This module suggests ways for students to practice math facts and also includes fifteen full-color posters for addition terminology, strategies, and math facts.

Overview

A quick and efficient recall of math facts enables students to devote more of their cognitive resources to conceptual learning and procedural knowledge. Proficiency with whole numbers is also foundational to acquiring proficiency with fractions, decimals, and algebra.

Math facts have been traditionally presented in charts for memorization. Although automaticity is important, the Math-U-See program emphasizes conceptual understanding as the critical first step. Mastering math facts through the use of strategies helps develop deeper number sense. Only once a math fact and its accompanying strategy have been explicitly taught to a student and then practiced with the blocks is it appropriate to introduce practice to improve fluency.

Math Facts Instruction

Systematically teach the math facts with their specific strategies. Addition and subtraction are found in *Alpha*. As each addition fact is taught, hang the corresponding fact poster on the wall; it can serve as a prompt or reinforcement when students are struggling. The *Gamma* and *Delta* levels contain the multiplication and division facts respectively.

Instruction that facilitates learning and retaining facts includes:

- Explicit teaching and modeling of fact strategies
- Linking strategic understanding with visual representation through the Build, Write, Say process
- Practicing to mastery through use of new and review facts
- Frequent, short periods of practice
- Application of basic facts to different place values

  Example: 4 + 5, 40 + 50, 400 + 500

Suggestions for Math Facts Practice

1. Daily Five-Minute Reinforcement Activities and Math Games

   Have students practice targeted math facts as a group or with partners.

   Frequent, short periods of practice are effective for retention. Rotate students through learning centers and take advantage of the Clean Up and Closure time at the end of a class period. Keep it simple and fast-paced. See the Learning Activities module for applicable learning center ideas.

2. Online Drills Application

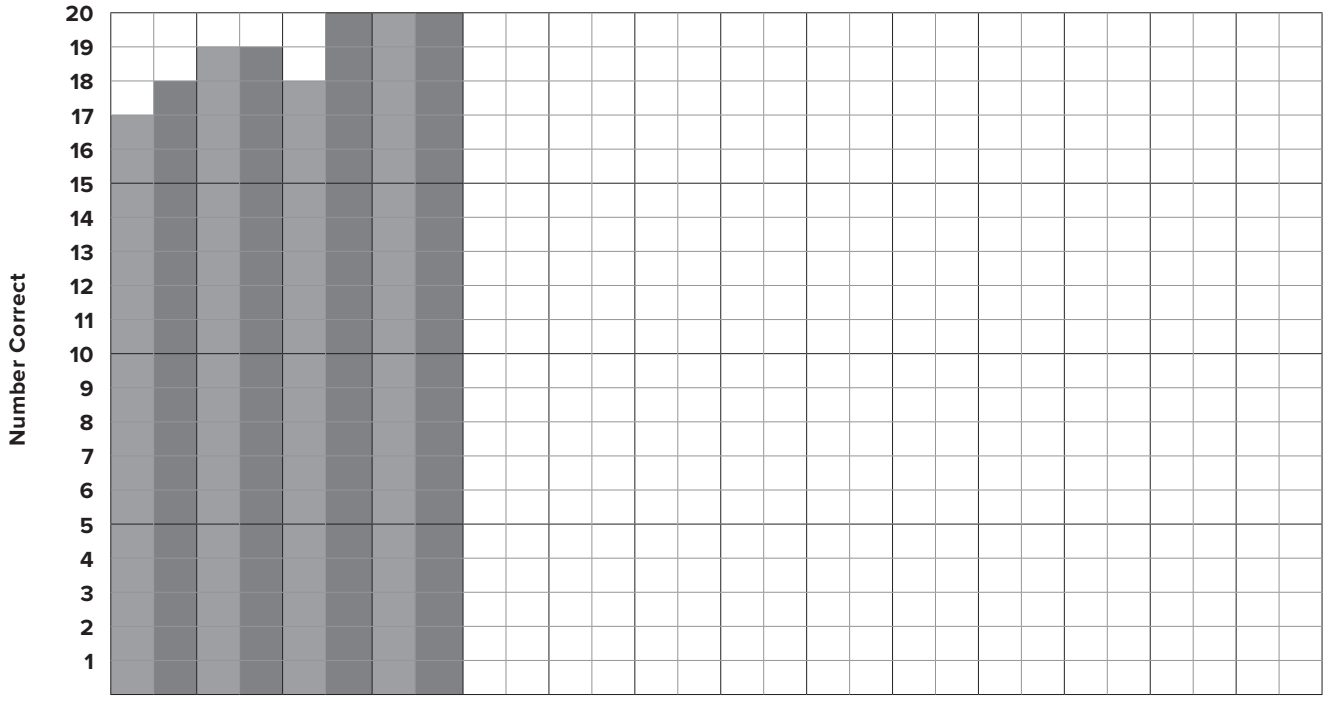
The Online Drills Application allows students to focus on specific sets of facts, operations, or a combination. The application presents the student with 20 fact problems. If the student responds incorrectly to a problem, a pop-up window will display the correct fact equation. At the conclusion of 20 problems, a pop-up will display the number of problems answered correctly along with the elapsed time.

Once a student has been taught a math fact and its accompanying strategy explicitly with the manipulatives and has practiced it with the blocks, they can use the Online Drills Application to practice that fact. The Online Drills Application may be accessed through the online Professional Access. Teachers may then set up a bookmark with the direct link, and teach students to access the drill independently.

In a given day, it is best for the student to drill the same set of facts twice, recording their time and accuracy scores for both rounds in the same column on the Student Computer Drill Graph. (See sample below.) A blank copy of the graph is found in this module or it can be downloaded from the online Professional Access. Students may find self-graphing motivating. While working toward improving fact fluency, it is important to emphasize accuracy over speed.

Sample Computer Drill Graph

Name Sophia



Time (Seconds)														
1	285	150	148	100										
2	185	152	145	102										

Math Fact	+8	+8	+0 to +8	+0 to +8										
Date	10/15	10/16	10/17	10/18										

3. Worksheet Generator

   The Worksheet Generator allows the teacher to create worksheets from one lesson or a range of lessons. (Please note that not all lessons or levels are included.) The number of rows and columns of problems, ranging from two to five, can be specified. Once a student has been taught a math fact and its accompanying strategy explicitly with the manipulatives and has practiced it with the blocks, they can use worksheets created by the teacher using the Worksheet Generator to practice that fact. The Worksheet Generator can be accessed through the online Professional Access.

Students can use the applicable Facts Sheet from their Student Workbook (and also available as a downloadable PDF in the online Professional Acesss) to record their progress in math fact mastery.