

STAAR[®] Review to Go

Science—Biology

Volume 2



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What Is *STAAR Review to Go: Science*?

STAAR Review to Go: Science is a student-centered review resource to be used to address the Science TEKS that, based on current data, have proven challenging for students. Each activity is TEKS-based and may be used to enrich Tier I instruction or as a review at the rigor outlined by the TEKS.

Each review activity is designed to take 15–30 minutes and fit in a file folder to create a convenient and engaging review resource. These activities can be used over 1–2 days or up to 2 weeks as review activities in science class. They also can be used as Saturday review sessions or during tutorials.

Creating Review Activity Folders

Whether using the review activities in this book or creating your own, you will need the following materials:

- access to a copy machine and/or printer
- cardstock
- clear tape
- envelopes and/or resealable plastic bags
- file folders, preferably a different color for each Reporting Category
- glue and/or glue sticks
- scissors

Create a set (or two, if needed) of Review Activity Folders and place them in stations for students to review over several class periods or make several folders for each activity and have the whole class work through each folder at the same time.

Follow these steps to create a Review Activity Folder:

1. Read through the Materials Lists, Advance Preparation, and Teacher Notes sections of the activity pages and gather the materials for the activity.
2. Print the Labels, Task Cards, and Student Answer Keys. You may choose to make copies from the book or access the digital files to print in color or black and white. Access digital files at <http://r4hub.esc4.net> using your login.
3. Cut out the Labels, Task Cards, and Student Answer Keys and attach each to the folder. You may choose to follow the sample layout or organize the folder in a way that meets the needs of your students.
4. Print copies of the student pages. These are designed to be takeaways for students to use as a study guide.

Using Review Activity Folders

The folder format provides flexible options for review. The following are examples of ways to use the folders:

- Whole-Class Review: During one class period, the class works through the same review activity folder(s) and debriefs them together.
- Review Stations: Student groups work through each folder and note any topics for which they have confusion or need further review. The teacher should monitor to detect any misconceptions. These points for review can be addressed individually or as a class to make the best use of class time.
- Individualized Review: Students work through activities that target their areas of greatest need based on formative assessment data.

What Is *STAAR Review to Go: Science*?

Answer Keys

Answer Keys are included with each activity. The Answer Keys can be used in one of the following ways:

- Place the Answer Key on the back cover of the folder for students to self-check as they work through the activity.
- Place the Answer Key inside the folder in a pocket or under a flap for students to self-check as they work through the activity.
- Plan for students to visit a Solution Station with a labeled Answer Key for each activity.

Debriefing and Providing Feedback

Depending on how the folders are used, the teacher may choose a variety of strategies to provide feedback.

- Use Key Questions and practice assessment items to debrief the review activity. Students should be able to accurately answer these questions following the review.
- Students work through each review activity and use the Answer Key or visit the Solution Station to check their answers. Students should note when they have confusion about a concept so it can be addressed.
- Teachers may choose to be the Solution Station by holding the Answer Keys and discussing student understandings/misconceptions as they check their work.

Using Assessment Data to Create Your Own Review Activities

When planning review activities, assessment data should be used to determine which TEKS must be reviewed thoroughly and which TEKS need minimal review. State assessment data were used to determine the TEKS addressed in *STAAR Review to Go: Science*. Current campus or district data may indicate a need to create review activities for TEKS not addressed in this product.

For a broader view of student assessment trends, use assessment data collected throughout the current year. Most districts have access to data analysis software that can provide performance data at the class, campus, or district level. Consider creating folders following the collection and analysis of data from class, campus, or district assessments so that a set of activities will be ready for use with students when it is time to begin reviewing.

If data analysis software is not available, assessment data from the Texas Education Agency can be helpful in determining which TEKS to target during STAAR review. Statewide item analysis data are available for STAAR assessments beginning in 2013. TEKS with the lowest percentage of correct answers and highest frequency of STAAR assessment questions should be the focus for review.

What Is *STAAR Review to Go: Science*?

Once the TEKS targeted for review have been identified, evaluate available STAAR Released Test Questions to determine the types of questions that are challenging for students. Some types of questions that challenge students include those that:

- require a calculation;
- require students to write and fill in an answer for a griddable item;
- require students to analyze charts, graphs, tables, or diagrams;
- require students to read and understand a large amount of text;
- do not provide a visual model to aid students; or
- require multiple steps to answer.

Consider the STAAR Released Test Questions when planning review activities. Ask, “Would this activity help my students master the targeted concept and answer this question successfully?”

References

Region 4 Education Service Center. (2010) *Gateways to Biology*. Houston, TX: Author.

Region 4 Education Service Center. (2015a) *Warm up to science: TEKS-based engagement activities series, grade 7*. Houston, TX: Author.

Region 4 Education Service Center. (2015b) *Warm up to science: TEKS-based engagement activities series, biology*. Houston, TX: Author.

Region 4 Education Service Center. (2017) *STAAR® review to go: Science grade 5, volume 2*. Houston, TX: Author.

Kagan, S., & Kagan, M. (2009). *Kagan cooperative learning* (2nd ed.). San Clemente, CA: Kagan Publishing.

STAAR Review to Go: Science Features

4: DNA
Reporting Category 2, TEKS B.6A

TEKS

B.6 The student knows the mechanisms of genetics, including the role of nucleic acid the principles of Mendelian Genetics. The student is expected to:

A. identify components of DNA, and describe how information for specifying the traits organism is carried in the DNA

English Language Proficiency Standards (ELPS)

5.B Cross-curricular second language acquisition/writing. The student is expected to write required basic vocabulary and content-based grade-level vocabulary.

Materials lists aid in activity preparation.

TEKS and ELPS are embedded in each activity and are reflected in the content and language objectives.

For the folder

- tape or glue
- scissors
- 3 sheets of cardstock
- snack-size resealable plastic bag
- erasable marker
- transparency

For each student

- DNA Student Answer Sheet

STAAR® Released Test Questions

2015: Questions 24, 41

2014: Questions 17, 52

2013: Questions 18, 30, 43

The titles of **Activity Masters** and **Student Pages** are printed in bold for ease of reference.

STAAR® Released Test Question item numbers are listed for reference or further review.

Sample Layout

Back cover

DNA Answer Key

Front cover

Reporting Category
TEKS

Activity Title

Content Objective
Language Objective
Key Questions

Inside folder

Task List

Task 4: STAAR®
Connection Question

Task 4: STAAR®
Connection Question

Task 1: Memory
Game (bag)

Task 2: Team Challenge

(transparency)

Task 2: Codon Charts

Activity Folder Sample Layouts provide an option/example for assembling folders.

STAAR Review to Go: Science Features

Folder tab label: RC 2 TEKS B.6A
DNA

Folder Tab Labels are provided to aid in organization of folders.

Cover:

Reporting Category 2
Mechanisms of Genetics

TEKS B.6A

DNA

Language Objectives and Content Objectives describe the focus of the TEKS-based activity in student-friendly language.




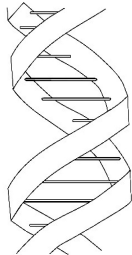
Content Objective
I can explain how the information for the traits of an organism is carried in DNA.

Language Objective
I can use simple and complex sentences to write about how information for the traits of an organism is carried in DNA.

Key Questions

1. What are the components of DNA?
2. How is the information for the traits of an organism carried in DNA?
3. Why is DNA referred to as the genetic code for organisms?

Key Questions help students focus on what they need to know after completing the tasks in the activity folder.



STAAR Review to Go: Science Features

DNA Task List

Task 1: Memory Game

Play the memory game using the cards provided.

Task 2: Team Challenge

Varied border designs are used to differentiate tasks.

the challenge.

For insulin, fill in one side of the DNA template on the DNA card. Label the nine nitrogen bases shaded in blue.

- Fill in the complementary bases.
- Label your DNA using the following terms: *nucleotide*, *phosphate*, *deoxyribose sugar*, and *hydrogen bonds*.

Task 3: Writing Task

- All organisms have a set of instructions that determine their characteristics, or traits. Explain how the information for traits is carried in DNA.
- Use this sentence stem if needed.
The information for the traits of an organism is located _____.

Task 4: STAAR® Connection Questions

Answer the practice questions. Provide evidence to support your answers.



Task 1: Memory Game

- Shuffle the cards and place them face down in rows.
- Take turns flipping over two cards at a time. If the cards match, the player keeps the set and receives an additional turn. If they don't match, the cards are flipped back over and the next player takes a turn.
- The person with the most cards at the end of the game wins.



Each activity includes a literacy component to foster student engagement and processing.

Task 4: STAAR® Connection Question

2. Which of the following nitrogen-base sequences complements the DNA sequence AATTCGTA?

- A TTUCCAT
- B UUAAGCAU
- C TTAAGCAT
- D TTAACGAT

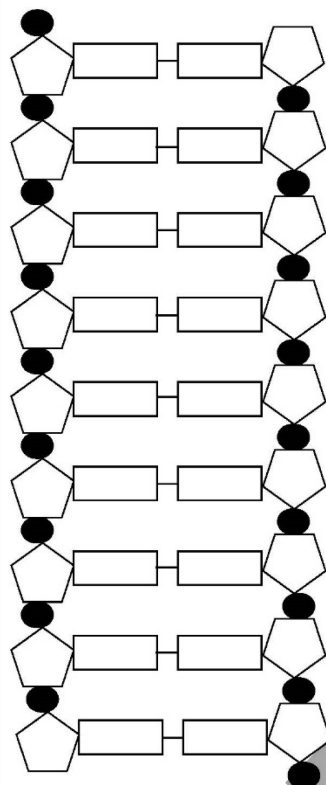


STAAR Review to Go: Science Features

DNA Student Answer Sheet

Task 2: Team Challenge

Label the DNA using the 9 bases shaded in blue from Task 2. Fill in the complementary bases and label the following: nucleotide, phosphate, deoxyribose sugar, and hydrogen bonds.



Task 3: Writing Task

All organisms have a set of instructions that determine their characteristics or traits. Explain how the information for traits is carried in DNA.

Each activity includes a student takeaway that provides students with a study resource.

Task 1: DNA Memory Game Cards

Trait	Nitrogen base	Double helix
A characteristic or feature that is inherited	Make up the rungs of DNA (A,T,C,G)	The term used to describe the shape of DNA, often referred to as a twisted ladder
Nucleotide	Deoxyribose sugar	Hydrogen bonds
	The 5-carbon sugar found in backbone of DNA	The type of bond located between the nitrogen bases in DNA

Some review activities include card sorts or have other manipulatives. Cards are stored in the folder either in a pocket (created using cardstock or an envelope) or in a resealable plastic bag.