STEMscopes TEXAS MATH

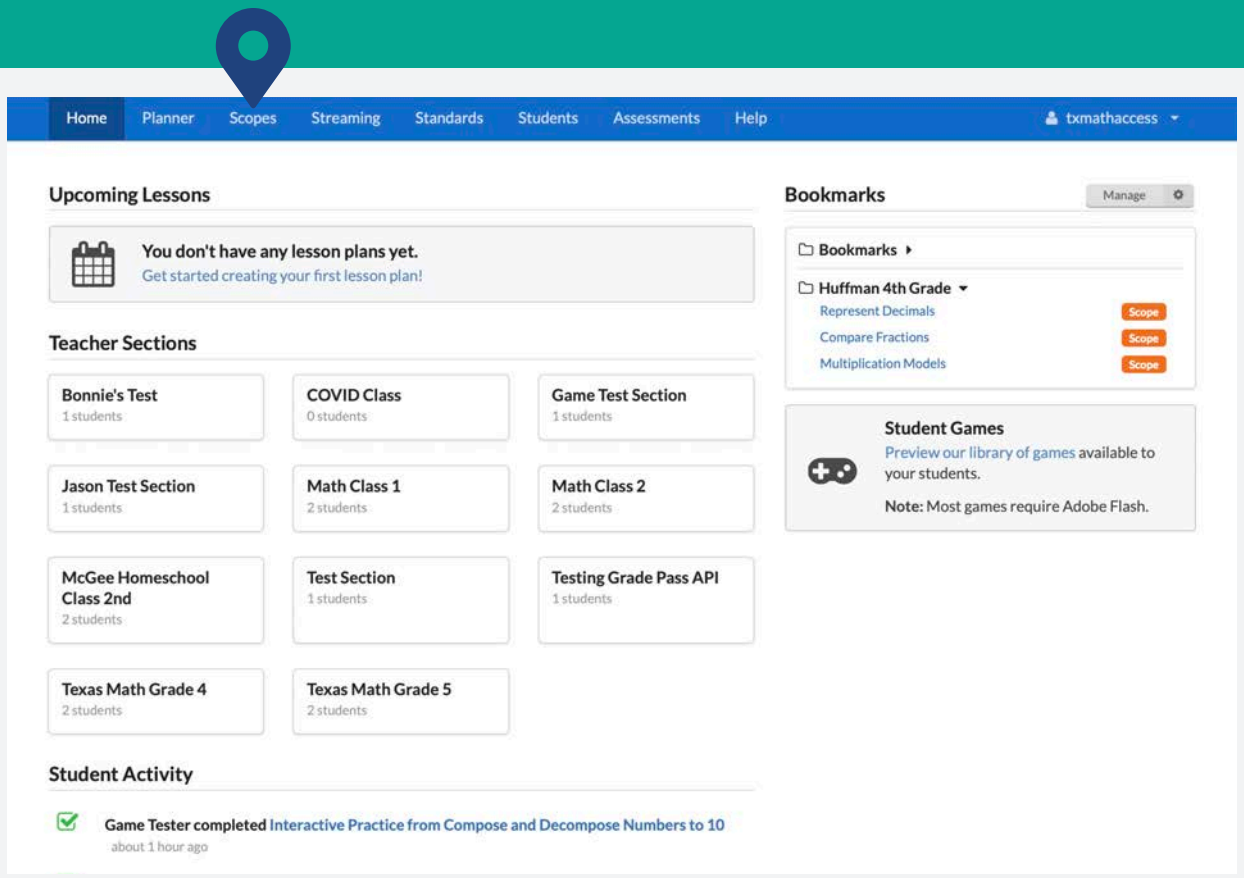
INDEPENDENT STUDY
Learning Resources

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.

Table of Contents

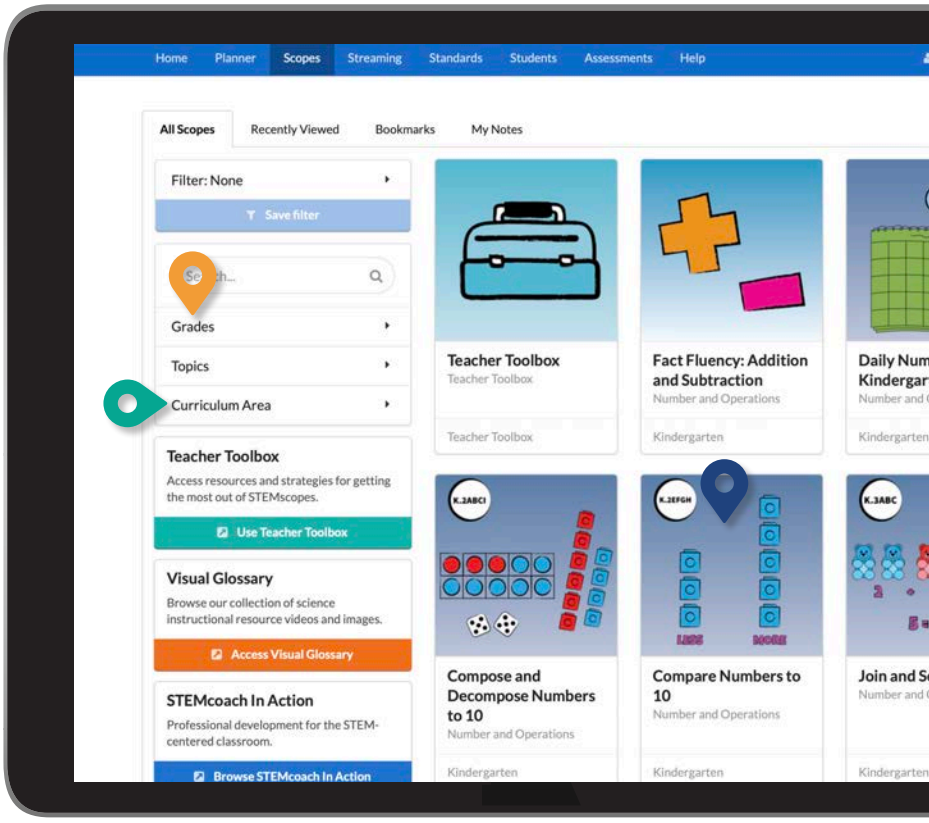
Every time you log into STEMscopes you will be greeted by the Home page. To access the curriculum, click on the Scopes tab.



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.

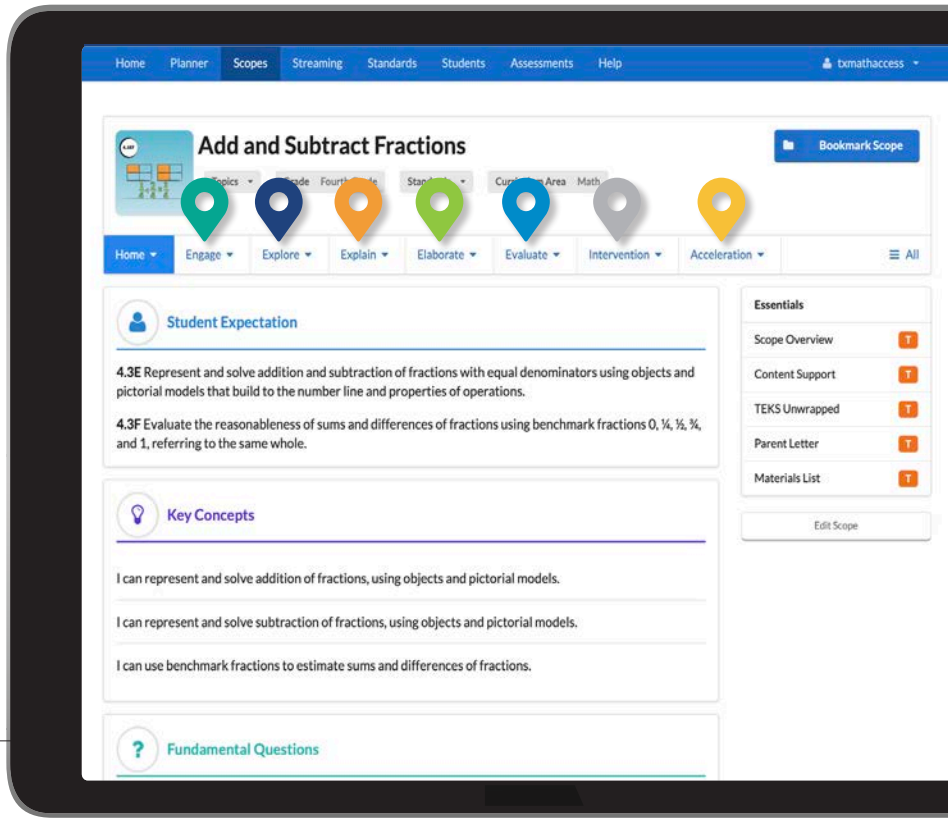
To access resources for a specific grade, select Math from Curriculum Area and then select the grade from the Grades drop down menus. Only math scopes from that grade level will appear in the Scope Index.



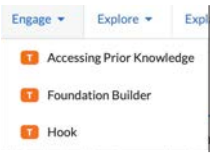
Scope **Landing Page**

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.



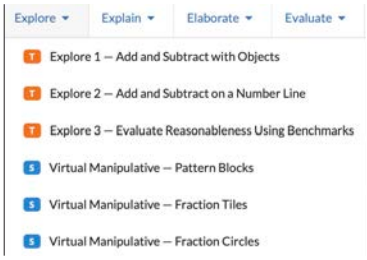
Engage Dropdown Menu

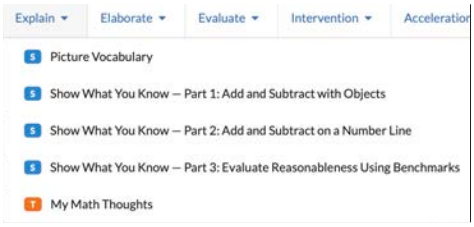


The resources in the Engage toolbox lay the foundation for learning and hook your students. You begin by preassessing students, which indicates to you where you need to fill knowledge gaps. Then conduct the Hook to lay out a narrative and establish a purpose for learning.

Explore Dropdown Menu

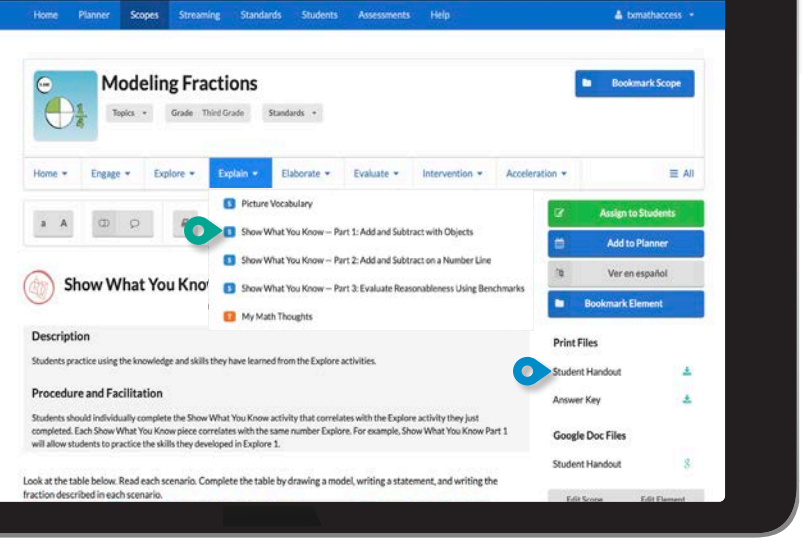
The resources in the Explore toolbox are a collection of hands-on, inquiry-based math investigations that form a basis for your students' understanding of the math concept. This section provides scaffolded hands-on activities that build toward mastery of the standards. Each Explore is equipped with mathematical 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**

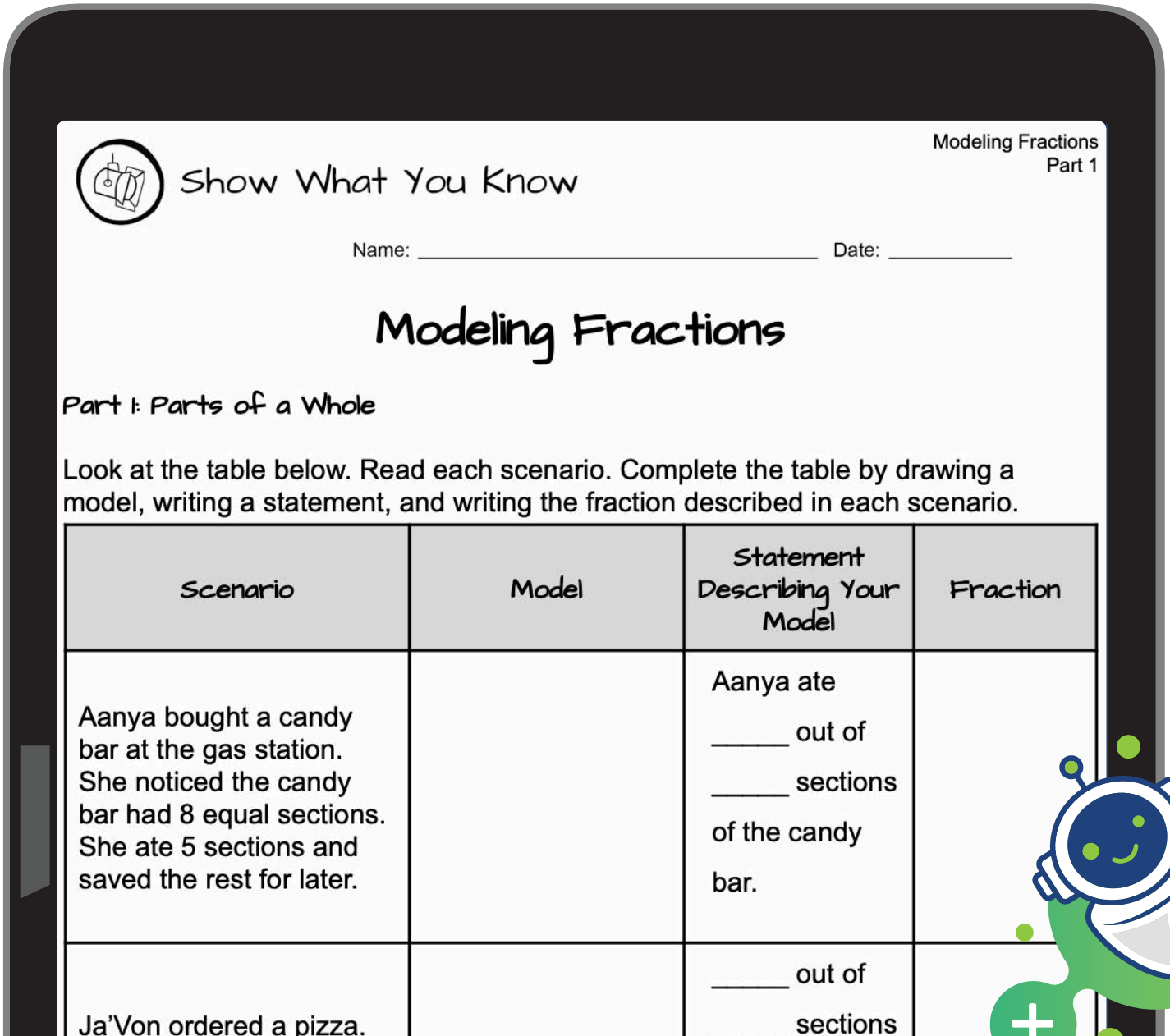
Show What You Know

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

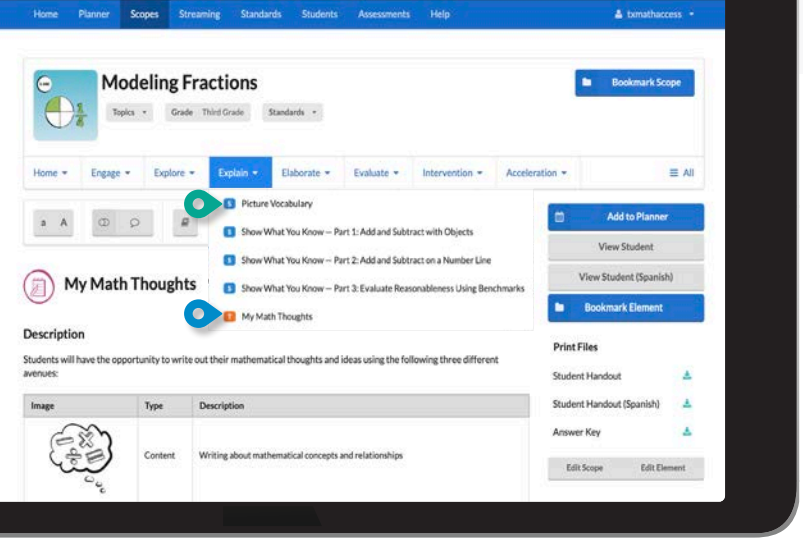
Name: _____ Date: _____

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
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.		Aanya ate _____ out of _____ sections of the candy bar.	
Ja'Von ordered a pizza.		_____ out of _____ sections	



Explain **Resources**

Picture Vocabulary

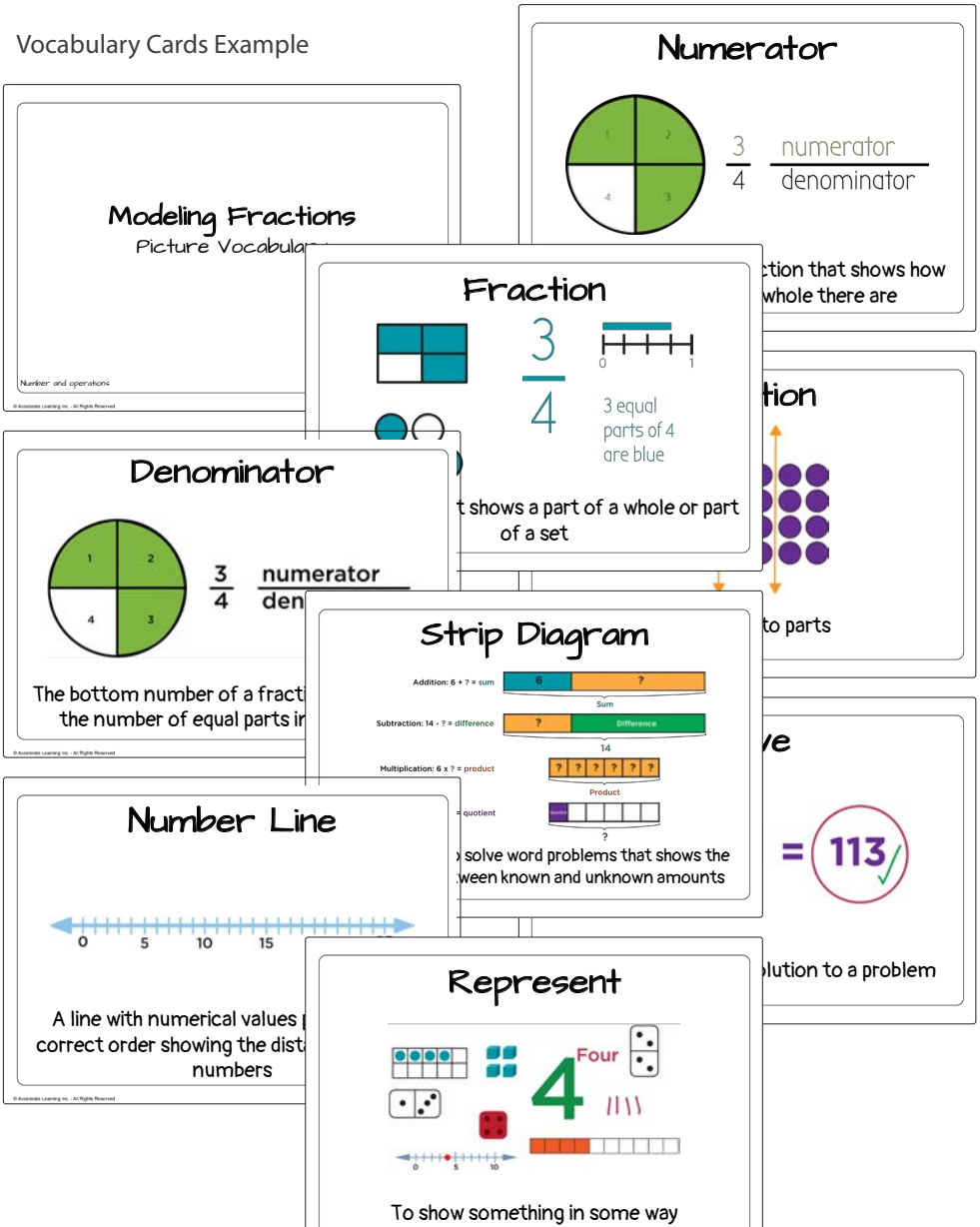
The Picture Vocabulary resource enables you to easily create vocabulary flash cards for students to practice with at home.

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.

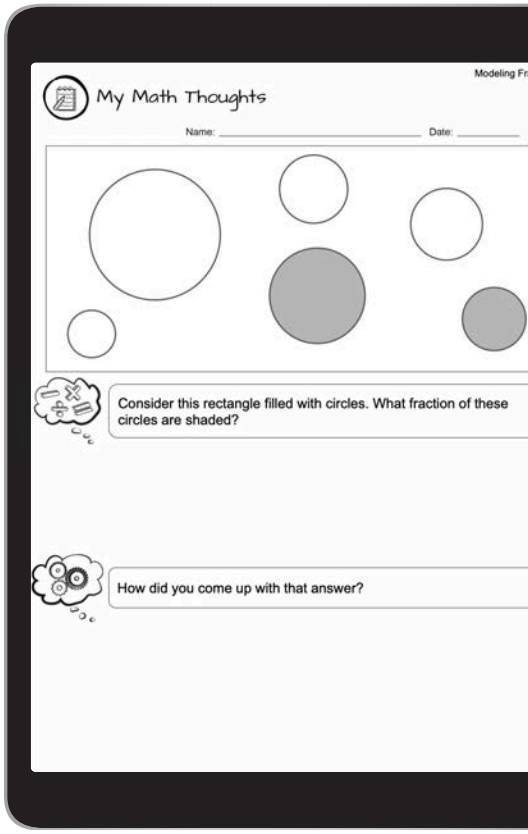
My Math Thoughts

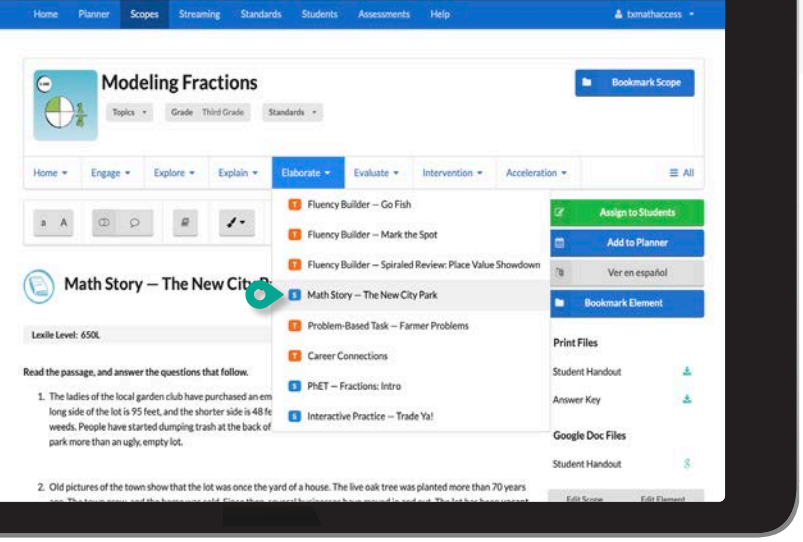
My Math Thoughts is a thoughtful activity for students. These exceptional journal prompts encourage students to write, using mathematical language.

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

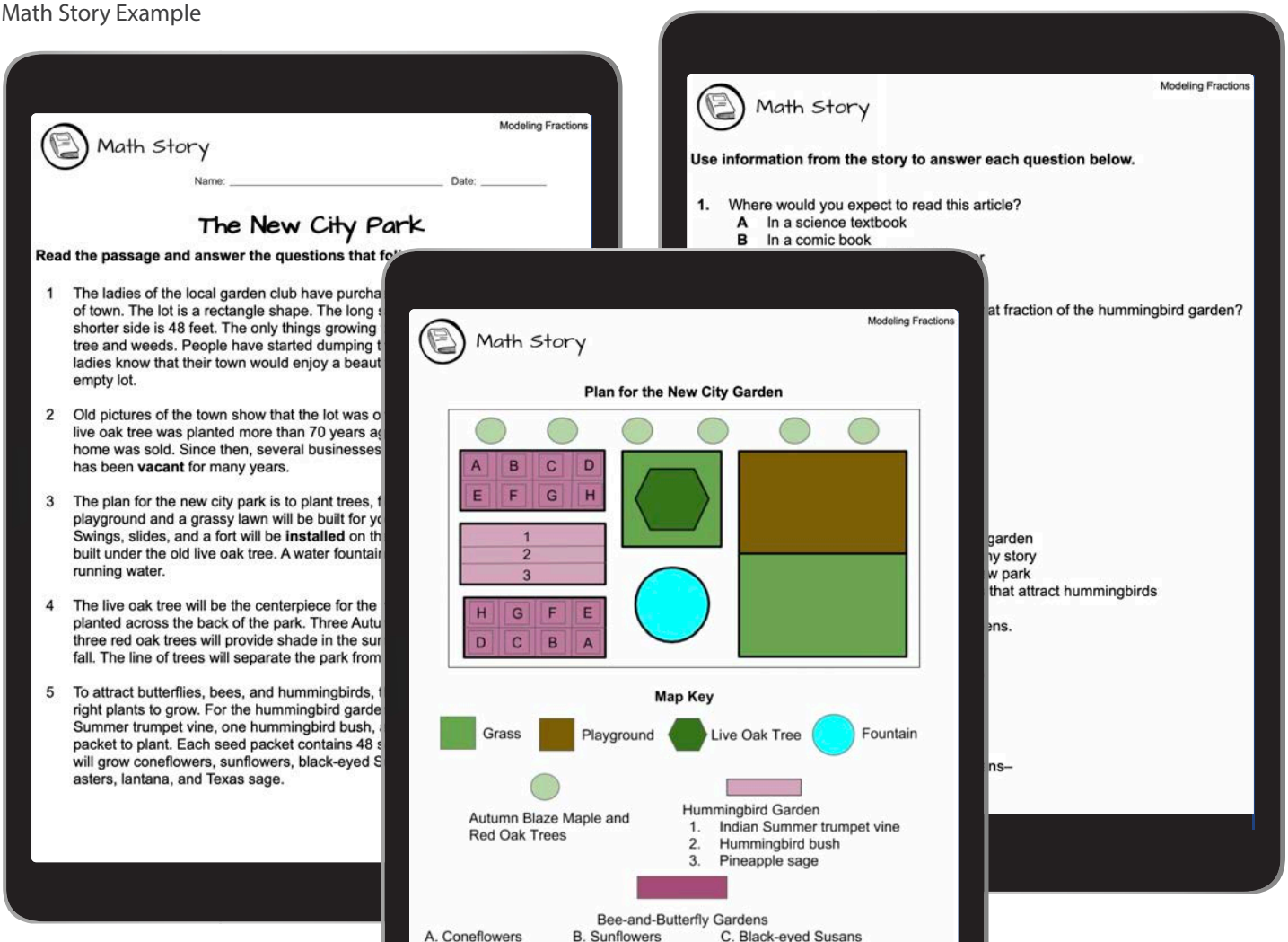
Math Story is an article that encompasses mathematical thinking and provides comprehension questions—especially helpful for ELA integration.

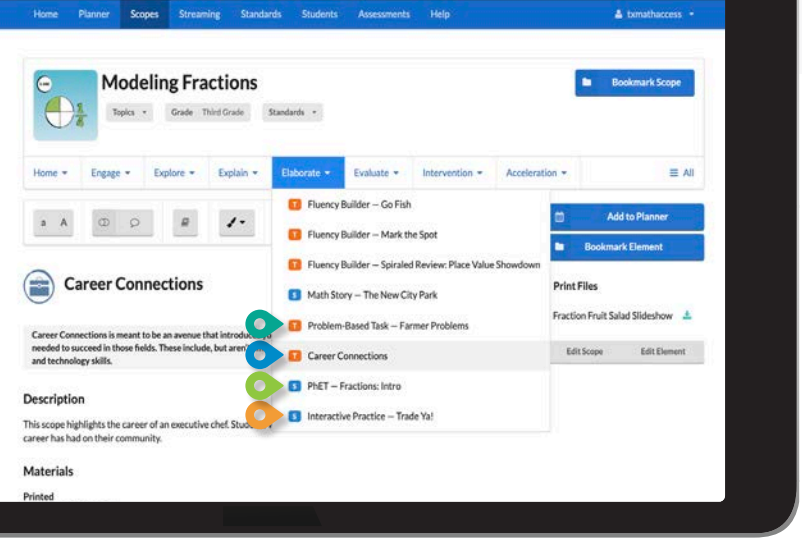
Every grade has a math story for each scope. Students do not have to have background knowledge about the math topic to comprehend the article.

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





Elaborate **Resources**

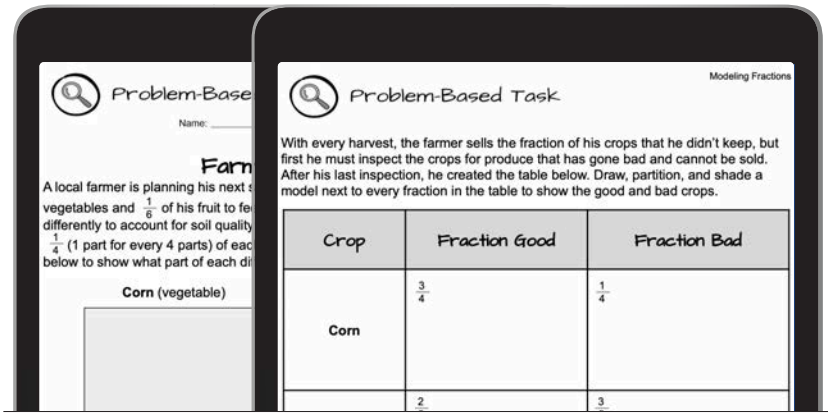
Problem-Based Tasks

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.

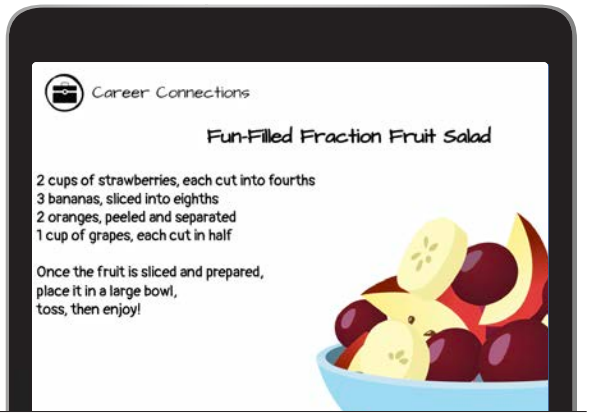
Career Connections

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

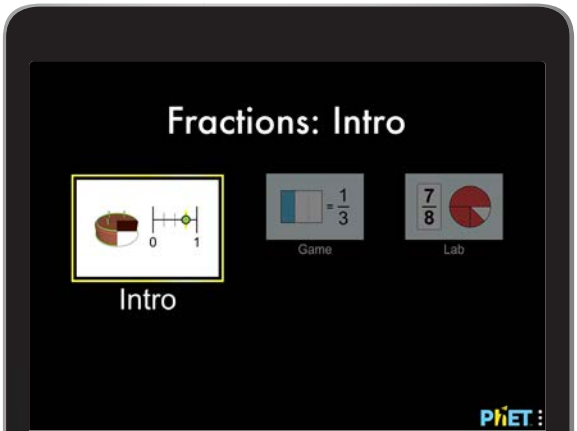


Career Connections Example

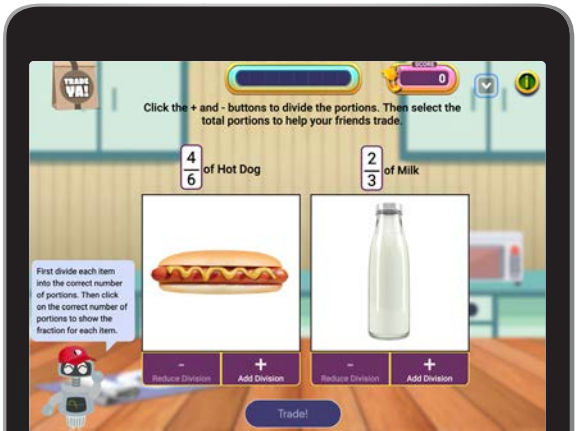


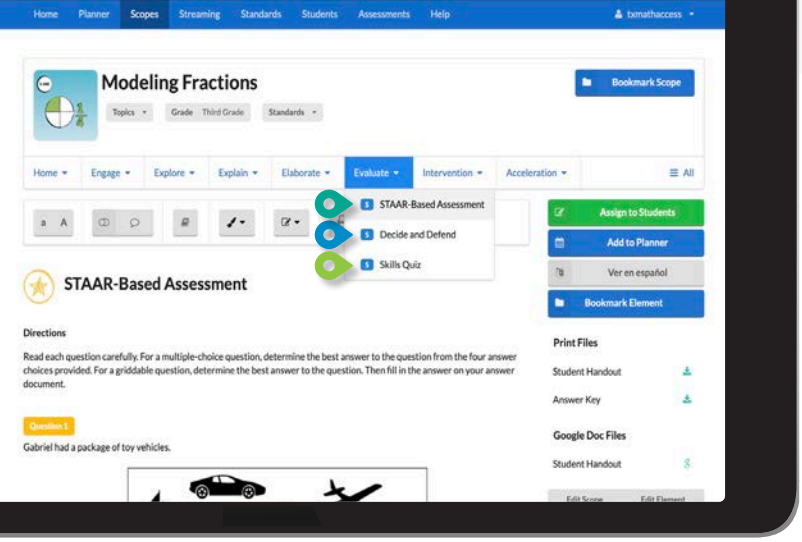
Students can continue to stay engaged through PhET Interactive Simulations and Interactive Practices. Both of these resources require a web browser and are assignable to students. Since neither of these resources are Flash enabled, your students can utilize them on almost any device. Each scope has an 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.

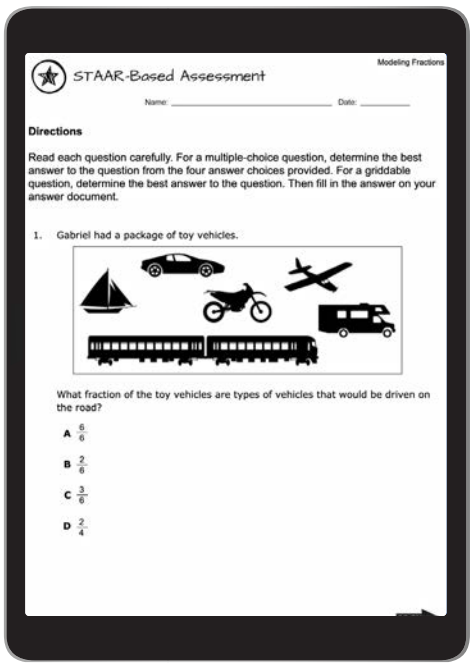
Decide and Defend

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

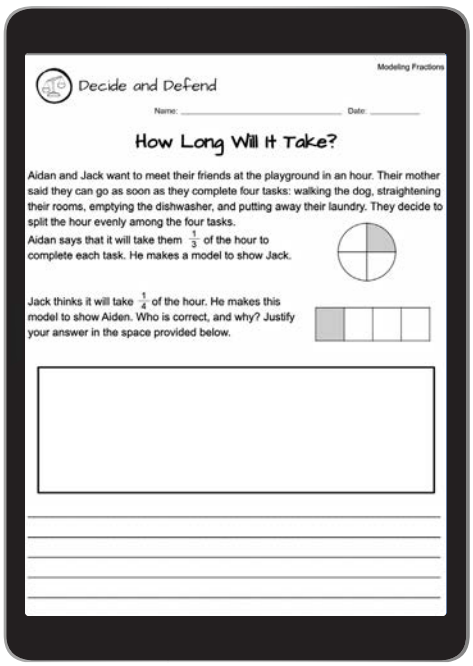
Skills Quiz

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.

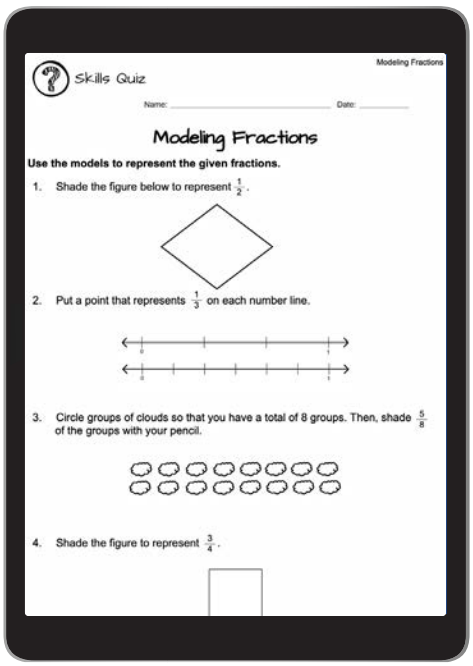
STAAR-Based Assessment Example

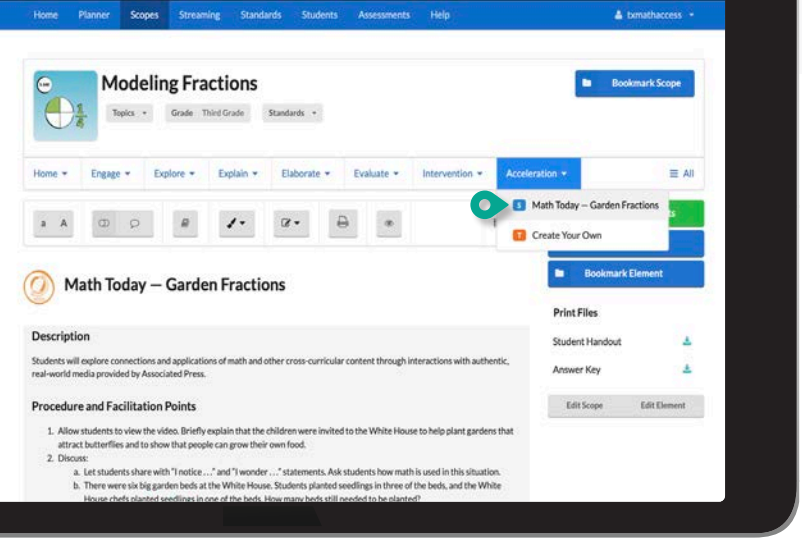


Decide and Defend Example



Skills Quiz Example





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