

# How to Plan Scaffolds: **Mathematics**

## Why use scaffolds?

Scaffolds allow all students to access grade-level content. At UnboundEd, we empower educators to address the predictability of student outcomes through evidence-informed, engaging, affirming, and meaningful grade-level — GLEAM™ instruction — so all students succeed academically. GLEAM instruction provides all students access to texts, tasks, and materials aligned with grade-appropriate college and career standards. For more information on GLEAM, see [What is GLEAM™ Instruction?](#)

## What are scaffolds?

Scaffolds are evidence-based practices that provide students support for unfamiliar or challenging aspects of a lesson. Effective scaffolds:

- Help students manage cognitive load — by freeing up working memory for new learning
- Preserve grade-level rigor
- Are gradually removed as students build proficiency

To better understand how scaffolds and modifications differ, see [Supports vs. Modifications: What's the Difference?](#)

Use our **How to Plan Scaffolds: Mathematics** tool to plan just-in-time scaffolds to support individual students with access to grade-level math learning.

## How do you plan scaffolds?

This three-step process for planning scaffolds aligns with the characteristics of effective scaffolds.

**Step 1** Determine which aspects of a task may challenge your students.

**Step 2** Choose scaffolds and adapt your task.

**Step 3** Review the impact of scaffolds.

# Step 1 Determine which aspects of a task may challenge your students.

One way to analyze a task or text is to examine its task construction and presentation. When considering task construction, think about the materials that you give students. When considering task presentation, consider how students will engage with the materials and each other. Then, consider the evidence you have from formative assessments, formal data, and your relationships with students. Look at the list below and choose one to three aspects that may challenge your students.

Task Construction	
<b>Task construction</b> scaffolds support students by altering the construction or structure of student tasks, texts, or materials.	<p>You can alter three elements of task construction to support student learning.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>Abstraction:</b> The degree of abstraction or concreteness a task entails</li><li><input type="checkbox"/> <b>Complexity:</b> The number of successive actions required to complete a task</li><li><input type="checkbox"/> <b>Definition:</b> The explicitness of the requirements or the solution process for a task</li></ul>

Task Presentation	
<b>Task presentation</b> scaffolds support students by altering how you present elements of the task, such as giving directions, grouping students, or interacting with the task on the page.	<p>You can alter three elements of task presentation to support student learning.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> <b>Familiarity:</b> The amount of active background knowledge students can apply to a task</li><li><input type="checkbox"/> <b>Independence:</b> The amount of work students do on their own</li><li><input type="checkbox"/> <b>Speed:</b> The amount of time students have to complete a task</li></ul>

What evidence shows that these aspects will be challenging for your students?

## Step 2 Choose scaffolds and adapt your task.

Based on the aspects of task construction and presentation and your understanding of student needs, determine the scaffold(s) you will use or want to have for just-in-time support.

### Math Examples of Task Construction Scaffolds

Abstraction	Complexity	Definition
<ul style="list-style-type: none"> <li><input type="checkbox"/> Allow students to use manipulatives alongside mathematical notation.</li> <li><input type="checkbox"/> Use equation mats or other visual organizers.</li> <li><input type="checkbox"/> Use tape diagrams or other pictorial representations alongside mathematical notation.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Chunk a multi-step problem into smaller, discrete problems.</li> <li><input type="checkbox"/> Use a three-read strategy for word problems.               <ul style="list-style-type: none"> <li>Read 1: Read for the story.</li> <li>Read 2: Read for quantities.</li> <li>Read 3: Read for questions and plan a solution.</li> </ul> </li> <li><input type="checkbox"/> Provide a less complex, related problem before providing the complex problem.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Provide a rubric for performance tasks or open-ended problem-solving.</li> <li><input type="checkbox"/> Provide a worked example for students to reference.</li> <li><input type="checkbox"/> Provide a table or graphic organizer with explicit space to work out each step of the problem.</li> </ul>

### Math Examples of Task Presentation Scaffolds

Familiarity	Independence	Speed
<ul style="list-style-type: none"> <li><input type="checkbox"/> Use a strategy such as “Notice, Wonder” to allow students to initially name what they know about a problem.</li> <li><input type="checkbox"/> Pre-teach new vocabulary and/or provide anchor charts with relevant definitions.</li> <li><input type="checkbox"/> Ask students what they know about the topic, such as the types of numbers and operations used in a word problem.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Allow students to discuss possible solution strategies in groups before solving independently.</li> <li><input type="checkbox"/> Have students solve problems in pairs but using one pencil.</li> <li><input type="checkbox"/> Allow students to use a calculator when appropriate.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Extend think time.</li> <li><input type="checkbox"/> Eliminate time constraints when appropriate (e.g., timed quizzes).</li> </ul>

Describe how you will use scaffolds to adapt your task.

## **Step 3** Review the impact of scaffolds.

Determine whether the implementation of your scaffold moved students toward grade-level standards or reduced the rigor of the task.

**How did you ensure students did the majority of the thinking required of the grade-level work within the task?**

**What is your plan to gradually remove this scaffold?**