessments** that provide a full suite of robust accommodations for students with specific learning needs
5	Moving to **online assessments** supports all the changes above and provides faster test results to support accelerated learning.	

Passages and questions will continue to go through the existing rigorous process to ensure quality

New questions will need to meet our existing rigorous requirements for STAAR, including:

- Valid statistics from field tests
- Alignment with TEKS
- Grade level appropriateness
- Lack of bias
- Accessibility for all students
- Review and approval from group of Texas educators who teach the grade level and agree students should be able to answer these questions at the end of the year

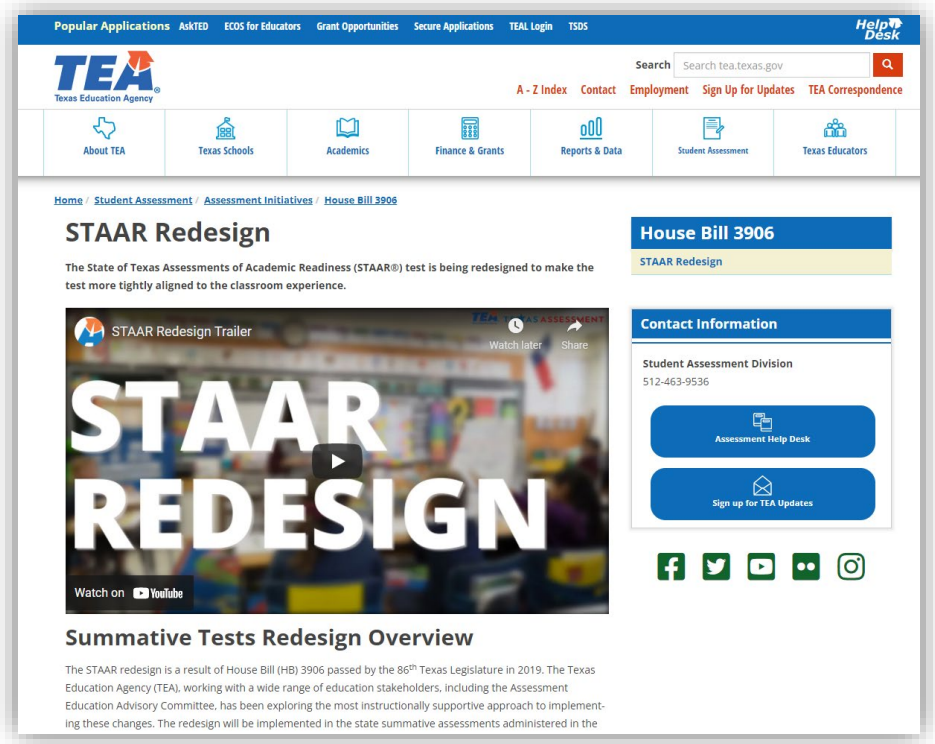
TEA has worked closely with students and educators to determine which new question types best support students:

- **600** educators participated in focus groups on new question types
- **200+** students participated in input gathering around new question types including feedback sessions, think-alouds, and perception sharing
- **92%** of educators agree that the new question types allow students to better demonstrate their knowledge.
- **89%** of educators believe that the new question types are more engaging for students
- **80%+** of educators agree that new question types will impact instructional planning

Based on educator feedback, several resources were released in January and can be found on the STAAR Redesign website

- New question type samplers by content area and grade level on the same platform as STAAR
- A one-page overview of potential question types by content area and grade level
- A scoring and reporting guide by content area for new question types
- Updated STAAR Redesign FAQs
- Updated blueprints by content area and grade level
- Policy guidance on which students qualify for a special paper administration

STAAR Redesign Website

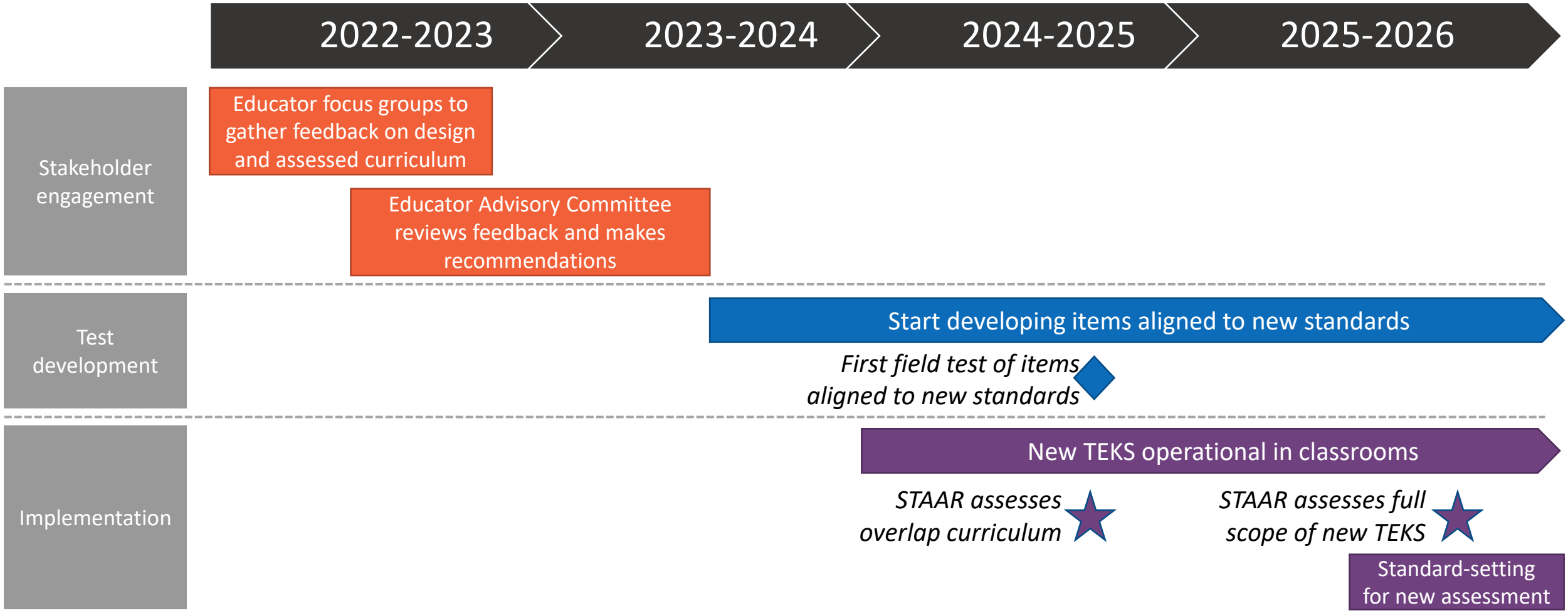


https://tea.texas.gov/student-assessment/assessment-initiatives/hb-3906/staar-redesign

More STAAR redesign resources to come!

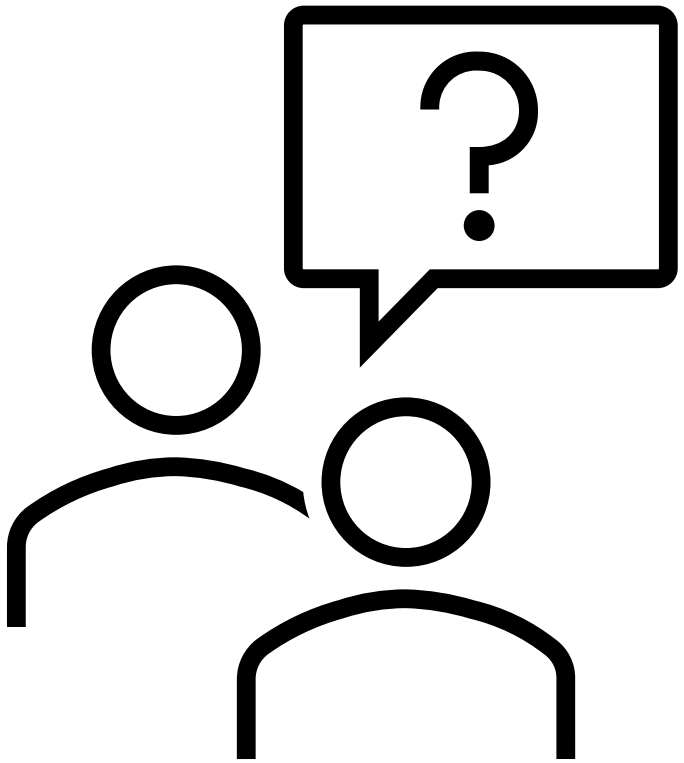
When	What
Fall 2021	**Preliminary blueprints** and **RLA assessed curriculum** available on TEA website.
January 2022	**New question type samplers by grade & subject** on same platform as STAAR and accompanying resources.
Spring 2022	Blueprints and new question types will be finalized based on stand alone field test data.
Summer 2022	**Final blueprints** will be published.
Fall 2022	**Practice tests by grade & subject** on same platform as STAAR, and **constructed response scoring guides**.

Tentative timeline for implementing the new science TEKS



Next Steps

TEA will present the *Proclamation 2024 Questions and Answers* to the SBOE in September 2022.



- The Q&A is used to provide official direction and clarification by the SBOE.
- If there are specific questions you have or if you need further clarification on any of the requirements, please submit them to TEA no later than 7/31/2022.

Statement of Intent to Bid (SOITB)

The SOITB is the first deliverable you must submit. If you fail to submit a SOITB by 12/5/2022, you will not be allowed to participate in the proclamation.

Publishers will submit the SOITB in EMAT. A link to training will be emailed.

The SOITB:

- Indicates a publisher's desire to participate
- Is required for each product and course
- Provides the following basic information about materials:
  - Program Title
  - Course or grade level for which materials are intended
  - Estimated TEKS coverage percentage
  - Media format(s)
  - System requirements

Publishers must follow a specific process to demonstrate alignment to the standards.

- Publishers will be granted access to the standards-alignment dashboard which will be used to provide citations to specific content in the material that cover the standards.
- The complete collection of citations for one course or grade level is called correlations.
- You may begin entering your citations after you submit the SOITB.
- It is crucial that you allocate sufficient time to create your correlations and that you select the best, most closely aligned content.

Preliminary correlations are due 1/9/2023.

- Provides examples of how information will be presented regarding the specific location in instructional materials where publishers believe the TEKS and ELPS are covered
- Allows TEA an opportunity to review and provide feedback before final correlations are due
- Are only required for one product and course

Final correlations are due 4/3/2023

Using the feedback you received after submitting your preliminary correlations, you will complete the remaining correlations.

The final correlations

- are required for every product and course,
- are used by state review panels as the primary resource for determining TEKS coverage, and
- should be carefully chosen and constructed and very clear.

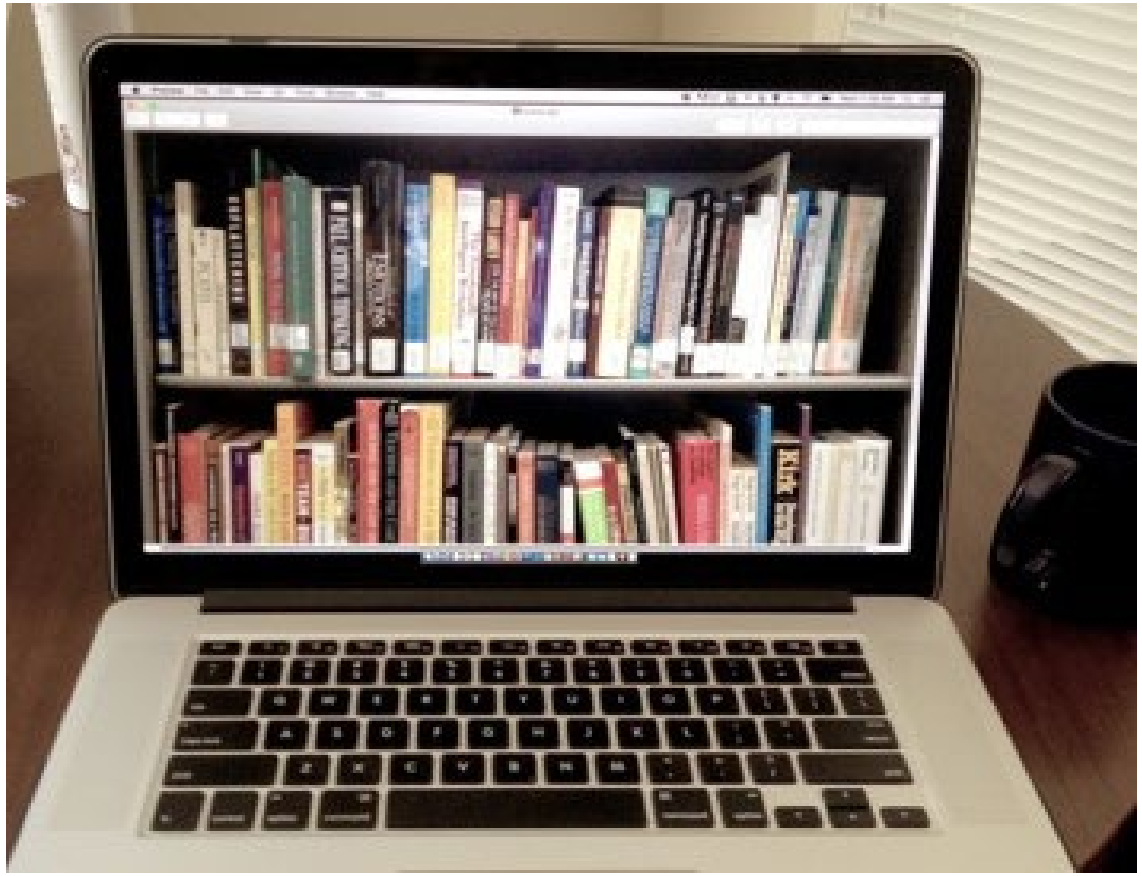
Complete descriptions are due 3/6/2023.

The complete description provides more details about the components that will be used to verify TEKS coverage at the review, including:

TEA will provide the complete description form.

- Program and component titles and ISBNs
- Preliminary price for each component
- Number of print pages intended for student use
- System requirements for all digital components
- Is required for each product and course
- Is required for each media format

Pre-Adoption Samples



- Pre-adoption samples are due 3/6/2023.
- A pre-adoption sample is your fully developed product that will be used by reviewers to determine standards-alignment coverage.

Pre-Adoption Samples

- Must be complete electronic versions of the final product
- Will be posted to the TEA website for public review
- Must remain unchanged
- Must have a thorough editorial review prior to the pre-adoption sample due date
- Must be free of sales or marketing materials
- Must allow for multiple, simultaneous user access
- Must be equipped with a word search feature
- Must contain embedded correlations that direct users to the content cited for standards alignment

Other Deliverables Due March 6, 2023

- Report on Interoperability and Ease of Use
  - Publishers must provide information regarding their products' interoperability and ease of use for review by the SBOE and districts. The information from each publisher's report will be posted to the agency website.

- Affidavit of Authorship or Contribution
  - Publishers must list everyone whose name is listed as an author or contributor and include in general terms the involvement of each author or contributor to the development of the material.
  - Publishers cannot submit instructional materials that have been authored or contributed to by a current employee of TEA.

Next Steps

- Review the science breakouts. (coming soon)
- Review the *Proclamation 2024* Publisher Handbook. (coming soon)
- Submit any *Proclamation 2024* questions to the IM Help Desk.
- Watch for email with SOITB training.
- Submit SOITB.
- Sign up for Review and Adoption listserv.

Thank you for attending!

Submit an Instructional Materials & Implementation Help Desk ticket with any questions.

Your feedback is important to us. Please complete the Exit Ticket!