

## PRINTABLE ARTICLE

# Planning Checks for Understanding in Math

## A Free Lesson Builder for Your Classroom

Model Teaching · 2026

[Read this article online](https://www.modelteaching.com/education-articles/math-instruction/planning-checks-for-understanding-in-math) · [www.modelteaching.com/education-articles/math-instruction/planning-checks-for-understanding-in-math](https://www.modelteaching.com/education-articles/math-instruction/planning-checks-for-understanding-in-math)

Consider this scenario. A third-grade teacher is about to begin a math lesson on finding the missing side length of a polygon when the perimeter and the other side lengths are given. She has taught perimeter over the last two days, and her lesson plan is ready. What she does not yet know is whether her students can still determine the perimeter of any object when given the length of all sides, whether they can add and subtract well enough to work with those numbers, or which two or three students will need her attention first once the new content begins. Without that information, she will find out the answers later, like in the middle of the lesson, or on the unit test, when it's too late to help her students in the moment. Effective checks for understanding come from strategic planning, beginning with what you want to test students on and ending with data gathered from every student about what they have learned and know from the lesson. The [Model Teaching Math CFU Lesson Builder](#) is a free planning tool that helps create a detailed plan to check for understanding in a specific lesson, aligned to your lesson objective or standard.

## What Checking for Understanding Is

A check for understanding is any method used to inform the teacher about the student's current level of knowledge and understanding. Teachers initiate all CFUs and expect a student response from every student in class. The terms "check(s) for understanding" or "methods to check for understanding" and "CFU" are used interchangeably in this article.

### ■ Formal assessments

Formal assessments are checks for understanding with a standardized format. Examples include asking each student the same question or having each student complete a short-answer reflection or quiz. Formal assessments are always aligned to a specific standard or objective and can be used for grading if desired.

### ■ Informal assessments

In contrast, informal assessments are checks for understanding that are used to monitor a student's readiness to continue with the lesson in more rigorous ways. They also sometimes have subjective answers and can include anecdotal notes based on the teacher's observations. While informal assessments can certainly provide you with valid data, they are not typically used as a grade.

In both cases, the main purpose of all checks for understanding is to collect data about student learning to determine what a student does and does not know. This data should then be used to drive future instruction.

CFU serves a specific purpose in an effective classroom. An effective teacher uses checks for understanding at least three times during a lesson plan for different reasons. CFUs should be used before the lesson to activate and establish background knowledge. These CFUs also ensure students have retained the knowledge and skills necessary to be successful in the lesson. Next, they are used during the lesson as well. This is to keep students accountable for creating, retaining, and communicating new conceptual understandings to the teacher. These CFUs also inform the teacher about struggling students who may need additional guidance or intervention. Finally, use CFU activities after the lesson to help students and the teacher reflect on what was learned. These CFUs also provide valuable information about student mastery and how the teacher should spend future classroom time. At a minimum, you should include one method to CFU before a lesson, two methods to CFU during a lesson, and one method to CFU after a lesson.

### One lesson, four checks THE MINIMUM PER LESSON

#### Before 1 CHECK

Activate and establish background knowledge; confirm students have the skills to succeed.

#### During 2 CHECKS

Keep students accountable for new understandings and spot students who need guidance or intervention.

#### After 1 CHECK

Reflect on what was learned; see mastery and plan future class time.

When students continue a lesson without first addressing misconceptions, the “wrong” information becomes more ingrained and harder to correct later. Regular checks catch these errors and misconceptions early, allowing you to quickly check in and re-teach a concept so students leave the lesson with a stronger understanding. This process helps ensure students truly master the lesson content you are teaching ([The Importance of Ongoing Checks for Understanding](#)).

## What the Research Says

You might be wondering whether checking for understanding is one of those practices that sounds good in theory but has never been well tested. It is actually a very well-researched topic with consistent results spanning decades of work.

One large study in 1998 showed that collecting evidence of student learning and using it to adjust instruction resulted in large achievement gains. Most interestingly, the largest gains came from students who were furthest behind. In an Edutopia article that summarized that review, we understand that when formative assessment is implemented correctly and with fidelity, student learning gains can roughly double ([A summary of that review](#)). What’s important, of course, is how formative assessments are used. By checking on students in the moment and adjusting instruction immediately rather than waiting, you can help students correct misconceptions early and improve their understanding.

So what does “using the information” look like inside a lesson? Effective teachers ask many questions and check every student’s responses, not just a few volunteers. In contrast, less effective teachers ask fewer questions and only accept answers from a few students, assuming the rest of the class knows the answers ([Principles of](#)

[Instruction](#)). Sampling widely from all students in a class instead is a better way to check for understanding. A useful way to state the same idea is to implement CFU questions and activities that measure every student, every time.

The question you actually ask your students is also incredibly important! Making sure you ask questions that help you learn about your student's understanding is critical ([Read about the Right Questions, the Right Way](#)). Creating well-designed questions to insert into a lesson at a point that lets you know whether you need to reteach concepts helps you decide whether to move on or revisit a topic. A good question can be answered by every student in a very short amount of time.

#### ■ Closed questions

Closed questions usually have one correct answer, can be answered in one or two words, and are typically lower-rigor questions.

#### ■ Open-ended questions

Open-ended questions can usually be answered correctly in many different ways. These questions encourage discussion of the ideas being presented and are considered more rigorous.

**You need both kinds of questions throughout your lesson!**

What happens after you check in on your students is the other component to consider. Providing feedback is an important factor in student achievement because it helps students immediately understand what they are doing well and what they still need to improve ([Feedback for Students](#)). If a CFU reveals misconceptions about concepts or content, the teacher should address them immediately rather than wait until the next lesson. When students keep working through their misconceptions instead of stopping to fix the misunderstanding, the “wrong” information can become more ingrained and harder to correct later.

#### THE TAKEAWAY

**The takeaway is to check in on every student in every lesson, and to check in at points in your lesson when you need to decide whether to continue, re-teach a concept, or address misconceptions.**

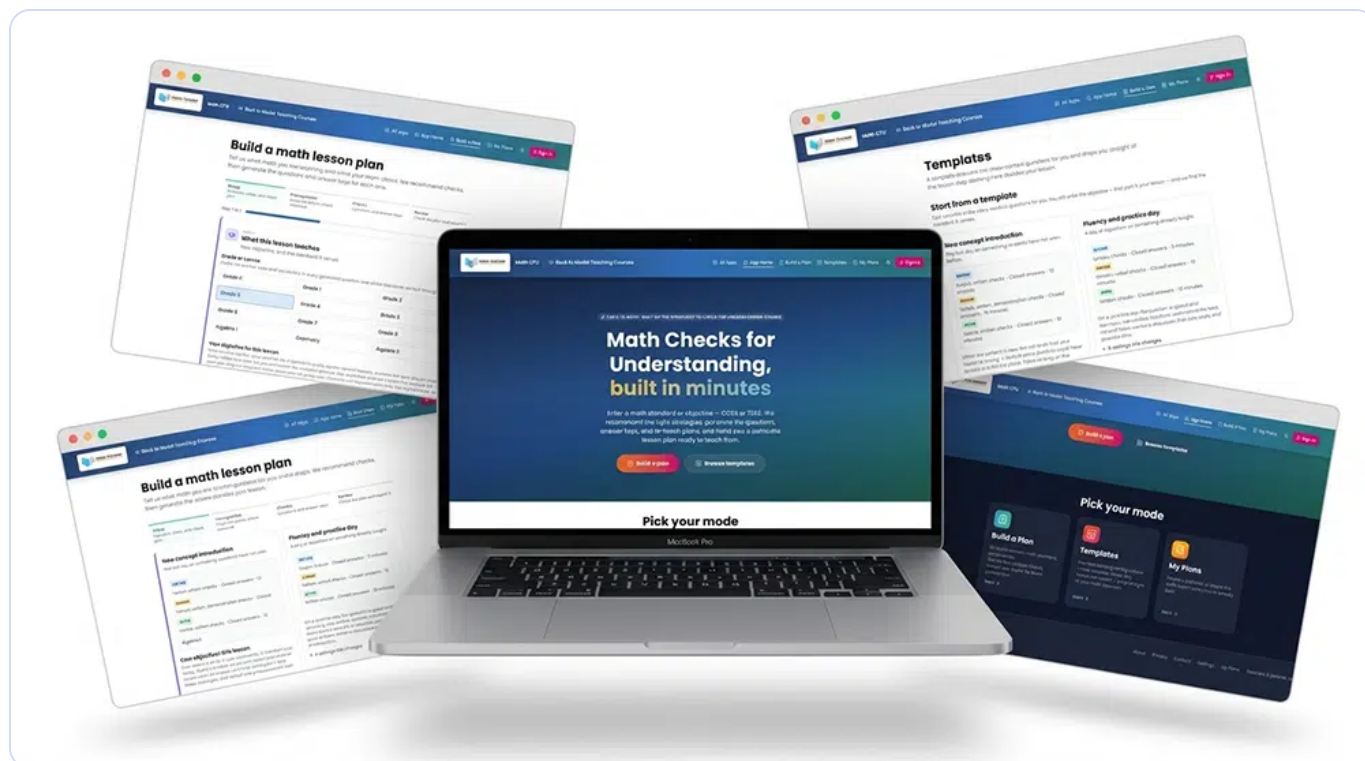
## How the Model Teaching Math CFU Lesson Builder Supports This Research

When building methods to check for understanding in each lesson, some general steps are typically followed:

- 1 Verify that your chosen questions and activities to help you check for understanding are aligned to the students' learning goals of the class content for the day.
- 2 Define the end learning goal of the CFU activity for each student.
- 3 Determine what kind of measurable data you want and how you will communicate it.
- 4 Choose the type of assessments that measure the teacher's end goal at each part of the lesson.
- 5 Implement CFU activities that measure every student, every time.

These steps, or variations of each step, are research-backed steps that can help you identify and address student misconceptions throughout your lesson.

The provided features in the Model Teaching Math CFU app below are tied to these steps. Note that while these steps apply to any content area, this app is specific to Math lessons. We designed and built this app to be more specific to the math content area and to provide more robust recommendations and strategies for checking student understanding in math.



### Standards, objectives, and prerequisites

First, you determine a standard/your objective for an upcoming lesson, and the tool lists the prerequisite skills your students need before the new content.

### Before, during, and after checks

Each plan includes one check before the lesson, two during the lesson, and one after the lesson. Before a lesson, the purpose is to activate and assess background knowledge. During a lesson, the purpose is to monitor student learning and correct misconceptions as they arise. After the lesson, the purpose is to ensure that all students have mastered the content and learning objectives.

### Recommended strategies

For each check, the tool suggests a verbal, written, or demonstration strategy that fits that point in the lesson. Before a lesson, verbal or written strategies quickly provide the teacher with information. After a lesson, written or demonstration strategies show the student's level of mastery. You can also swap any strategy for one you prefer.

### Questions and answer keys

Each check comes with generated questions and answer keys. You are also provided what an acceptable response looks like before the lesson, so that you are clearly aligning the content you plan to teach with the checks you implement throughout your lessons.

**Mastery thresholds**

Each check describes a clear target, such as at least 4 out of 5 correct or 80% or higher accuracy on 5 sample test questions. This gives you measurable data you can immediately use to inform your instructional decisions.

**Re-teach plans**

Each check includes suggestions for students who do not meet the target. If only a few students have not mastered the content, you can pull them aside for small-group intervention or one-on-one guidance. If the majority of the class has not mastered the content, you will need to stop the lesson and plan a way to reteach with a new strategy.

**Export and save**

A Check for Understanding lesson plan is generated and can be exported to Word or PDF for printing or sharing with your team. “My Plans” allows you to save cached plans into your browser so you can reopen or duplicate the lesson plans you have already built.

## How to Use the Lesson Builder in Your Classroom

The tool works best as part of a regular planning routine that you can design alongside your daily lesson plans.

**1 Build a plan for one lesson a week**

Choose an upcoming math lesson by selecting your math standard/objective, prerequisites, and before/during/after checks. Adjust any question or mastery criteria if you wish, then generate and print the plan. After your lesson, you can note which checks gave you useful data. Repeat this process for each lesson you teach.

**2 Use the prerequisites provided to plan your warm-up**

The before-lesson check allows you to evaluate whether students have the prerequisite skills for the day's lesson. You can take the prerequisite skills the tool identifies and turn the before check into a short warm-up using additional response tools like whiteboards or response cards ([response cards](#)). If a check for understanding reveals a majority of students have forgotten prior knowledge or are unprepared for the lesson, you must be willing to review, reteach, and re-practice the required skills before continuing with the lesson.

**3 Embed your during-lesson checks into your content lesson**

The two during-lesson checks are used when you create a natural stopping point in your lesson to determine if your students understand the material so far. You can be strategic about where to implement these two checks in your lesson. Depending on how your students respond, you will know if you need to re-explain or re-teach a concept, or whether it is safe to move on.

**4 Use the after-lesson check as an exit ticket**

The final check you administer to your students in each plan can be used directly as an exit ticket ([exit ticket](#)). The exit ticket lets you know if your lesson was successful and helps to inform you about how you should structure or modify the next day's planned lesson. Because of this, evaluating the student responses in that moment or on the same day is critical for your future lesson planning.

**FREE PDF DOWNLOAD**

For teachers who want a broader menu of strategies to draw from, our [Check for Understanding Strategy Guide](#) is a free downloadable PDF that lists over 30 different CFU strategies you can easily implement into your daily lessons if you prefer to design your checks completely on your own.

## Considerations and Model Teaching Recommendations

Your instruction remains the primary method for helping your students master math content. This Math CFU Lesson Builder helps you plan the checks around your lesson to ensure you know exactly what each student knows and does not know. The explanation, modeling, and guided practice you implement within the lesson between each of these checks for understanding are based on your own experience and designs. Because of this, the checks provided in this app are only as useful as the teaching they will measure, so be sure to seek out additional support in your lesson delivery if you need it. Below are a few considerations and recommendations for you as you plan to implement checks for understanding into your lessons.

**Measure every student, every time.**

A check that only some students complete cannot provide you with an informed idea of the performance of your entire class. For example, if a teacher only has the students share their work with each other, she would not be able to collect any data or know where each student stands. Make sure you build in explicit moments where you can evaluate every student's responses.

**Keep checks short and frequent.**

A before check should take about five minutes; during checks should fit into the natural pauses of instruction and integrate well into your lesson sequences for the day; and an after check of three to five questions is usually enough to evaluate your class's general understanding of the lesson content. Your goal is to quickly check in on your students' understanding so you can gauge the effectiveness of your lesson and decide whether to move on or pause and re-teach.

**Act on the data right away.**

CFUs are used to inform instructional decisions, even when those decisions mean stopping the lesson for one or more students. If checks for understanding reveal that many students have not achieved content mastery, you will need to reflect on your lesson and analyze which skills your students need to keep practicing. While the tool recommends strategies you can implement for your students, you ultimately know your students best, so adjust instruction when your judgment tells you to.

## Getting Started

### FREE · NO ACCOUNT NEEDED

The Model Teaching Math CFU Lesson Builder is available at [apps.modelteaching.com/cfu-lesson-builder](https://apps.modelteaching.com/cfu-lesson-builder). You can use it in three ways:

[Build a Plan](#)[Access Pre-Built Templates](#)[Revisit previous saved plans](#)

The app is free, needs no account, and works with your lesson objective to customize recommendations for your lessons' checks for understanding.

## Frequently Asked Questions About Checking for Understanding in Math

### What is a check for understanding?

A check for understanding is any method used to inform the teacher about the student's current level of knowledge and understanding. Teachers initiate all CFUs and expect a student response. They can be verbal, written, or demonstration, and they can be closed (one correct answer) or open (many correct answers).

### How many checks for understanding should a lesson include?

At a minimum, Model Teaching recommends that you should include one method to CFU before a lesson, two methods to CFU during a lesson, and one method to CFU after a lesson. Each type serves a different purpose: before a lesson helps to activate and assess background knowledge, during a lesson helps to monitor student learning and correct misconceptions as they arise, and after a lesson helps to ensure that all students have mastered the content and learning objectives.

### What should I do if most of the class misses a check?

If the majority of the class does not master the new content, you will need to adjust the lesson and plan a way to reteach with a new strategy. If just a few students have not mastered the content, you may instead opt to pull them aside for small group intervention or one-on-one guidance. The Lesson Builder includes a re-teach plan for each check so you have a clear plan of action before you begin your classroom lesson.

### Can I change the strategies or questions the app recommends?

Yes. The tool recommends verbal, written, or demonstration strategies and generates questions, answer keys, and mastery thresholds for your chosen standard or objective, but you can edit each one. Use your knowledge of your students to adjust the strategy, the questions, or the threshold before you export the plan.

### Is the Model Teaching Math CFU Lesson Builder free?

Yes. The app is free and requires no account to get started.

## References

Aguilar, Elena. "Do You Check for Understanding Often Enough with Students?" *EduTopia*. <https://www.edutopia.org/formative-assessments-checking-for-understanding-strategies>

Black, Paul, and Dylan Wiliam. "Inside the Black Box: Raising Standards Through Classroom Assessment." *Phi Delta Kappan* 80.2 (1998): 139–148.

Ferlazzo, Larry. "Are Students Really Learning? How to Check for Understanding." *Education Week*, 2026.

<https://www.edweek.org/teaching-learning/opinion-are-students-really-learning-how-to-check-for-understanding/2026/02>

Finley, Todd. "Dipsticks: Efficient Ways to Check for Understanding." *Edutopia*, 2014. <https://www.edutopia.org/blog/dipsticks-to-check-for-understanding-todd-finley>

Fisher, Douglas, and Nancy Frey. *Checking for Understanding: Formative Assessment Techniques for Your Classroom*. 2nd ed. ASCD, 2014.

Hamilton, Laura, et al. *Using Student Achievement Data to Support Instructional Decision Making*. IES Practice Guide, NCEE 2009-4067. National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, 2009. <https://eric.ed.gov/?id=ED506645>

Hattie, John. *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Routledge, 2009.

Hattie, John, and Helen Timperley. "The Power of Feedback." *Review of Educational Research* 77.1 (2007): 81–112.

Model Teaching. "The Importance of Ongoing Checks for Understanding." *Model Teaching*, 2019.

<https://www.modelteaching.com/education-articles/teaching-strategies/the-importance-of-ongoing-checks-for-understanding>

Rosenshine, Barak. "Principles of Instruction: Research-Based Strategies That All Teachers Should Know." *American Educator* 36.1 (2012): 12–19, 39.

Wiliam, Dylan. "Designing Great Hinge Questions." *Educational Leadership* 73.1 (2015): 40–44.

**Suggested citation:** Model Teaching. *Planning Checks for Understanding in Math: A Free Lesson Builder for Your Classroom*. Model Teaching, 2026. <https://www.modelteaching.com/education-articles/math-instruction/planning-checks-for-understanding-in-math>

Model Teaching provides online professional development for K-12 educators, with PD clock hours and graduate credit. Try the free Math CFU Lesson Builder at [apps.modelteaching.com/cfu-lesson-builder](https://apps.modelteaching.com/cfu-lesson-builder).