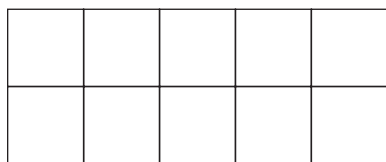


How to Use This Book

What is a Ten-Frame?

Ten-Frame

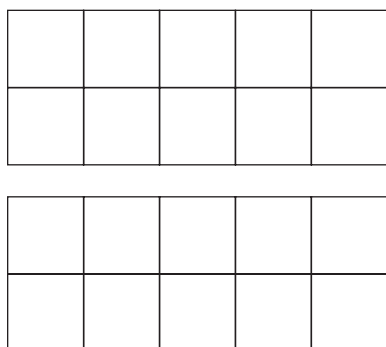
This is a ten-frame:



A ten-frame is a five-by-two array used to support the development of the important landmark numbers five and ten. In most of the lessons in this book, the ten-frame is positioned horizontally and filled with counters placed from left to right and top to bottom. In lessons designed to help students visualize numbers, counters are randomly placed on the ten-frame.

Double Ten-Frame

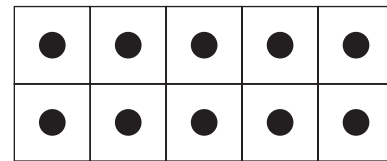
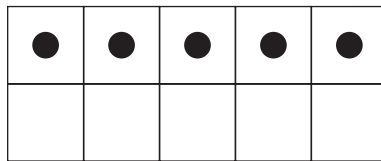
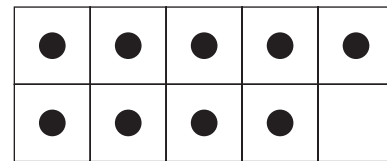
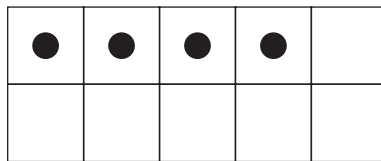
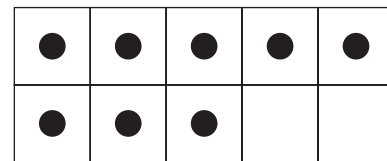
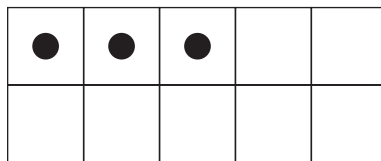
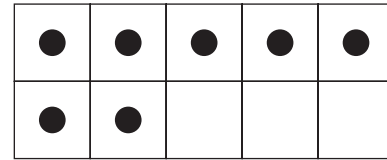
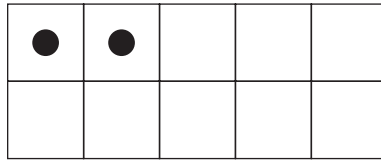
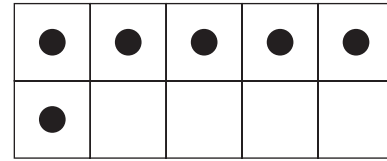
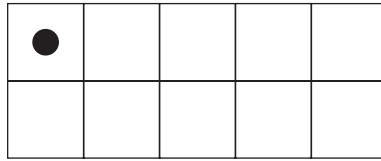
This is a double ten-frame:



A double ten-frame is two ten-frames used to support the development of the important landmark numbers ten and twenty. It is also designed to support addition strategies (such as making a ten) and place-value ideas (such as building fourteen using one ten-frame filled with ten counters and a second ten-frame filled with four counters).

Ten-Frame Cards

These are ten-frame cards:



A complete set of ten-frame cards is four copies of Reproducible B. When the cards are cut apart, each deck should have forty cards ranging from one dot to ten dots. Ten-frame cards are used during lessons and activities to develop fluency with addition facts.

Why Use Ten-Frames?

State standards require students to solve addition and subtraction problems using a variety of strategies, including models. Ten-frames are a model to help students efficiently gain and develop an understanding of addition and subtraction. The lessons in this book use ten-frames to develop students' natural strategies for adding numbers. You'll find that the lessons fit into any set of state standards or curriculum. (See the "Chapter Connections to the NCTM Focal Points, K–2" table on page xxi for further guidance.)

Why These Lessons?

The lessons I selected for this book were tested in many classrooms across the United States, both through my work as a second-grade teacher and as an education specialist for Math Solutions. As a Math Solutions' education specialist, one of my favorite responsibilities is teaching student lessons while teachers observe. Many of the lessons have served as model lessons with kindergarten, first-, and second-grade students. Other lessons were ones that I used with my own classroom of second graders. I tried, revised, and tried again several lessons in Ms. Sandy Hawkins', Ms. Kami Hinkle's, and Ms. Lindsey Ray's kindergarten, first-, and second-grade classrooms.

I remember being unsure of how to use ten-frames when I was a new teacher. After attending professional development courses and learning the importance of providing opportunities for students to make sense of numbers, develop landmarks, and be able to compute flexibly and efficiently, I began to see the immense value and purpose of ten-frames in meeting those goals.

When I started working with Math Solutions, I encountered teachers who had the same initial hesitations I did about ten-frames. I found myself time and time again helping them become more comfortable and confident in using ten-frames based on my own successful experiences with the model. This led me to realize the need for a resource that provides teachers with rich lessons using ten-frames. I knew the ideas I was sharing with teachers needed to be widely accessible.

The classroom-tested lessons in *It Makes Sense! Using Ten-Frames to Build Number Sense* are first and foremost user-friendly. You can choose from a variety of lessons—each containing clear, concise directions—covering several number skills. The lessons are intentionally designed to provide students with opportunities to think, reason, and communicate about numbers. Many of the routines and games are intended to be revisited throughout the year to give students repeated experiences in building number sense.

How Do I Use the Lessons?

Using the Chapter Connections to the NCTM Focal Points, K–2 Table (page xxi)

The NCTM Focal Points focus on a number of key areas of emphasis for math teaching. Providing students with extended experiences in these core concepts and skills helps facilitate deep understanding, mathematical fluency, and the ability to generalize. The “Chapter Connections to the NCTM Focal Points, K–2” table gives an overview of the concepts and skills addressed in this book. Using the table alongside your own curriculum, standards, or pacing guides will help you determine which lessons meet the concepts and skills you’re in need of addressing with your students.

Three Categories

The book is divided into three categories: routines, games, and problem-solving lessons. Each category opens with an introduction. Briefly, routines are short lessons that should be revisited several times a year in order to build students’ sense of number. Games offer an engaging way for students to practice skills. Problem-solving lessons require extended time where students are asked to think and reason in order to deepen their understanding of number.

Where to Start

In the “Related Lessons” section of each lesson, you’ll get suggestions for what to teach next. When you first use ten-frames, I suggest starting with the routines *Look Quick!* (R-1) and *Make the Number* (R-2). *Make Five* (G-5) or *Collect Ten* (G-6) are great starting places for games. When students are comfortable with ten-frames, then introduce the problem-solving lessons.

Lesson Overview

Each lesson opens with an overview that gives you an opportunity to become acquainted with the mathematical goals of the lesson, as well as what students will be doing.

Time

The “Time” section of each lesson gives a general prediction of the time it will take to carry out the lesson. Generally, each routine takes five to twenty minutes and is meant to be repeated throughout the school year; each game takes ten to thirty minutes; and each problem-solving lesson requires a full class period.

Materials

Following is a basic list of materials needed for the lessons; each lesson opens with a specific list. When possible, reproducibles are provided for your convenience.

- ▶ 1 ten-frame for each student (Reproducible A)
- ▶ 1 double ten-frame for each student (Reproducible D)
- ▶ 1 set of ten-frame cards for each pair of students. (Reminder: A set of ten-frame cards means four copies of Reproducible B, for a total of forty cards when cut apart.)
- ▶ 1 demonstration ten-frame (Reproducible A enlarged with document cameras or overheads; demonstration ten-frames can also easily be created on interactive whiteboards by inserting and enlarging a five-by-two-inch table.)
- ▶ 20 counters per student (For consistency, the term *counters* is used throughout this book. There are a variety of options for counters: Snap Cubes, Unifix cubes, color tiles, or two-color counters. You may also consider using everyday objects such as lima beans, pennies, dimes, or small buttons.)

Key Questions

Each lesson offers key questions to promote student thinking, class discussions, and the ability to assess what students know. These carefully planned questions elicit deeper thinking and reasoning among students and are meant to be asked throughout the lesson. Often it is necessary to scribe or record student thinking. Recording student thinking connects a child's thinking to representations, such as pictures, or symbols, such as numbers. It allows the student who is speaking and others in the class to visually observe their thinking.

Teaching Directions

The directions are presented in a step-by-step lesson plan with references to when and how to use the key questions and what a student might be thinking. Some of the lessons are divided into parts to make the planning process more manageable.

Additional Teaching Insights

In addition to the above, teaching insights are provided throughout the lessons in the following ways:

- ▶ “Math Matters!” sections provide an opportunity to deepen one's own math content;
- ▶ “Teaching Tip” and “Technology Tip” sections offer insights to help make the lesson run smoothly;
- ▶ “A Child's Mind . . .” sections give an opportunity to read how or why your own students may think about a problem;

How to Use This Book

- ▶ “Differentiated Instruction” sections offer extensions or modifications to meet all learners’ needs;
- ▶ “Time Saver” sections provide insights for saving time in lesson preparation.
- ▶ “Extend Their Learning!” sections are featured in some lessons to continue the learning of groups of students or the whole class; and
- ▶ “Teacher Reflections” sections are included throughout the book to offer insight into experiences that have shaped my own thinking about teaching.