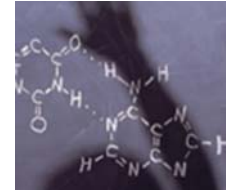


Grade 1 Science

STAAR Field Guide



STAAR

The State of Texas of Assessment of Academic Readiness (STAAR) is based on the Texas Essential Knowledge and Skills (TEKS). Most of the state standards, if they are eligible for assessment in a multiple choice/short answer format, will be assessed on STAAR.

STAAR is designed as a vertical system. Just as the TEKS are structured in a vertically aligned manner, so is STAAR. Learning from one grade level is aligned with learning at the next grade level. Some skills are developed over the course of a student’s educational career from kindergarten through high school, while other skills and learning may begin at a particular grade level and serve as the foundation for later learning. STAAR is an assessment of academic readiness. In other words, we can sum up the variation between the current assessment program (TAKS) and STAAR by reframing the questions we are asking.

TAKS: TAKS was designed to help teachers answer this question:

- Did students learn what they were supposed to learn in the current year’s grade?

STAAR: STAAR is designed to ensure that teachers answer these questions:

- Did students learn what they were supposed to learn in the current year’s grade?
- Are students ready for the next grade?
- And are they also ready for the grade after that?

So what’s the big deal about that shift? Fundamentally, it requires that teachers relook at curriculum and instruction in a very different way than they have under previous assessment systems (TABS, TEAMS, TAAS, TAKS). Not only are teachers required to have a deep understanding of the content of the grade level they are teaching, but they must also be firmly grounded in how the content of that current grade level prepares students for subsequent grade levels. Overemphasis on grade level attainment ONLY may create a context where teachers in subsequent grade levels have to reteach foundational skills to accommodate for the gap created by the lack of appropriate emphasis earlier. It may require students “unlearn” previous ways of conceptualizing content and essentially start all over.

STAAR: focus, clarity, depth

[The TEKS] are designed to prepare students to succeed in college, in careers and to compete globally. However, consistent with a growing national consensus regarding the need to provide a more clearly articulated K–16 education program that focuses on fewer skills and addresses those skills in a deeper manner (TEA).

STAAR is designed around three concepts: focus, clarity, and depth:

Focus: STAAR will focus on grade level standards that are critical for that grade level and the ones to follow.

Clarity: STAAR will assess the eligible TEKS at a level of specificity that allow students to demonstrate mastery.

Depth: STAAR will assess the eligible TEKS at a higher cognitive level and in novel contexts.

STAAR: the assessed curriculum – readiness, supporting, and process standards

A key concept that underpins the design of STAAR is that all standards (TEKS) do not play the same role in student learning. Simply stated, some standards (TEKS) have greater priority than others – they are so vital to the current grade level or content area that they must be learned to a level of mastery to ensure readiness (success) in the next grade levels. Other standards are important in helping to support learning, to maintain a previously learned standard, or to prepare students for a more complex standard taught at a later grade.

By assessing the TEKS that are most critical to the content area in a more rigorous ways, STAAR will better measure the academic performance of students as they progress from elementary to middle to high school. Based on educator committee recommendations, for each grade level or course, TEA has identified a set of readiness standards - the TEKS which help students develop deep and enduring understanding of the concepts in each content area. The remaining knowledge and skills are considered supporting standards and will be assessed less frequently, but still play a very important role in learning.

Readiness standards have the following characteristics:

- They are essential for success in the current grade or course.
- They are important for preparedness for the next grade or course.
- They support college and career readiness.
- They necessitate in-depth instruction.
- They address broad and deep ideas.

Supporting standards have the following characteristics:

- Although introduced in the current grade or course, they may be emphasized in a subsequent year.
- Although reinforced in the current grade or course, they may be emphasized in a previous year.
- They play a role in preparing students for the next grade or course but not a central role.
- They address more narrowly defined ideas.

STAAR assesses the eligible TEKS at the level at which the TEKS were written.

STAAR is a more rigorous assessment than TAKS (and TAAS, TEAMS, TABS before that). The level of rigor is connected with the cognitive level identified in the TEKS themselves. Simply stated, STAAR will measure the eligible TEKS at the level at which they are written.

The rigor of items will be increased by

- assessing content and skills at a greater depth and higher level of cognitive complexity
- assessing more than one student expectation in a test item

The rigor of the tests will be increased by

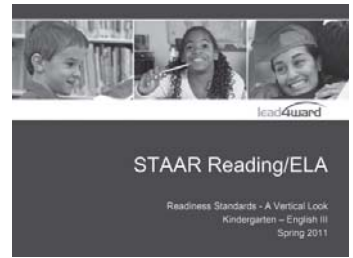
- assessing fewer, yet more focused student expectations and assessing them multiple times and in more complex ways
- including a greater number of rigorous items on the test, thereby increasing the overall test difficulty

About the STAAR Field Guide

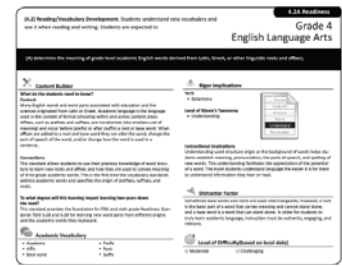
The STAAR Field Guide for Teachers is designed as a tool to help teachers prepare for instruction. The tools and resources in this guide are designed to supplement local curriculum documents by helping teachers understand how the design and components of STAAR are connected to the scope and sequence of instruction. In order to help students attain even higher levels of learning as assessed on STAAR, teachers need to plan for increasing levels of rigor. This guide contains the following components:



STAAR Grade Level Snapshot – one page overview of the standards assessed on STAAR, how those standards are classified (readiness, supporting, or process), the reporting categories around which those standards are clustered, and the number of items that will be on the test from each reporting category and from each type of standard.



STAAR Readiness Standards: A Vertical Look – a vertical look at the readiness standards in grade bands to show the progression of the assessment between grade levels



STAAR Readiness and Supporting Standards Analysis Sheets– overviews of the nature of each readiness and supporting standard assessed on STAAR, designed to be used in planning to build teacher content knowledge and ensure that current grade level instruction reinforces previous learning and prepares students for future grade levels.



STAAR-Curriculum Planning Worksheet – a tool to organize the pages in this guide to be used in planning and professional development

Steps to Success

1. Download the TEA Documents to add to your STAAR Teacher Field Guide
 - STAAR Blueprint
 - Assessed Curriculum Documents
 - STAAR Test Design
 - STAAR Reference Materials
2. Review the STAAR Snapshot for your course/grade level and content area
 - Note the readiness standards
 - With your team, explore why those TEKS are classified as readiness standards – which criteria do they meet
 - Review the supporting standards and note any that may have played a larger role on TAKS
3. Review the STAAR Readiness Standards: A Vertical Look
 - Discuss how the readiness standards connect between grade levels
 - Explore the specific differences between the aligned readiness standards at each grade level
4. Review the components of the STAAR Readiness and Supporting Standards Analysis Sheets
 - Use the samples on pages 6 and 7 to explore the analysis sheets
 - Add additional information based on the discussion on the team
5. Create STAAR-Curriculum Planning Packets for each unit or grading period
 - Collect either the Scope and Sequence document (if it includes the TEKS standards for each unit of instruction) OR Unit Plan documents (where the TEKS standards are bundled together into units of instruction)
 - The STAAR Field Guide is arranged by standard type (readiness or supporting) in numeric order of the standards. You may need to photocopy certain pages/standards if they are repeated throughout multiple units.
 - Use the scope and sequence or unit plan documents to identify the TEKS taught in each unit/grading period
 - Compile the STAAR Readiness and Supporting Standards Analysis Sheets that correspond to the TEKS each unit/grading period
 - After the pages/standards are sorted into their appropriate unit, create a method of organizing the documents (binder, folder, file, etc).
6. Plan for instruction
 - Collect the curriculum documents used for planning
 - Use the STAAR- Curriculum Planning Worksheet as you plan each unit. The worksheet provides guiding questions and reflection opportunities to aide you in maximizing the material in the STAAR Field Guide.
 - Determine where the team needs additional learning
 - Evaluate instructional materials
 - Review the plan for appropriate levels of rigor

How to read STAAR Readiness Standards analysis pages

Student Expectation

Texas Essential Knowledge and Skills Statement

Standard and Indication of
"Readiness" or "Supporting"

Grade and Subject

(5.3) Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, and divides to solve meaningful problems. The student is expected to

5.3A Readiness
Grade 5 Math

(A) use addition and subtraction to solve problems involving whole numbers and decimals;

Content Builder
What do the students need to know?
Content
• Addition
• Whole numbers
• Decimals
• Subtraction
• Whole numbers
• Decimals
Connections
In previous grades students added and subtracted decimals to the hundredths place using concrete objects and pictorial models. This supports the learning in grade 5 as students are using addition and subtraction to solve problems involving decimals.
To what degree will this learning impact learning two years down the road?
This learning will impact future learning as students will continue to be asked to use addition, subtraction, multiplication, and division to solve problems involving fractions and decimals.

Academic Vocabulary
• Add
• Subtract
• Decimal

Rigor Implications
Verb
• Add
• Subtract
• Solve
Level of Bloom's Taxonomy
• Applying

Distractor Factor
Teachers should look for students who may be struggling with the addition when the whole is broken up into a decimal, or when the decimals add up to more than a whole.

Level of Difficulty

Content Builder- The basics of the content within the standard are extracted in a bulleted list. Connections to prior learning/other standards are explained. Future implications of mastery of this standard are described to assist in understanding the impact of this learning in the future.

Rigor Implications- Uses the verb(s) from the Student Expectation to indicate the cognitive complexity of the standard and which level of Bloom's Taxonomy should be addressed during instruction, Instructional implications are also highlighted.

Distractor Factor - Alerts teachers to areas where students traditionally struggle, have misconceptions, or may need reinforcement.

Academic Vocabulary- Vocabulary words are extracted directly from the standard and/or associated with the instruction of the content within the standard.

Level of Difficulty- Standards are labeled either Challenging or Moderate. This determination is made by the campus using previous year data.

How to read
STAAR Supporting Standards analysis pages

Student Expectation

Texas Essential Knowledge and Skills Statement

Standard and Indication of "Readiness" or "Supporting"

Grade and Subject

(5.1) Number, operation, and quantitative reasoning. The student uses place value to represent whole numbers and decimals. The student is expected to

5.1B Supporting
Grade 5 Math

(B) use place value to read, write, compare, and order decimals through the thousandths place.

Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?
5.3A use addition and subtraction to solve problems involving whole numbers and decimals.

How does it support the Readiness Standard(s)?
This standard supports 5.3A by providing students continued practice reading, writing, comparing, and ordering decimals. This will support students as they solve addition and subtraction problems involving decimals.

May be adjusted according to local curriculum.

Academic Vocabulary

- Compare
- Order
- Decimal
- Tenths
- Hundredths
- Thousandths


Rigor Implications

Verb

- Write
- Compare
- Order

Level of Bloom's Taxonomy

- Analyzing



Instructional Implications

To appropriately adhere to the standard, students should be provided the opportunity to practice reading numbers aloud using place value, writing numbers that have been dictated using place value, and comparing and ordering decimals based on their the value.

Supporting the Readiness Standards - Most supporting standards support a readiness standard in the current grade level. This section discusses the relationships of the standards that are often taught together.

Rigor Implications- Uses the verb(s) from the Student Expectation to indicate the cognitive complexity of the standard and which level of Bloom's Taxonomy should be addressed during instruction, Instructional implications are also highlighted.

Academic Vocabulary- Words are extracted directly from the standard and/or associated with the instruction of the content within the standard.

Curriculum - STAAR Planning Worksheet



Course/Grade Level _____

Readiness Standards	
---------------------	--

Content Area _____

Grading Period/Unit _____

Supporting Standards	
----------------------	--

Action Steps	Guiding Questions & Notes
Read each analysis page.	<p>What stands out?</p> <p>How many of the standards are a “Challenging” level of difficulty?</p> <p>How many of the standards are a high level of rigor (above apply on Bloom’s Taxonomy)?</p>
<i>Content Builder</i> (Readiness Standards only)	<p>What other connections could you add to this section? Write them on your analysis pages!</p> <p>This content important for students’ future learning. How will you assess retention?</p>
<i>Supporting the Readiness Standards</i> (Supporting Standards only)	<p>How can you use this information as you plan lessons?</p> <p>Do the supporting standards match with the readiness standards in your unit bundle? If not, arrange them according to your curriculum. Address the questions again “Which Readiness Standards does it support? How does it support the Readiness Standard(s)?”</p>

Curriculum - STAAR Planning Worksheet



Action Steps	Guiding Questions & Notes
Vocabulary	<p>What strategies will you use to ensure mastery of the vocabulary for each standard in this unit?</p> <p>What is your plan if students do not master the vocabulary?</p>
Use the <i>Distractor Factor</i>	<p>How can you address the information in the Distractor Factor section?</p> <p>From your teaching experience, is there anything you would add to this? Write it on your analysis pages!</p>
Reflection	<p>How have you taught this content in the past?</p> <p>How will you teach it differently this year?</p> <p>How will you utilize the readiness and supporting standards for formative and summative assessment?</p>

Reporting Category	Readiness Standards	Supporting Standards
1 Matter and Energy	1.5.A classify objects by observable properties of the materials from which they are made such as larger and smaller, heavier and lighter, shape, color, and texture*	1.5.B predict and identify changes in materials caused by heating and cooling such as ice melting, water freezing, and water evaporating*
2 Force, Motion, and Energy	1.6.A identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life*	1.6.B predict and describe how a magnet can be used to push or pull an object* 1.6.C describe the change in the location of an object such as closer to, nearer to, and farther from 1.6.D demonstrate and record the ways that objects can move such as in a straight line, zig zag, up and down, back and forth, round and round, and fast and slow
3 Earth and Space	1.7.A observe, compare, describe, and sort components of soil by size, texture, and color* 1.8.A record weather information, including relative temperature, such as hot or cold, clear or cloudy, calm or windy, and rainy or icy* 1.8.C identify characteristics of the seasons of the year and day and night	1.7.B identify and describe a variety of natural sources of water, including streams, lakes, and oceans 1.7.C gather evidence of how rocks, soil, and water help to make useful products 1.8.B observe and record changes in the appearance of objects in the sky such as clouds, the Moon, and stars, including the Sun* 1.8.D demonstrate that air is all around us and observe that wind is moving air
4 Organisms and Environments	1.9.C gather evidence of interdependence among living organisms such as energy transfer through food chains and animals using plants for shelter* 1.10.A investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats*	1.9.A sort and classify living and nonliving things based upon whether or not they have basic needs and produce offspring 1.9.B analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver 1.10.B identify and compare the parts of plants* 1.10.C compare ways that young animals resemble their parents* 1.10.D observe and record life cycles of animals such as a chicken, frog, or fish*

Process Standards (Scientific Investigation and Reasoning Skills)

1.1.A recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately
1.1.B recognize the importance of safe practices to keep self and others safe and healthy
1.1.C ask questions about organisms, objects, and events observed in the natural world
1.2.A plan and conduct simple descriptive investigations such as ways objects move
1.2.C collect data and make observations using simple equipment such as hand lenses, primary balances, and nonstandard measurement tools
1.2.D record and organize data using pictures, numbers, and words
1.2.E communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations
1.3.A identify and explain a problem such as finding a home for a classroom pet and propose a solution in his/her own words
1.3.B make predictions based on observable patterns
1.3.C describe what scientists do
1.4.A collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles, timing devices, including clocks and timers; nonstandard measuring items such as paper clips and clothespins, weather instruments such as classroom demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums
1.4.B measure and compare organisms and objects using non-standard units

* = Aligned with STAAR Assessed Curriculum at Grade 5

NOTE: *The classification of standards on this TEKS Snapshot represents the reviewed and synthesized input of a sample of Texas Science teachers. This TEKS Snapshot DOES NOT represent a publication of the Texas Education Agency. District curriculum materials may reflect other classifications.*

Grade 1 Science

(1.5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:

(A) Classify objects by observable properties of the materials from which they are made such as larger and smaller, heavier and lighter, shape, color, and texture.



Content Builder

What do the students need to know?

Content

- Objects by observable properties of the materials from which they are made
- Size (larger, smaller) (heavier, lighter)
- Shape
- Color
- Texture

Connections

This standard builds student knowledge and practice of observing objects, looking and sorting for the observable property that makes that object unique, and being able to classify this object through this scientific process. These foundational skills of observing, sorting, and classifying will carry throughout students' learning of science.

To what degree will this learning impact learning two years down the road?

This standard directly supports 2.5A. In first grade, students are provided with opportunities to observe, sort, and classify objects by observable properties. In second grade, students will build on their background and begin to classify physical properties, which will also be utilized in the intermediate grades.



Academic Vocabulary

- Size
- Shape
- Color
- Texture



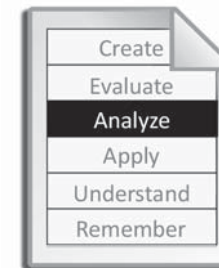
Rigor Implications

Verb

- Classify

Level of Bloom's Taxonomy

- Analyzing



Instructional Implications

This standard builds from K.5A where students observed properties of objects. In first grade, students will sort and classify objects by properties observed.



Distractor Factor

- Students will need to be able to communicate the difference between size in regards to an object's mass (heavier, lighter) and its relative size (larger, smaller).



Level of Difficulty (based on local data)

- Moderate Challenging

(1.6) Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:

Grade 1 Science

(A) Identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life.



Content Builder

What do the students need to know?

Content

- Students will need to know and understand the different forms of energy: light, heat, and sound
- Discussion questions for students: Why is light important? How do we use light energy? Why is heat important? Why is sound important? How do people use heat and light energy?

Connections

K.5A is the foundational readiness standard that directly supports this standard. In kindergarten, students are using their senses to observe and explore the different forms of energy. In first grade, they will use their background knowledge to identify and discuss how these forms of energy are useful in their everyday lives.

To what degree will this learning impact learning two years down the road?

Students will continue to build on this concept of energy. In second grade, they will begin to investigate how decreasing or increasing the amount of energy affects an object. In the intermediate grades, students will explore different forms of energy.



Academic Vocabulary

- Energy
- Sound
- Light
- Heat



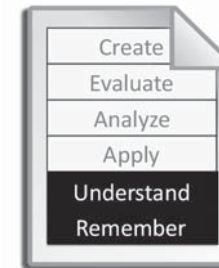
Rigor Implications

Verb

- Identify, Discuss

Level of Bloom's Taxonomy

- Remembering
- Understanding



Instructional Implications

It is important for students to distinguish between the different forms of energy and determine how they are used in everyday life. The ability to distinguish between artificial sources of energy versus natural sources of energy is equally important.



Distractor Factor

- Students may think that light energy comes from artificial light. Students will need to know that the Sun is our major source of light energy.
- Students may think that electrical heat is the only source of heat, natural sources of heat will need to be discussed (from the Sun, as well as heat from fires).



Level of Difficulty (based on local data)

- Moderate Challenging

(1.7) Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:

(A) Observe, compare, describe and sort components of soil by size, texture, and color.



Content Builder

What do the students need to know?

Content

- Components of soil - water, air, organic material, minerals
- Comparing the size, texture, and color of soil

Connections

These concepts are introduced at this grade level. There is not a prior connection to kindergarten. It is important for students to understand that soil is comprised of different components.

To what degree will this learning impact learning two years down the road?

This standard does not directly support a second grade standard, however, in third grade, soil will be revisited by discussing the different ways it is formed. 1.7A will provide background information for students to be successful in the intermediate grades.



Academic Vocabulary

- | | |
|--------------------|------------|
| • Soil | • Minerals |
| • Air | • Texture |
| • Water | • Color |
| • Organic material | • Size |



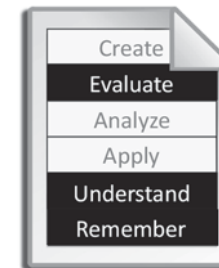
Rigor Implications

Verb

- Observe, Compare, Describe

Level of Bloom's Taxonomy

- Remembering
- Understanding
- Evaluating



Instructional Implications

Provide students with multiple opportunities to be able to sort the components of soil. Explain that air is a component of soil because it is present in the spaces within the soil. A diagram may help this understanding.



Distractor Factor

- Students may refer to soil as dirt. The difference is that soil is comprised of organic material, whereas dirt is displaced soil and has no live organic material. When soil is displaced, e.g. under our finger nails, on our shoes, we then call it dirt.



Level of Difficulty (based on local data)

- Moderate Challenging

(1.8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

Grade 1 Science

(A) Record weather information, including relative temperature such as hot or cold, clear or cloudy, calm or windy, and rainy or icy.



Content Builder

What do the students need to know?

Content

- Properties of weather
- Relative temperature
- Hot or cold
- Clear or cloudy
- Calm or windy
- Rainy or icy

Connections

In kindergarten, students observed and described weather from day to day and over time. Students will build on this understanding in first grade through recoding weather information and will continue to identify recognizable patterns in the natural world.

To what degree will this learning impact learning two years down the road?

This readiness standard’s content will build throughout the elementary grades. In second grade, students will measure, record, and graph aspects of weather. Third graders will observe, measure, and record weather in different locations at the same time to compare data.



Academic Vocabulary

- Weather
- Calm
- Windy
- Rainy
- Icy
- Hot
- Cold
- Clear
- Cloudy



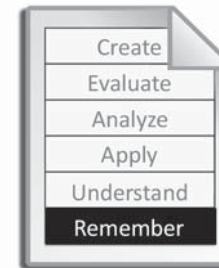
Rigor Implications

Verb

- Record

Level of Bloom’s Taxonomy

- Remembering



Instructional Implications

This readiness standard’s big ideas center around the overarching conceptual understanding of patterns and change over time. Through observing, measuring, and recording, students can see that the weather changes over time and has specific patterns to it that we call seasons.



Distractor Factor

- Students will need to understand the tools used to measure weather. A thermometer measures temperature. A rain gauge measures precipitation. Wind socks measure direction and speed of wind.



Level of Difficulty (based on local data)

- Moderate
- Challenging

(1.8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

Grade 1 Science

(C) Identity characteristics of the seasons of the year and day and night.



Content Builder

What do the students need to know?

Content

- Season
- Year
- Day
- Night

Connections

Instruction will need to include the seasons of the year, changes in temperature, observable changes in day and night, and observable changes in plants in relation to seasons.

To what degree will this learning impact learning two years down the road?

In second grade, standard 2.8B has students determining the importance of weather and seasonal information to make decisions. In the intermediate grades, students will have a solid foundation on the types of weather, as they will begin to study the effects of natural events.



Academic Vocabulary

- Weather
- Season
- Year
- Day
- Night



Rigor Implications

Verb

- Identify

Level of Bloom's Taxonomy

- Remembering



Instructional Implications

The key to this readiness standard is providing students with opportunities to observe and identify the patterns in day and night and seasons of the year.



Distractor Factor

- Students may have the misconception that seasons have the same characteristics at any given point, anywhere on the planet. It is important to know this misconception, but not to overwhelm students when discussing patterns in seasons. Have students compare local patterns and, if appropriate, extend the conversation where this misconception may be appropriately addressed.



Level of Difficulty (based on local data)

- Moderate Challenging

Grade 1 Science

(1.9) Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to:

(C) Gather evidence of interdependence among living organisms such as energy transfer through food chains and animals using plants for shelter.



Content Builder

What do the students need to know?

Content

- Energy transfer through food chains (Sun, producer, consumer, consumer)
- Animals' use of plants for shelter

Connections

In order to adhere to this readiness standard, provide students with opportunities to view evidence of interdependence through pictures or other media. Students will need to have a basic understanding of food chains and the transfer of energy from one living organism to the next.

To what degree will this learning impact learning two years down the road?

The concepts in this readiness standard are first introduced at this grade level. Students will build on these understandings in second grade through learning about how living organisms depend on one another.



Academic Vocabulary

- Food chain
- Energy
- Sun
- Producer
- Consumer
- Animal
- Shelter



Rigor Implications

Verb

- Gather

Level of Bloom's Taxonomy

- Applying



Instructional Implications

Instruction should focus on how living organisms depend on one another. Pictures, books, and media can be effective ways for students to see interdependence among living organisms.



Distractor Factor

- Spend time discussing energy transfer at a basic level. Students will need to understand how living organisms rely on others for food.



Level of Difficulty (based on local data)

- Moderate Challenging

(1.10) Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(A) Investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats.



Content Builder

What do the students need to know?

Content

- External characteristics of animals are structures, appendages, and body coverings.
- How an animal moves
- Where an animal lives
- How an animal eats

Connections

This readiness standard builds on the knowledge learned from kindergarten standard K.10A. Students should have an understanding that plants and animals have physical characteristics. In first grade, students can connect that external characteristics affect how an animal moves, lives, and eats.

To what degree will this learning impact learning two years down the road?

This standard directly supports second grades 2.10A, where students will learn how physical characteristics and behaviors help animals with their basic needs. In third grade, students will explore characteristics of organisms that are inherited.



Academic Vocabulary

- | | |
|---------|------------|
| • Wings | • Nose |
| • Feet | • Tail |
| • Hands | • Feathers |
| • Head | • Fur |
| • Legs | • Hair |



Rigor Implications

Verb

- Investigate

Level of Bloom's Taxonomy

- Evaluating



Instructional Implications

Instruction should include opportunities for students to explore how animals can be different based on where they live, how they live, and what they eat. Students can make connections as to how these external factors make the animal unique among other living organisms.



Distractor Factor

- Students may give human characteristics to animals. Instructional activities must include examples of the animal's structure, how it moves, what it eats, and put in the context of where it lives. It is important for students to see the whole picture of the animal in its environment to make the connection that these factors help contribute to its survival.



Level of Difficulty (based on local data)

- Moderate Challenging

(1.5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:

(B) Predict and identify changes in materials caused by heating and cooling such as ice melting, water freezing, and water evaporating.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

Although this standard does not directly support a readiness standard in first grade, it builds from kindergartens supporting standard K.5B. Students are also utilizing their process skills 1.2A, 1.2B, and 1.2E to investigate the heating and cooling of objects.

How does it support the Readiness Standard(s)?

Indirectly, this standard supports 1.5A by building on the understanding of physical properties. This standard addresses some of the fundamentals of physics. In second grade, this knowledge will help support 2.5B, 2.5C, and 2.5D. This standard will also help the tested third grade supporting standard 3.5C.

May be adjusted according to local curriculum.



Academic Vocabulary

- Heating
- Cooling
- Melting
- Freezing
- Evaporating
- Ice
- Water
- Change



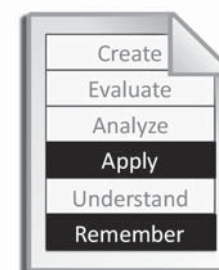
Rigor Implications

Verb

- Predict, Identify

Level of Bloom's Taxonomy

- Remembering
- Applying



Instructional Implications

Provide opportunities for students to explore what will happen if heat or cold is applied to materials, and identify what change occurred.

(1.6) Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:

(B) Predict and describe how a magnet can be used to push or pull an object.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard builds on the exploration of magnets in kindergarten. Students will now use the process skills of prediction to describe how a magnet can be used to push and pull objects.

How does it support the Readiness Standard(s)?

This standard does not directly support a first grade readiness standard. However, it does address the larger conceptual understanding of force, motion, and energy. This idea will lay the foundation for understanding that force is a push or a pull.

May be adjusted according to local curriculum.



Academic Vocabulary

- Push
- Pull
- Magnet



Rigor Implications

Verb

- Predict, Identify

Level of Bloom's Taxonomy

- Applying
- Understanding



Instructional Implications

Provide instructional opportunities where students can have hands-on investigations to learn the concepts of attract and repel.

(1.6) Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:

Grade 1 Science

(C) Predict and describe how a magnet can be used to push or pull an object.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This supporting standard builds understanding of kindergarten standard K.6C. Students will now describe ways that a change has occurred in the location of objects.

How does it support the Readiness Standard(s)?

This standard does not directly support a readiness standard in first grade. However, it does address some of the foundational understandings of physical science, such as force and motion.

May be adjusted according to local curriculum.



Academic Vocabulary

- Closer to
- Nearer
- Farther from
- Change



Rigor Implications

Verb

- Describe

Level of Bloom's Taxonomy

- Understanding



Instructional Implications

To adhere to the standard, provide instructional activities that give students opportunities to describe how an object changes location.

(1.6) Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:

(D) Demonstrate and record the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This supporting standard builds understanding of kindergarten standard K.6D. Students will now demonstrate and record ways that objects move.

How does it support the Readiness Standard(s)?

This standard does not directly support a readiness standard in first grade. However, it does address some of the foundational understandings of physical science, such as force and motion.

May be adjusted according to local curriculum.



Academic Vocabulary

- Move
- Straight line
- Zig zag
- Up and down
- Back and forth
- Round and round
- Fast and slow



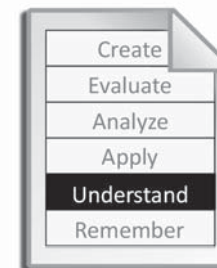
Rigor Implications

Verb

- Demonstrate, Record

Level of Bloom's Taxonomy

- Understanding



Instructional Implications

Process standard 1.2B can easily be integrated into a daily instruction of this concept. To appropriately adhere to the standard, students should be provided with opportunities for hands on investigations where they can see each of the types of movements that are listed in the standard applied to objects. Students will also need support and understanding of how to describe how the object changes location.

(1.7) Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:

(B) Identify and describe a variety of natural sources of water, including streams, lakes, and oceans.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard does not directly support a readiness standard for first grade. However, it does build on the understanding from kindergarten TEKS K.7B of what constitutes a natural source of water.

How does it support the Readiness Standard(s)?

This standard lays the foundation for Earth science and supports 2.7B. This concept will not be directly revisited in the intermediate grades.

May be adjusted according to local curriculum.



Academic Vocabulary

- Natural
- Source
- Water
- Stream
- Lake
- Ocean
- Pond
- River
- Glacier



Rigor Implications

Verb

- Identify, Describe

Level of Bloom's Taxonomy

- Remembering
- Understanding



Instructional Implications

It is important for students to know that rain is a natural source of water that causes streams, rivers, lakes, and oceans. Water from the faucet might come from one of these sources, but is not the natural source.

(1.7) Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:

(C) Gather evidence of how rocks, soil, and water help to make useful products.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

The conceptual understanding that resources from the natural world are important in our everyday lives carries over from kindergarten TEKS K.7C. In first grade, students will now gather evidence of how rocks, soil, and water help make useful products. Students will build on this understanding in second grade TEKS 2.7C, where they distinguish between manmade and natural resources.

How does it support the Readiness Standard(s)?

This standard vertically aligns throughout the intermediate grades, and the framework of understanding supports readiness standards 4.7C and 5.7C.

May be adjusted according to local curriculum.



Academic Vocabulary

- Rocks
- Soil
- Water
- Useful



Rigor Implications

Verb

- Gather

Level of Bloom's Taxonomy

- Applying



Instructional Implications

During instruction, be sure to show examples of how everyday items are made with rocks, soil, and water.

(1.8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

(B) Observe and record changes in the appearance of objects in the sky such as clouds, the Moon, and stars, including the Sun.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard directly supports 1.8C, which requires students to identify characteristics of the seasons of the year and day to day. Through observing changes in the appearance of the sky, students can begin to understand that there are patterns to our natural world, such as seasons. Emphasis on patterns will be a primary focus in second grade with TEKS 2.8D.

Background from kindergarten to support this standard:
What is in the sky? Difference between day and night

K.8.B: Identify events that have repeating patterns including seasons of the year and day and night.

K.8.C: Observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.

How does it support the Readiness Standard(s)?

1.8B vertically aligns with 2.8D. In first and second grades, students will learn the foundational knowledge of identifying objects in the sky, which will support third grade readiness standard 3.8D, where students will learn about the solar system.

May be adjusted according to local curriculum.



Academic Vocabulary

- Sky
- Moon
- Clouds
- Stars
- Sun



Rigor Implications

Verb

- Observe, Record

Level of Bloom's Taxonomy

- Remembering



Instructional Implications

To adhere to this standard, provide opportunities for students to observe and record changes in the day and night sky. Observe and show what changes happen in the sky, such as clouds moving, moon full or otherwise, stars moving, and sun rising/setting.

(1.8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:

(D) Demonstrate that air is all around us and observe that wind is moving air.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard indirectly supports 1.8A. This supporting standard is introduced at this grade level and there are no prior TEKS in kindergarten that help build this understanding. Future TEKS build on this understanding, but the content will not be reintroduced.

How does it support the Readiness Standard(s)?

This standard indirectly supports 1.8A by demonstrating and observing that air is all around us and that wind is air moving.

May be adjusted according to local curriculum.



Academic Vocabulary

- Air
- Wind



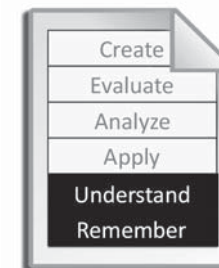
Rigor Implications

Verb

- Demonstrate, Observe

Level of Bloom's Taxonomy

- Understanding
- Remembering



Instructional Implications

The concept that air is moving can be abstract, especially in a classroom environment. Placing streamers on the air conditioning vents can show evidence of air moving. Equally important is to have students go outside and observe wind. Streamers can also be utilized to show the movement of wind.

(1.9) Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to:

(A) Sort and classify living and nonliving things based upon whether or not they have basic needs and produce offspring



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard builds from kindergarten TEKS K.9A, where students had to differentiate between living and nonliving. In first grade, students will sort and classify living and nonliving things. This concept will not be addressed or built upon in second grade, but will be utilized as a foundational understanding for the intermediate grades.

How does it support the Readiness Standard(s)?

This standard helps support 2.9A. The first and second grade standards build the understanding for the third grade readiness standard 3.9A.

May be adjusted according to local curriculum.



Academic Vocabulary

- Living
- Nonliving
- Offspring
- Basic needs



Rigor Implications

Verb

- Sort, Classify

Level of Bloom's Taxonomy

- Applying



Instructional Implications

It is important to provide instructional activities which allow for students to sort living and nonliving objects. Emphasis should also be placed on the properties and characteristics of these objects.

(1.9) Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to:

(B) Analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and care giver.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard indirectly supports 1.9C by reinforcing the concept of interdependence among living organisms.

How does it support the Readiness Standard(s)?

This standard does not directly support a readiness standard; however it helps form conceptual understandings of interdependence and can be vertically aligned throughout primary and intermediate grades.

May be adjusted according to local curriculum.



Academic Vocabulary

- Animals
- Plants
- Food
- Oxygen
- Basic needs
- Terrarium
- Aquarium
- Pet
- Care giver



Rigor Implications

Verb

- Analyze, Record

Level of Bloom's Taxonomy

- Remembering
- Analyzing



Instructional Implications

Provide students with instructional activities that allow them to identify and build understanding of the relationship between organisms and how they depend on each other for survival.

(1.10) Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(B) Identify and compare the parts of plants.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard builds from the kindergarten supporting standard K.10B. In first grade, students will build on this knowledge by comparing parts of plants such as roots, stems, and leaves. Students will build on this in second grade by observing, recording, and comparing physical characteristics of plants. In future grades students will build on this basic understanding, and will focus on the structure and function of different species and their survival.

How does it support the Readiness Standard(s)?

This standard does not directly support a readiness standard.

May be adjusted according to local curriculum.



Academic Vocabulary

- Plant
- Roots
- Stems
- Leaves



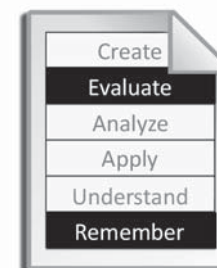
Rigor Implications

Verb

- Analyze, Record

Level of Bloom's Taxonomy

- Remembering
- Evaluating



Instructional Implications

To adhere to this standard, provide students with instructional activities that allow them to identify how different plants may have the same plant parts, but the parts may look different. Examples include: root systems such as carrots or grass; stems like vines or trees; leaves, which can be large like elephant plants or palm trees and small like lobelia; and flowers with varying sizes, smells, etc.

(1.10) Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(C) Compare ways that young animals resemble their parents.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

This standard builds on kindergarten supporting standard K.10C. This standard builds from the basic understanding of how to identify similarities in external characteristics but now, in first grade, it is applied to young animals and their parents. This will not be built upon in second grade, but will serve as foundational knowledge for third grade TEKS 3.10B.

How does it support the Readiness Standard(s)?

This standard indirectly supports the readiness standard 1.10A in observing, identifying, and comparing external characteristics of living things.

May be adjusted according to local curriculum.



Academic Vocabulary

- Animal
- Young
- Parent



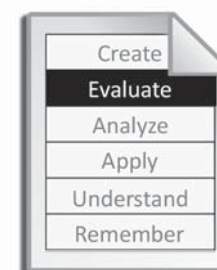
Rigor Implications

Verb

- Compare

Level of Bloom's Taxonomy

- Evaluating



Instructional Implications

To adhere to this standard, students will need to understand how to determine if young animals resemble their parents through coloration patterns, limb structure, and behavioral traits.

(1.10) Organisms and environments. Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:

(D) Observe and record life cycles of animals such as a chicken, frog, or fish.



Supporting the Readiness Standards

What Readiness Standard(s) or concepts from the Readiness Standards does it support?

Building from kindergarten supporting standard K.10D, first grade students will now observe and record life cycles in animals. In second grade, students will investigate and record the unique stages in insect's life cycles.

How does it support the Readiness Standard(s)?

This standard helps build the conceptual understanding of cycles and patterns among living organisms. This big idea will carry throughout life science.

May be adjusted according to local curriculum.



Academic Vocabulary

- Life cycle
- Stages
- Offspring
- Resemble



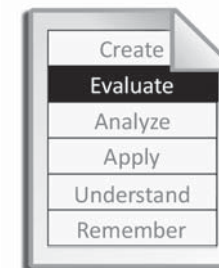
Rigor Implications

Verb

- Observe, Record

Level of Bloom's Taxonomy

- Remembering



Instructional Implications

To adhere to the standards, students will need to observe the stages of life in a chicken, frog, and a fish and be able to understand that there are differences among these organisms' life cycles.