

INDEPENDENT STUDY Learning Resources


The STEMscopes mathematics curriculum includes many resources students can use for independent study. Resources can be assigned via the digital interface, downloaded and pushed out to students via Google Classroom, or printed and copied for distribution as work packets.

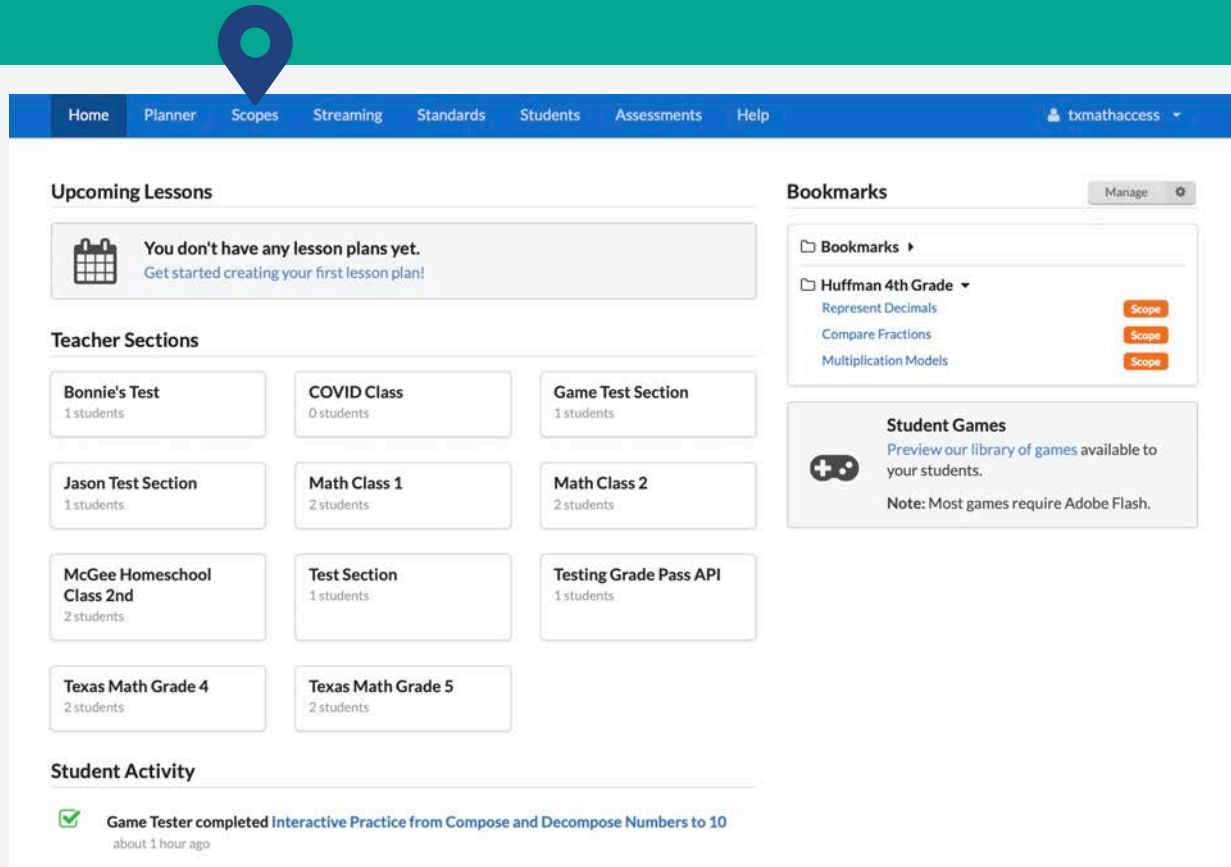
This document provides an overview of the available resources, along with instructions on how to access them and tips for using them. If you need any help learning how to access these resources, please contact STEMscopes or your account manager for additional support.




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
Page	Resource
2-3	Navigating the Curriculum Scope Index Page, Scope Landing Page
4-5	Resources in the Explain Toolbox
6-7	Resources in the Elaborate Toolbox
8	Resources in the Evaluate Toolbox
9	Resources in the Acceleration Toolbox

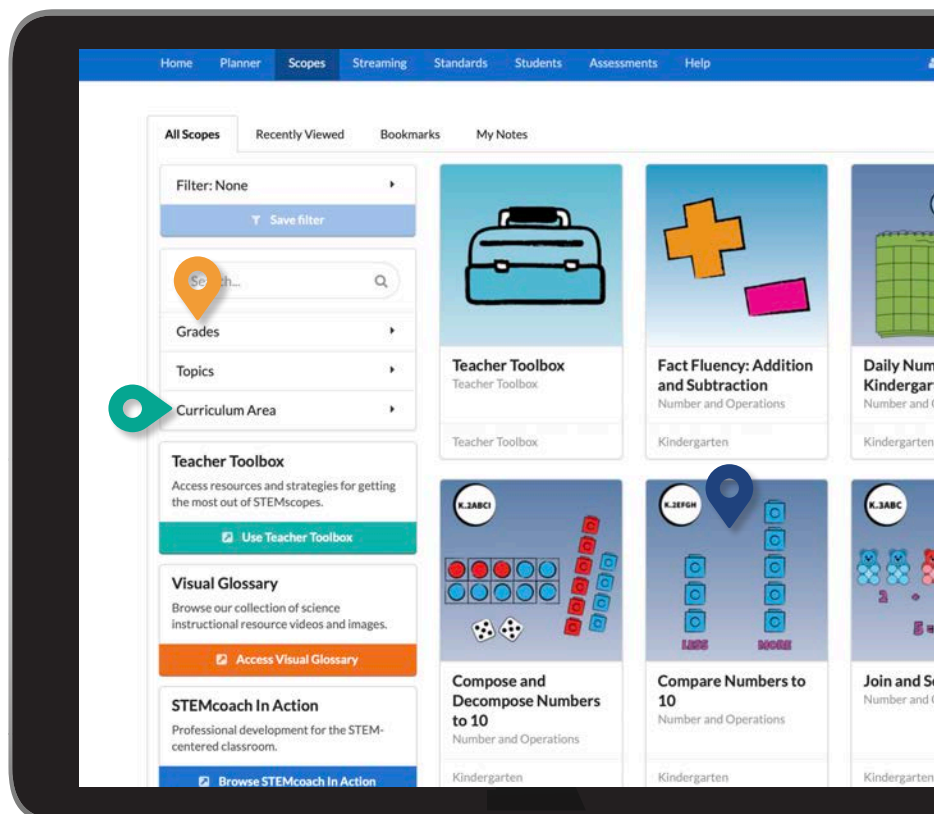
Every time you log into STEMscopes you will be greeted by the Home page.
To access the curriculum, click on the  **Scopes** tab.



Scope Index Page

The curriculum is organized into units called  **Scopes**. In this example from the Texas version of STEMscopes Math, each scope provides a set of learning resources that addresses one or more TEKS performance expectations. You will access the majority of resources from within the scopes pages.

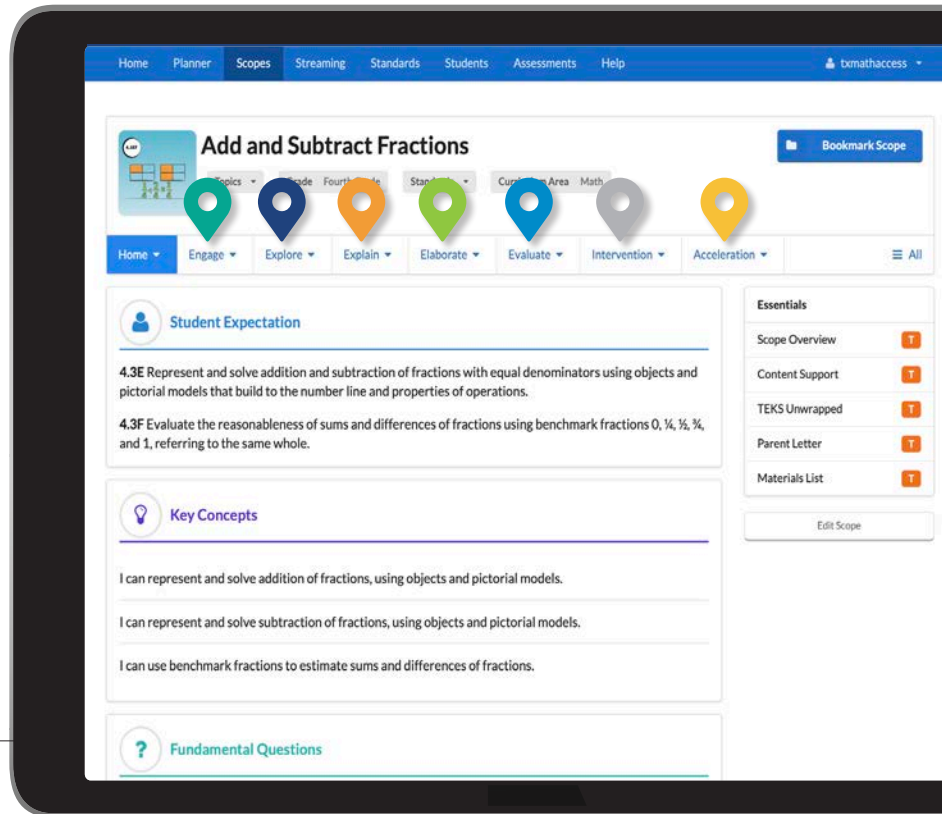
To access resources for a specific grade, select Math from  **Curriculum Area** and then select the grade from the  **Grades** drop down menus. Only math scopes from that grade level will appear in the Scope Index.



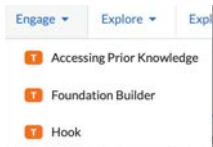
Scope Landing Page

When you click on a scope title, it will open the Scope page, thus giving you access to the comprehensive 5E + IA learning model for the standard(s) you selected.

When teachers use STEMscopes Math to teach in the classroom, they mostly use the resources in the [Engage](#), [Explore](#), [Explain](#), and [Evaluate](#) toolboxes to teach hands-on lessons. For independent study, you will access resources from the [Explain](#), [Elaborate](#), [Evaluate](#), and [Acceleration](#) toolboxes. However, you could modify the hands-on Explore and [Intervention](#) activities to be more home-friendly if you wish.



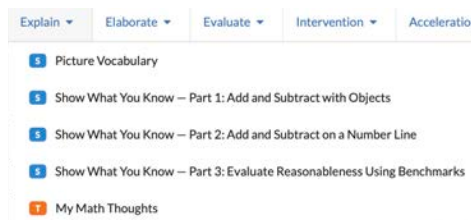
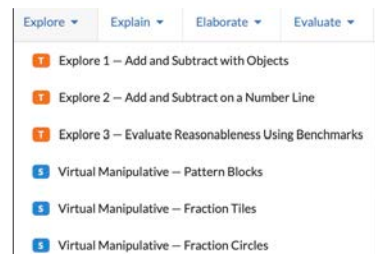
[Engage](#) Dropdown Menu



The resources in the Engage toolbox lay the foundation for learning and hook your students. You begin by preassessing students, which indicates to you where you need to fill knowledge gaps. Then conduct the Hook to lay out a narrative and establish a purpose for learning.

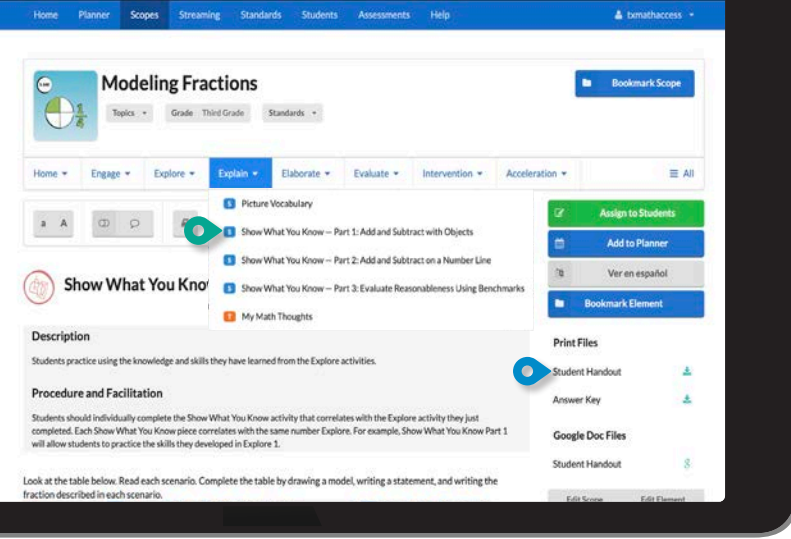
[Explore](#) Dropdown Menu

The resources in the Explore toolbox are a collection of hands-on, inquiry-based math investigations that form a basis for your students' understanding of the math concept. This section provides scaffolded hands-on activities that build toward mastery of the standards. Each Explore is equipped with mathematical discourse to enhance student reasoning, as well as an Exit Ticket. Students also have access to Virtual Manipulatives to help them construct a solid foundation for the mathematical concept.



[Explain](#) Dropdown Menu

The resources in the Explain toolbox help students solidify their understanding. The multiple Show What You Know activities are a real-world independent practice that directly complement each Explore activity. Within Explore, there are illustrated vocabulary cards, independent practice, and journal prompts to support the Explore activities.



Explain Resources


Show What You Know

The K-5 Show What You Know is designed to complement specific Explore activities and help solidify the students' knowledge of the content.

Students can independently work on the Show What You Know practices and utilize the embedded supports.

Click on the [Student Handout](#) link to download this resource as a PDF file.

Show What You Know Example



Show What You Know

Modeling Fractions
Part 1


Name: _____ Date: _____

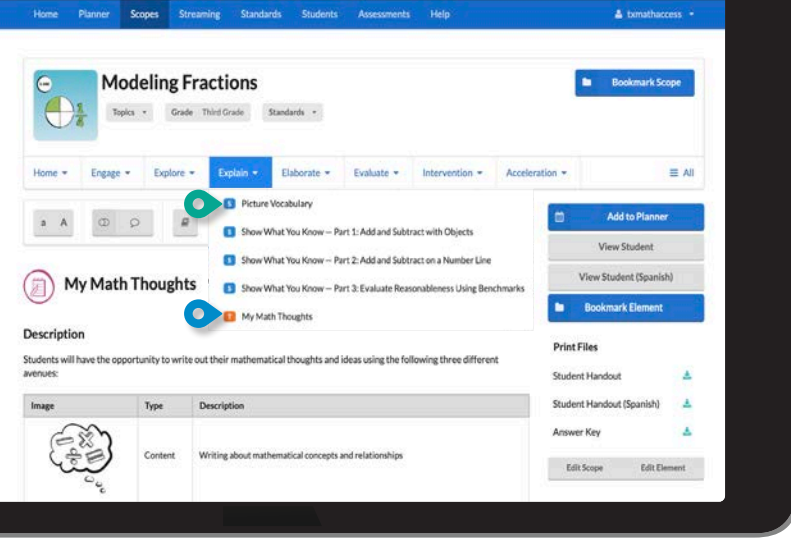
Modeling Fractions

Part 1: Parts of a Whole

Look at the table below. Read each scenario. Complete the table by drawing a model, writing a statement, and writing the fraction described in each scenario.

Scenario	Model	Statement Describing Your Model	Fraction
<p>Aanya bought a candy bar at the gas station. She noticed the candy bar had 8 equal sections. She ate 5 sections and saved the rest for later.</p>		<p>Aanya ate _____ out of _____ sections of the candy bar.</p>	
<p>Ja'Von ordered a pizza.</p>		<p>_____ out of _____ sections</p>	





Explain Resources

Picture Vocabulary

The Picture Vocabulary resource enables you to easily create vocabulary flash cards for students to practice with at home.

The picture vocabulary includes academic words that can be downloaded as a Google Slide file. From there you can push it out to students through the STEMscopes digital

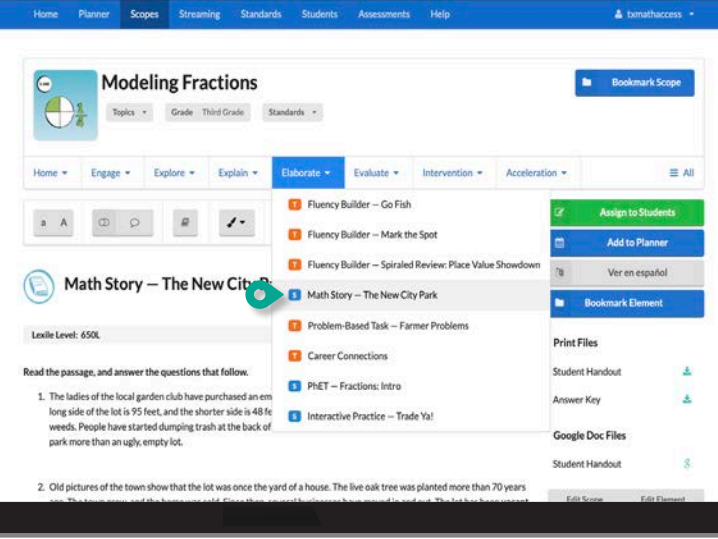
platform or Google Classroom and export it into Google Slides to print vocabulary out as worksheets or flashcards.

My Math Thoughts

My Math Thoughts is a thoughtful activity for students. These exceptional journal prompts encourage students to write, using mathematical language.

Vocabulary Cards Example

My Math Thoughts Example



Elaborate Resources

The Elaborate toolbox contains several engaging resources that reinforce both mathematical and ELA learning. Elaborate supports your students through differentiation activities.

Math Story

Math Story is an article that encompasses mathematical thinking and provides comprehension questions—especially helpful for ELA integration.

Every grade has a math story for each scope. Students do not have to have background knowledge about the math topic to comprehend the article.

In grade K-1 these are meant to be read to students by an adult. In grade 2–5 these worksheets are lexiled appropriately for their grade level. They are assignable for students on the STEMscopes interface, and can also be downloaded as a Google File and uploaded to a Google Classroom. With our embedded supports English language learners can help improve their language skills.

The examples shown below are from third grade, but these resources are available for every scope in K-5.

Math Story Example

Math Story

Name: _____ Date: _____

The New City Park

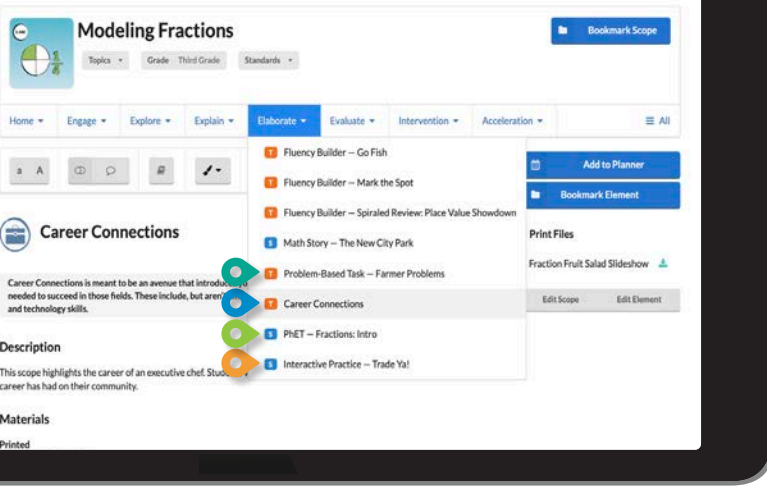
Read the passage and answer the questions that follow.

- The ladies of the local garden club have purchased an empty lot in the back of town. The lot is a rectangle shape. The long side of the lot is 95 feet, and the shorter side is 48 feet. The only things growing on the lot are a live oak tree and weeds. People have started dumping trash at the back of the lot. The ladies know that their town would enjoy a beautiful garden.
- Old pictures of the town show that the lot was once the yard of a house. The live oak tree was planted more than 70 years ago when the house was sold. Since then, several businesses have been vacant for many years.
- The plan for the new city park is to plant trees, a playground, and a grassy lawn will be built for you. Swings, slides, and a fort will be installed on the lot. A water fountain will be built under the old live oak tree. A water fountain will be built under the old live oak tree.
- The live oak tree will be the centerpiece for the park. Three Autumn Blaze trees will provide shade in the summer. Three red oak trees will provide shade in the fall. The line of trees will separate the park from the street.
- To attract butterflies, bees, and hummingbirds, the garden club has selected the right plants to grow. For the hummingbird garden, they have selected Summer trumpet vine, one hummingbird bush, and one packet to plant. Each seed packet contains 48 seeds. The garden club will grow coneflowers, sunflowers, black-eyed Susans, lantana, and Texas sage.

Plan for the New City Garden

Map Key

- Grass
- Playground
- Live Oak Tree
- Fountain
- Autumn Blaze Maple and Red Oak Trees
- Hummingbird Garden
 - Indian Summer trumpet vine
 - Hummingbird bush
 - Pineapple sage
- Bee-and-Butterfly Gardens
 - Coneflowers
 - Sunflowers
 - Black-eyed Susans



Elaborate Resources

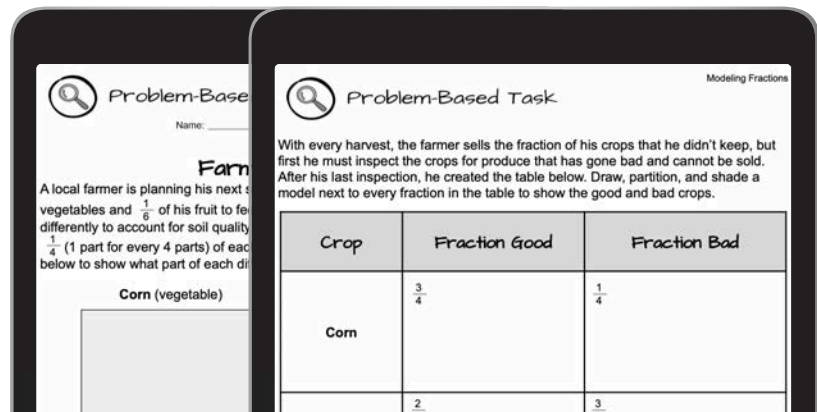
Problem-Based Tasks

Problem-Based Tasks invite your students to apply their skills to a new, open-ended task that can be approached in multiple ways and accommodate multiple responses. This resource does need to be downloaded and given to students because it is not assignable on STEMscopes.

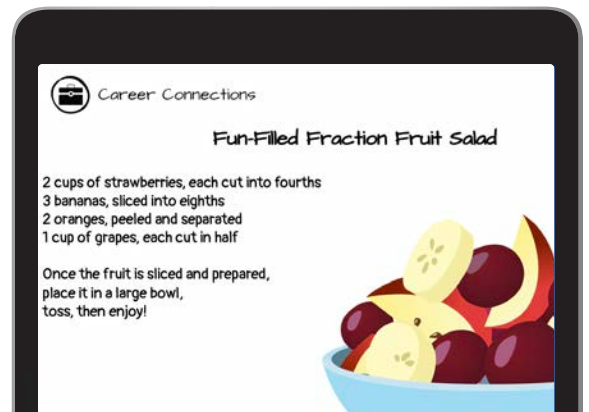
Career Connections

Career Connections introduces your students to mathematical careers and the 21st-century skills needed to succeed in those fields. These include creativity and innovation, critical thinking, problem-solving, and technology skills. This activity can be completed at home with the student's family. Even though you cannot assign the video to the students, they can still view the videos by navigating to their Visual Glossary, looking under "V" for the videos, and locating the title they are looking for.

Problem-Based Task Example

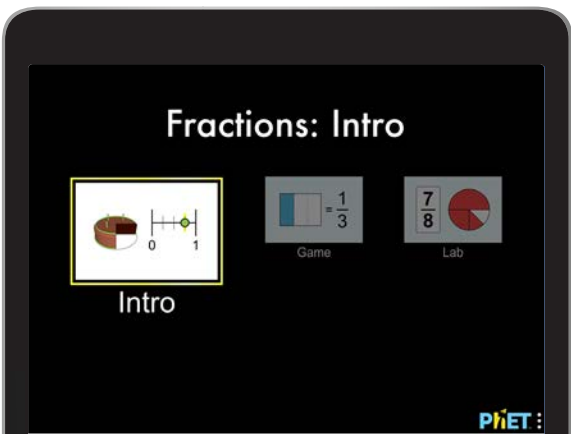


Career Connections Example

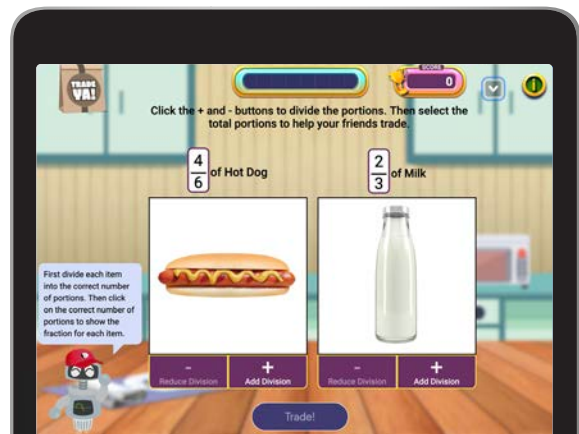


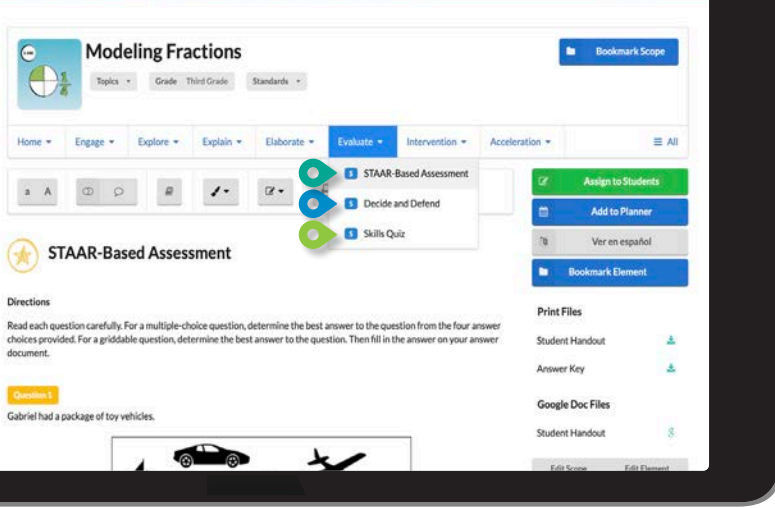
Students can continue to stay engaged through [PhET Interactive Simulations](#) and [Interactive Practices](#). Both of these resources require a web browser and are assignable to students. Since neither of these resources are Flash enabled, your students can utilize them on almost any device. Each scope has an Interactive Practice that is TEKS-aligned; Each scope has an Interactive Practice that is TEKS - aligned.

PhET Interactive Simulations Example



Interactive Practices Example





Evaluate Resources

Within the Evaluate toolbox you can find the assessment tools that will help you gather the data you need. From STAAR-based assessments to an open-ended reasoning prompt, there's an evaluation for every student's learning style.

STAAR-Based Assessment

STAAR-Based Assessment is a multiple-choice standards-based assessment where students demonstrate mastery of the content.

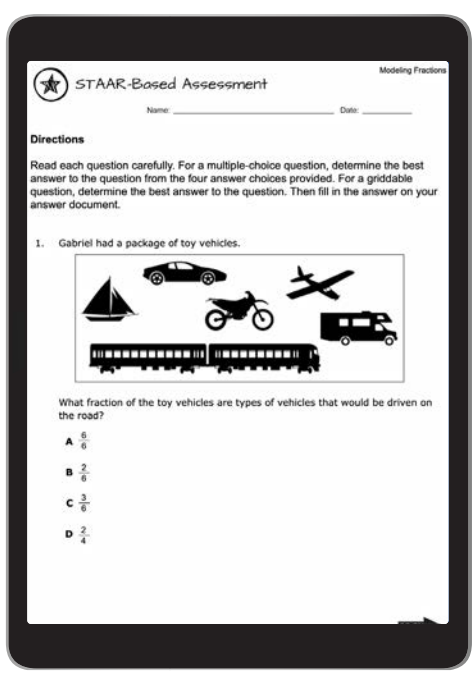
Decide and Defend

Decide and Defend is an open-ended assignment that allows students to reason mathematically and support their ideas with evidence.

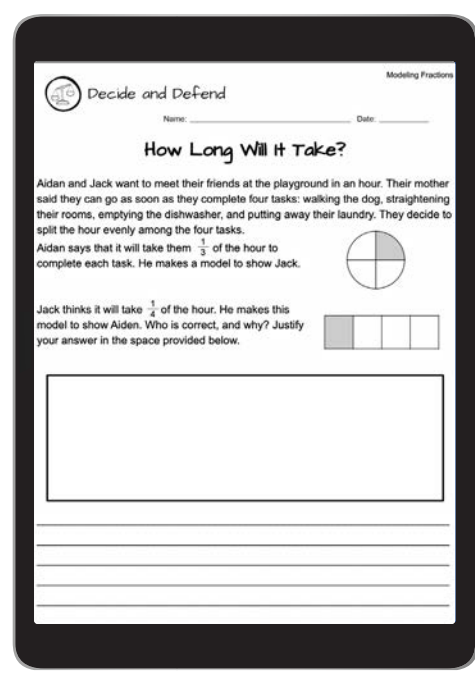
Skills Quiz

Skills Quiz is a short standards-based assessment that could be used to review the content learned throughout the scope. It doesn't address the problem-solving aspect of learning, but it enables students to demonstrate their ability to compute efficiently and accurately.

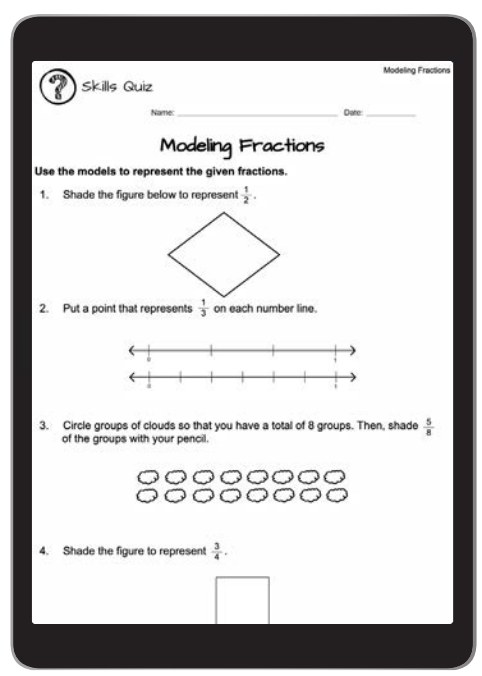
STAAR-Based Assessment Example



Decide and Defend Example



Skills Quiz Example



Modeling Fractions

Topics Grade Third Grade Standards

Home Engage Explore Explain Elaborate Evaluate Intervention Acceleration All

Math Today - Garden Fractions

Create Your Own

Bookmark Element

Print Files

Student Handout

Answer Key

Edit Scope Edit Element

Math Today - Garden Fractions

Description

Students will explore connections and applications of math and other cross-curricular content through interactions with authentic, real-world media provided by Associated Press.

Procedure and Facilitation Points

1. Allow students to view the video. Briefly explain that the children were invited to the White House to help plant gardens that attract butterflies and to show that people can grow their own food.
2. Discuss:
 - a. Let students share with "I notice..." and "I wonder..." statements. Ask students how math is used in this situation.
 - b. There were six big garden beds at the White House. Students planted seedlings in three of the beds, and the White House chefs planted seedlings in one of the beds. How many beds still needed to be planted?

Acceleration Resources

The Acceleration toolbox contains resources normally used by teachers to provide enrichment to students. However, these resources are also great for independent study and will support your high-achieving students.

Math Today

Math Today is a current event related to the math topic addressed in the scope. The photograph and/or video is assignable and can be printed out as a student handout. This provides a breakdown of the scope to use as a formative assessment for each student.

Math Today Example

Math Today Modeling Fractions

Name: _____ Date: _____

Garden Fractions

Many people plant gardens to help provide better food for their families and communities. Mrs. Obama planted a variety of crops at the White House for that purpose. Some of the different produce included bok choy and seasonings, such as thyme.

Use the graphic below to answer the following questions.

1. What fraction of the garden beds are shaded?
2. What fraction of the garden beds are growing fruit?
3. Cucumbers need a lot of room to grow, so fewer cucumbers were planted. If only 3 of the cucumber plants grew, write the fraction of the cucumber plants that did not grow on the number line below.

0 _____ 1
4. If you and 2 friends were to split the carrots (🥕), color in the boxes to show how many carrots you would get.

Many people plant gardens to help provide better food for communities. Mrs. Obama planted a variety of crops at the

