ALL ABOUT® Math

The program that takes the struggle out of math

Level 2 Teacher's Manual Sample

In this sample you will find:

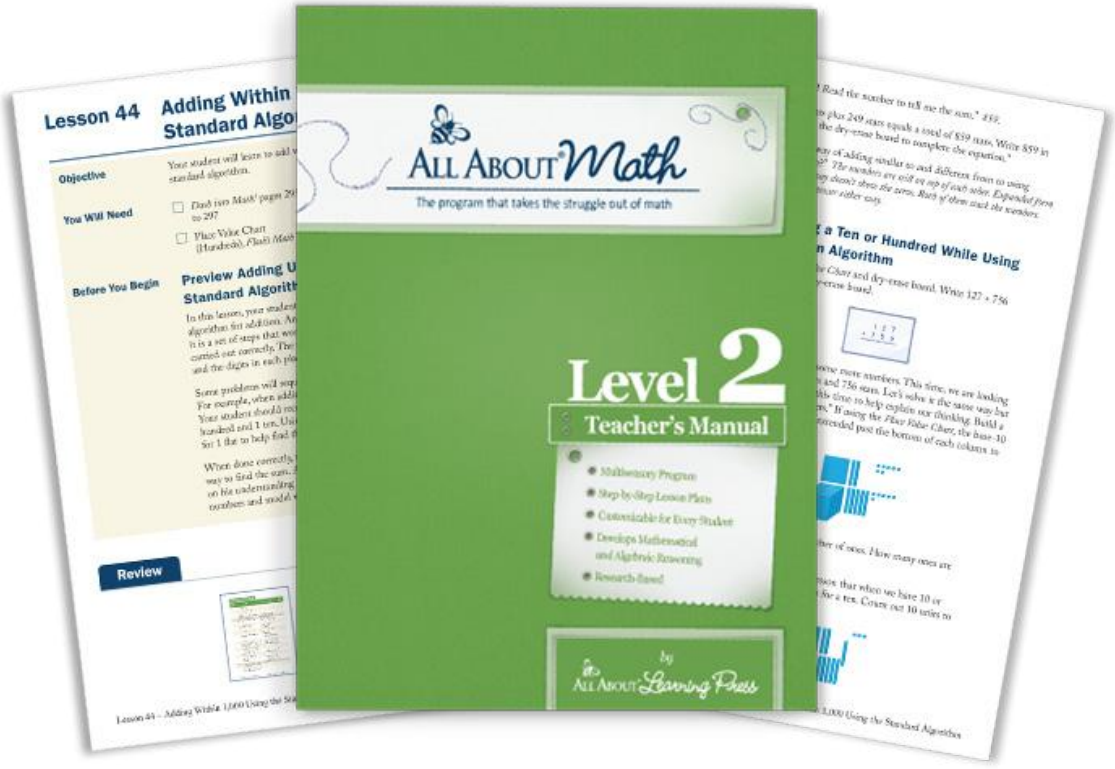


Table of Contents

1 Preparing for Level 2

2 Complete Step-by-Step Lesson Plans

3 Appendices

4 Index

1

Preparing for Level 2

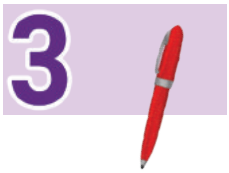
Start Here!

To prepare for teaching *All About Math* Level 2, you can either watch our short videos or follow the checklist on the subsequent pages. Do whichever works best for you!

Option 1: Watch the Videos

Go to www.aalp.tv/math-level-2 on your phone, tablet, computer, or scan the QR code to be taken directly to the videos.

Let us show you how to get set up for success!



After watching the videos, turn to page 33 of this teacher's manual to start teaching the first lesson.

Option 2: Read the Following Pages

Check off each as you complete it.

Is Your Student in the Right Level?

If your student did not complete *All About Math* Level 1, use this checklist and the *Dash into Math!* activity book pages 395 to 400 to verify placement in Level 2. Your student should get all items in a question correct in order to checkmark that question.

☐ 1. Your student can count in the following ways:

- **count to 100, starting with the number 1**
- **count to 100 by tens**
- **count backward from 10 to 0**
- **count on from a number other than 1, such as starting from 12 and counting on to 28**

☐ 2. Your student can identify numbers up to 100. To test this, have your student point to each number on her student activity page and say its name.

7 **89** **36** **25** **40**

☐ 3. Your student can write numbers that are given orally. To test this, call out the following numbers, one at a time, and have your student write them.

13 **97** **26** **40** **58**

☐ 4. Your student understands that a teen number is made of a group of 10 and some more ones. For example, 16 is made of a group of 10 and 6 more. To test this, have your student complete question 4 on her student activity page.

☐ 5. Your student understands place value and can use it to describe a number. Have your student color the tens and ones on her student activity page to represent each number

12  **52**  **36** 

☐ 6. Your student can solve addition and subtraction story problems and provide an expression to match each. To test this, read the story problems in question 6 aloud, one at a time. Your student can use objects or drawings to help solve the story problems and write matching expressions. (An expression is like an equation without an equal sign, such as 10 + 0.)

Answers: cats 7, 3 + 4; deer 3, 8 - 5

☐ 7. Your student can identify all the ways to compose 10 and write expressions for each. Your student can use objects or drawings to help make 10.

Answers: 10 + 0, 9 + 1, 8 + 2, 7 + 3, 6 + 4, 5 + 5, 4 + 6, 3 + 7, 2 + 8, 1 + 9, 0 + 10.

☐ 8. Your student can solve equations with the unknown number in any position. Have your student solve each equation on her student activity page. She can use objects or drawings to help solve the equations.

5 + 4 = ___ *(Answer: 9)* **___ + 2 = 7** *(Answer: 5)* **3 + ___ = 9** *(Answer: 6)*

☐ 9. Your student understands place value and can use it to tell you the value of each digit in a number. For example, the value of the 3 in the number 39 is 30 and the value of 9 is 9. To test this, follow the scripting example shown below.

"What is the value of the 2 in the number 23?" (*Answer: 20*)

"What is the value of the 3 in the number 23?" (*Answer: 3*)

Continue to test your student using the following numbers:

47 (*Answer: 40, 7*)

36 (*Answer 30, 6*)

☐ 10. Your student can solve two-digit addition story problems and equations by using either base-10 blocks or drawings of tens blocks and ones cubes. To test this, read the story problem in question 10 aloud, and then have your student solve the equations.

Answers: flowers 21; 73 + 4 = 77; 7 + 45 = 52; 28 + 6 = 34

☐ 11. Your student can mentally identify the number that is 10 more and the number that is 10 less than a given number. To test this, have your student identify 10 more and 10 less for each number on her student activity page:

13 *(Answer: 23, 3)* **77** *(Answer: 87, 67)* **52** *(Answer: 62, 42)*

☐ 12. Your student can compare 2 two-digit numbers by using comparison symbols (>, <, =) to show greater than, less than, or equal to. To test this, have your student compare each pair of numbers on her student activity page:

Answers: 29 < 51, 95 = 95, 84 > 64, 72 > 27

☐ 13. Your student can compare the lengths of 2 objects to determine which is longer and which is shorter. To test this, have your student compare the lengths of 2 objects on her student activity page.

How did your student do?

- If your student could easily complete 11 or more of the 13 skills, begin Level 2.
- If just one or two areas were difficult, you can remediate in those areas as you start Level 2.
- If 10 or fewer boxes were checked, start with Level 1 to build a strong foundation for math.

If you have any questions about the program or would like to learn how to adapt certain aspects of the program to accommodate your student's needs, feel free to call us at 715-477-1976 or email us at support@allaboutlearningpress.com. And if you need ideas on how to help your student build skills, just let us know—we are always happy to help!

Gather the Materials

In addition to this teacher's manual, you will need the following items:

1 Student Packet

The Student Packet contains:

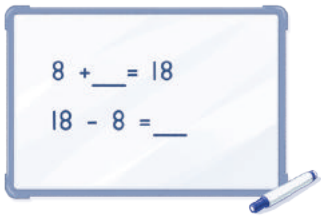
- *Dash into Math!* activity book
- Stickers for the Progress Chart
- Flash's Math Tools (see page 25, Preview *Flash's Math Tools*, for more details)

2 *All About Math* Manipulatives Kit

The manipulatives kit includes hands-on materials to support learning. See page 23, Learn about Manipulatives, for more details about the manipulatives for Level 2.

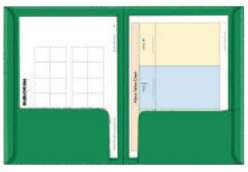
3 Dry-erase board and Markers

You can use any size. We recommend a hand-held dry-erase board for ease in demonstrating concepts. However, if you already have a dry-erase board for *All About Reading* or *All About Spelling*, you can also use your existing board.



4 Folders (Optional)

It's helpful to have a folder for storing Flash's Math Tools. You may also want a folder for storing Flash's Math Fun! games so they can be replayed.



The *All About Math* Method

First of all, you can do this! *All About Math* is a scripted, open-and-go program developed for busy parents, teachers, and tutors who want to teach mathematics in the most effective way possible. This program doesn't require long periods of study, you don't have to develop your own lesson plans, and you don't have to stress over what to teach next—because everything is laid out for you, step-by-step. You'll get a solid grounding in how to teach mathematics without being overwhelmed.

Your student will be actively involved in the learning process. This is a truly multisensory program; your student will learn through sight, sound, and touch. Everything is taught in context, and your student will apply what he has learned right away. Your student will be engaged in thinking, processing, comparing, and learning.

Students who use the *All About Math* method tend to feel a sense of excitement in learning. And, they should! They are learning how to think, explore, and grow in their abilities. They will feel successful as they see continual progress.

There are no gaps in this program. *All About Math* teaches your student everything he needs to know to build a strong foundation of numeracy, operation, and algebraic thinking. Each concept builds upon the previous one, ensuring a comprehensive understanding that leverages existing knowledge.

All About Math acknowledges the diverse needs of learners and addresses the five key components of effective instruction:

1. Strong Conceptual Understanding: We connect mathematical concepts, fostering a deeper understanding that transcends memorization.

2. Procedural Fluency and Skills: Students master essential skills like addition, subtraction, multiplication, and division through practice and application.

3. Communication and Collaboration: We encourage students to explain their reasoning, fostering collaboration and clear communication through discussions and activities.

4. Assessment and Differentiation: Our program offers regular assessments so you can see how your student is doing. It allows you to cater to individual needs by offering differentiated instruction; instruction that allows you to adjust the pace, complexity, and activities to your student's needs.

5. Positive Learning Environment: We encourage students to believe in their ability to learn and grow through perseverance and effort.

***All About Math* is a mastery-based program.** As such, the levels don't necessarily correspond to grade levels. In mastery-based learning, students master foundational concepts before moving on to more advanced concepts, regardless of age or grade level. Some concepts will take many lessons to master. The instructions in each lesson help you know whether to move on, while the concept reminders on the *Daily Review Tracker* help you continue to work toward mastery.

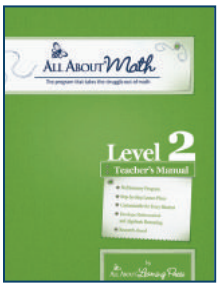
Most importantly, *All About Math* is committed to results. The *All About Math* program has a very focused mission: to enable you to teach your student mathematics while guaranteeing retention and enjoyment. Our approach to mathematics focuses on enabling students to become confident, fluent mathematicians who can absorb and retain new information.

If you ever have a question as you are teaching, please feel free to contact us at support@allaboutlearningpress.com or 715-477-1976.

We're here to help!

Preview the Teacher's Manual

As you flip through the teacher's manual, you'll notice that all the lessons are laid out for you step-by-step. You'll also find two types of lessons:



•**New Concept Lessons:** In these lessons, your student will learn new skills and concepts. You can see an example of a typical "New Concept" lesson in Lesson 2 on page 43.

•**Progress Monitoring Lessons:** In the Show What You Know! lessons, your student will review and practice the new concepts taught in the previous lessons. You can see an example of a typical Progress Monitoring lesson in Lesson 19 on page 177.

Each new concept lesson consists of six parts:

1. **Before You Begin:** This cream-colored box contains an overview of the lesson and is meant only for you, the teacher. Reading it takes only a few minutes, after which you'll be well-equipped to teach the lesson confidently.

2. **Review:** You will begin the lesson by reviewing concepts learned previously, giving your student a quick review of skills or concepts essential to the new learning. Starting with lesson 5, you will need your student's *Daily Review Tracker* for this part of the lesson.

3. **New Teaching:** This is the hands-on, multisensory portion of the lesson. Your student will work with the manipulatives as you gradually introduce new concepts. Scaffolding techniques such as modeling, guided practice, and feedback help students progress at their own pace and achieve deeper understanding.

   Then, your student will use activity sheets as she continues to practice the new concepts. The activities encourage teachers to highlight connections, helping students see the bigger picture and develop a more coherent understanding of mathematical concepts.

   Finally, Math Reflections encourage your student to ask questions and express her understanding. This allows the teacher to identify any misconceptions and address them directly.

   (See page 19, Math Reflections and Dialog, for more details.)

4. **Extended Practice:** Optional activities are included for students who need more practice. By revisiting and practicing the skills in different ways if needed, students develop fluency and automaticity, allowing them to solve problems and perform calculations with greater accuracy and speed.

5. **Flash's Math Fun!:** Fun and engaging activities provide opportunities for your student to use and apply the new concepts she has learned in a meaningful context. This helps her move the information from short-term to long-term memory, strengthening her understanding and

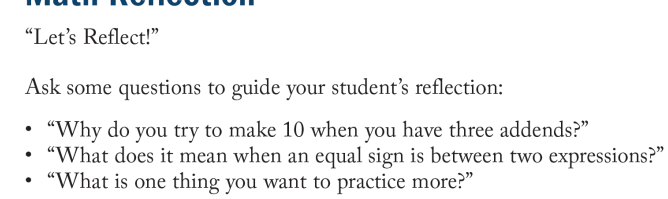
improving her ability to recall and apply concepts later. These activities are designed to encourage playing more than once to reinforce concepts and skills.

6. **Track Your Progress:** At the end of each lesson, record your student's progress on the Progress Chart.

Take a few minutes to flip through the Appendices section, starting on page 509. The Appendices include a few extra resources to help you and your student get the most out of your math lessons.

Math Reflections and Dialogue

It's incredibly important for children to talk about what they are learning in math. Verbalizing their thinking helps deepen their understanding, build critical reasoning skills, and strengthen their ability to communicate complex ideas. That is why you will find "Math Reflection" sections in every *All About Math* Lesson, and you will also see dialogue encouraged throughout. Here are some key benefits of encouraging math discussions:



Math Reflection

"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "Why do you try to make 10 when you have three addends?"
- "What does it mean when an equal sign is between two expressions?"
- "What is one thing you want to practice more?"

This section is located after the Complete Activity Sheet section in each New Concept Lesson and after the last question in each Progress Monitoring lesson.

Deepens Understanding: When your student talks through a problem, he is forced to clarify his thinking. Explaining his reasoning helps solidify the concepts in his own mind, making it easier for him to understand and retain the material. Talking through math problems can also reveal misunderstandings or gaps in knowledge. If he is unable to explain his thinking, it may highlight areas where he will need further instruction or support.

Encourages Active Engagement: Math discussions help your student move from passively receiving information to actively engaging with the material. When he verbalizes his thought processes, he is more likely to take ownership of his learning and develop a deeper connection to the content.

Promotes Critical Thinking and Problem Solving: Talking about math encourages your student to reason logically and justify his thinking. Discussing different strategies and approaches fosters critical thinking and can lead to deeper insights and a broader range of strategies for solving problems.

Enhances Mathematical Vocabulary: Talking about math helps your student develop and expand his mathematical vocabulary and encourages him to use specific, accurate language, which reinforces his understanding of the terms and concepts involved.

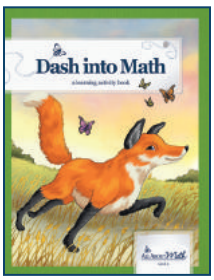
Improves Memory and Retention: When your student talks about math, he is engaging both the verbal and cognitive centers of the brain, which enhances memory and understanding. Explaining concepts to others forces him to organize and articulate his knowledge in a coherent way, and reinforces learning and retention.

Encourages a Positive Attitude Toward Math: By encouraging your student to talk about his learning, you help him see math as a subject he can engage with and discuss rather than a subject that is difficult or intimidating. Positive discussions about math help develop a healthy attitude toward the subject and can reduce math anxiety.

Talking about math in real-world contexts or through stories can help him see the relevance and practical applications of what he is learning, making math more engaging and meaningful.

Preview the Activity Book

The *Dash into Math!* Activity Book contains:

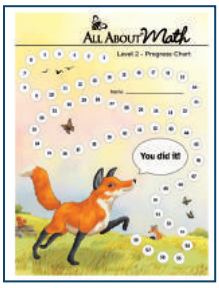


- Progress Chart
- *Daily Review Tracker*
- Activity Sheets
- Flash's Math Fun!
- Certificate of Achievement

The lesson plans in the teacher's manual will tell you which pages you need for each lesson. The pages in the activity book are perforated for easy removal.

Let's take a quick look at each part of the activity book.

Progress Chart



The *Progress Chart* can be found on page 5 of the activity book.

This chart is a fun and encouraging way to help students see their progress as they work toward understanding mathematics.

Remove the chart along the perforation and find a special spot to display it. You might choose a bulletin board, the refrigerator, a folder, or any other place that is easy to access and see.

After finishing each lesson, have your student color in or place a sticker over the corresponding circle on the chart. It is a great way to celebrate her hard work!

Daily Review Tracker

The *Daily Review Tracker* can be found on pages 7 to 8 of the activity book.

This *Daily Review Tracker* is a tool for you to use with your student during the review section of each lesson. It helps build a strong foundation in mathematics by supporting concept retention and reinforcing understanding, while also tracking mastery of each skill.

Starting in Lesson 4, you will be prompted to enter the date next to skills that have been introduced. This will help you track which skills have been taught and should be included as part of your daily review.

In Lesson 5, you will begin using the tracker to identify areas where your student may need more practice to reach mastery. You will know she has achieved mastery when she can perform the skill

consistently without assistance. Once she has demonstrated mastery, record the date in the 'Date Mastered' column.

As always, you are welcome to revisit any skill marked as mastered for a refresher or extra practice as needed.

Activity Sheets

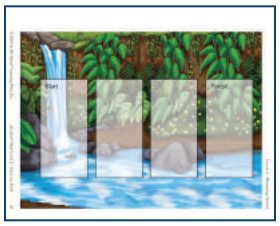
The activity sheets are highly motivating for most students, offering a variety of ways to practice the new concepts introduced in each lesson. They often include engaging themes, colorful visuals, and hands-on interactive elements that make learning both fun and meaningful.

Take a look at the activity called "Soccer Matchup" on page 81 of the activity book. When you get to Lesson 12, the lesson plan will prompt you to cut apart the *Soccer Matchup* cards. Your student will match each soccer ball expression card to the goal expression card that has the same value. Then, she will solve the expressions and match each to the jersey that has the value of both expressions.

If you are working with an older student who does not need the additional practice for a certain concept or does not want to do "kid" activities, feel free to skip that particular activity sheet. But you may find that even adult learners enjoy the mental break that the activity sheets provide.

Flash's Math Fun

Math games make learning math exciting by turning practice into play, allowing students to explore concepts in a fun and interactive way. They will build confidence and fluency with math concepts while keeping your student engaged and motivated.



Flash's Math Fun! can be found at the end of each new concept lesson. You can choose to play these games directly after the lesson or at another time. These games are designed to be played multiple times and are a great way to practice skills that are still developing.

Remove the Flash's Math Fun! games along the perforations. Once you have completed a game, place it in a safe spot or folder for easy access for later play.

Certificate of Achievement

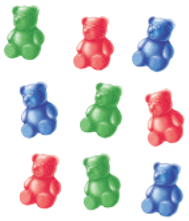
The *Certificate of Achievement* can be found on page 393 of the activity book.

Presenting your student with a certificate upon completing the Level 2 program is a wonderful way to celebrate her hard work and achievements. It will boost her confidence and give her a sense of pride in reaching an important milestone.

Learn about the Manipulatives

We will be using four types of manipulatives. Below is an introduction to some of their uses.

Counting Bears are colorful, plastic, bear-shaped manipulatives that can be used for counting and number recognition, basic addition and subtraction, spatial awareness, and game markers.



Connecting Cubes can be snapped together to form longer chains or structures. They can be used for:

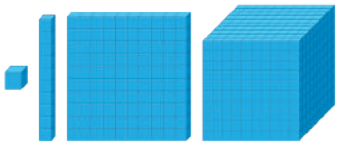
- **Counting and Number Recognition:** By stacking cubes, students can understand one-to-one correspondences, visualize numbers, and relate them to physical quantities.
- **Addition and Subtraction**
- **Place Value:** Connecting cubes can be stacked into tens to represent place value. A group of 10 cubes can represent "10," and children can build numbers by combining different groups. This helps them understand the concept of tens, ones, and place value in a tangible way.
- **Measurement:** Children can compare the lengths of different objects by counting the number of cubes it takes to match the length or height of each object.
- **Patterns and Sequences:** Children can create repeating patterns, such as "black, green, black, green,.." which promotes the understanding of patterns and sequencing.

Two-Color Counters are small, circular discs that are red on one side and yellow on the other side. They can be used for:

- **Addition and Subtraction:** Students can combine groups of different colors to find the total or remove some counters to show the difference.
- **Comparing Numbers and Greater Than/Less Than**
- **Understanding the Structure of 10:** Students can place some counters of one color in a 10-frame and then fill the 10-frame with the other color to identify pairs that make 10. Students can visualize teen numbers as the sum of 10 and some more.

Base-10 Blocks, also known as **place value blocks,** represent units of 1, 10, 100, and 1000. They can be used for:

- **Understanding Place Value:** By physically grouping different blocks together, students can see how numbers are built up from ones and tens, and they can better understand how place value works. Each type of block represents a different place value:



  - **Unit (ones):** Small cubes that represent the number 1.
  - **Rod (tens):** Long rods that represent groups of 10.
  - **Flat (hundreds):** Square flats that represent groups of 100.
  - **Cube (thousands):** A cube that represents a group of 1000.
- **Addition and Subtraction:** Using the various base-10 blocks helps students visualize the process of addition and subtraction, and makes abstract concepts like borrowing and regrouping easy for kids to understand.
- **Understanding the Concept of Larger and Smaller Numbers:** By using base-10 blocks, students can easily compare numbers based on their sizes. For example, 30 is represented by 3 rods, while 20 is represented by 2 rods, making it easy to visually see which number is larger.

Ruler a straight tool with two sides: one marked in centimeters (cm) for metric measurements and the other in inches for standard measurements. Rulers are used to measure length and draw straight lines, helping students understand units of measurement, like inches and centimeters.

The *All About Math* Manipulatives Kit also includes:

- **Dry Erase Pocket:** a transparent-plastic pocket that turns any Math Tool or activity page into a dry-erase board.

The remaining items, Fraction Tiles and Protractor, will be used in higher levels.

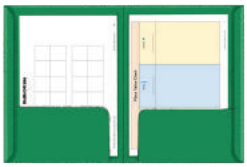
The *All About Math* Manipulatives Kit comes in a plastic storage bin for ease and convenience.

Preview Flash's Math Tools

Math Tools are printed resources that can be used in numerous ways to support student learning. In Level 2, Math Tools are primarily used to support operations and algebraic thinking. These tools include:

- 10-Frame
- Double 10-Frame
- 3 Read Strategy
- Number Cards 0 to 20
- Number Mat 1 to 120
- Tens and Ones Chart
- Shape Cards
- Place Value Chart (Hundreds)
- Comparison Mat
- Open Number Line
- Analog Clock
- Analog Clock Mat
- Money Cards
- Coin Values
- Six-Digit Place Value Chart
- Place Value Disks (One-Inch Squares on back)
- Tens Rounding Mat
- Hundreds Rounding Mat
- Fraction Circles
- Fraction Mat
- Fraction Shapes

Math Tools are reused for many lessons, so once you use them, be sure to save them for future use.



Consider keeping the materials in a folder and storing them in a binder or in the manipulatives storage bin.

Learn about the *All About Math* Number Style

The *All About Math* number style in Level 2 reduces the likelihood of reversals or number confusion. Students do not have to write numbers the way the teaching materials show. Feel free to follow your own handwriting preferences and curricula. *All About Math* will transition to a standard number style in Lesson 48 on page 417.

Other Number Styles	*All About Math* Number Style
6 9 6 and 9 are rotations of each other.	6 9 6 is composed of curves; 9 is composed of a circle and a line.
2 5 The circular parts of numbers 2 and 5 have a similar size and shape, making these numbers prone to vertical reversals for some children.	2 5 The curve of the 2 is more elongated and has a much wider opening. The curve of the 5 has a circular shape and a much narrower opening to distinguish it from a 2.
1 7 The extension at the top of the 1 mimics the 7.	1 7 The 1 is a straight line to distinguish it from a 7.
4 9 A closed 4 is easily mistaken for a 9.	4 9 The open 4 prevents confusion with a 9.

How Much Time Should I Spend on Math?

All About Math lessons are designed so that you can work at your student's pace. Here are some general guidelines.

Spend 20 minutes per day teaching math.

We recommend spending about 20 minutes per day, five days a week, on math instruction, but you can adjust this to meet your particular student's needs.

It can be helpful to set a timer. When 20 minutes are up, consider whether you have reached a logical stopping point in the lesson; you may want to complete the task or part of the task before stopping. Then, mark the spot in the lesson where you stopped. If your student is still engaged at the end of 20 minutes, feel free to extend the time if you wish.

When you begin teaching the next day, start with 1 or 2 items from the *Daily Review Tracker*, briefly review the New Teaching from the previous day, and then pick up in the teacher's manual where you left off previously. If your student struggles to remember previous learning, you can begin from an earlier point in the lesson.

Short daily lessons are much more effective than longer, less frequent lessons. Your student's attention is less likely to wander, and you can accomplish more when your student is actively engaged in the lesson.

If you aren't done with the lesson when the 20 minutes are up, don't worry! The next tip is for you.

Lessons often take more than one day to complete.

Please know that the lessons in *All About Math* are **not** meant to be completed in one day.

A number of variables, including your student's age, attention span, prior experience, the difficulty of the concept being taught, and the length of the lesson, all play a part in how quickly a lesson can be completed.

Teaching your student can be a wonderful way to show him that he has great value in your eyes. You can view this as an opportunity to build him up and help him develop skills and character. Can you see yourself as a calm, uncritical coach with the worthy goal of helping this child fulfill his natural potential? Imagine the type of teacher you would want: friendly, supportive, with a you-can-do-it attitude. Smile. Point out what your student has done right more often than you point out his mistakes. Treat lesson time as a special time between the two of you.

Hello there, my little Math Friend.
I'm *Flash*, Flash the Fox!

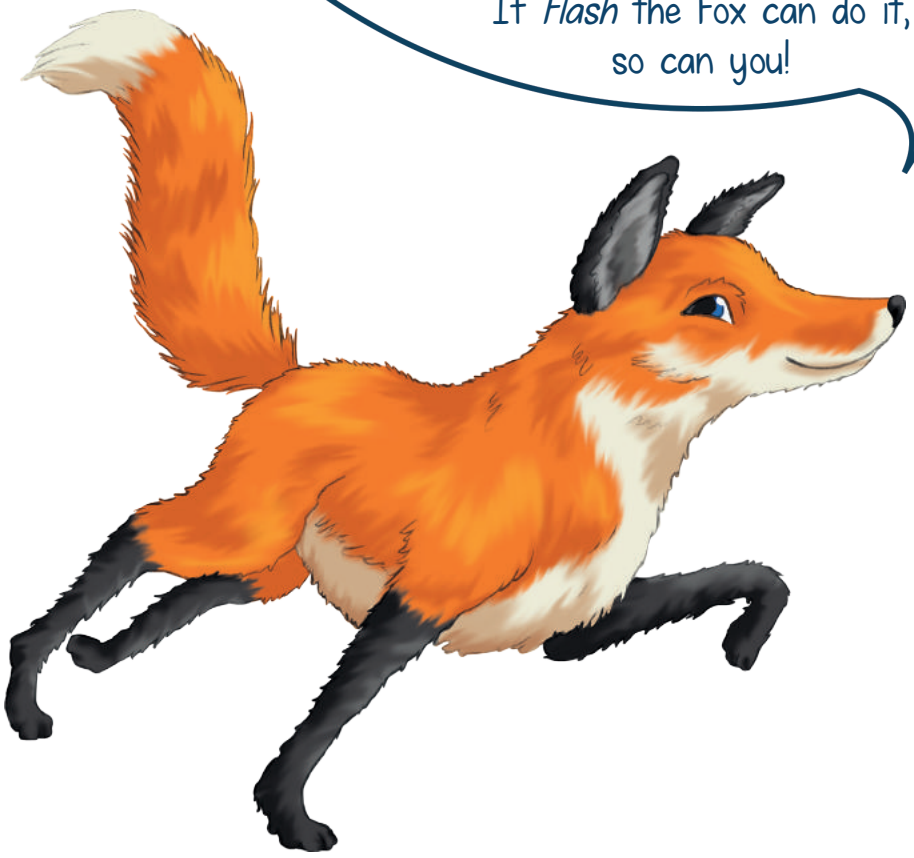
Everyone calls me that because I'm fast, see?
But I will let you in on a little secret -

I'm not always fast...

I'm fast when I'm in familiar territory, like in the field outside my den. But put me in a forest a ways away, and I have to move real slow, careful like, to get the feel of the place and find my way back so I don't get lost.

Math is like that, too! Some things will feel really familiar, and you will just zip right through them, but other things you will have to take your time with so you get it right.

But never fear!
If *Flash* the Fox can do it,
so can you!



Lesson 1 Review Number Fluency, Addition, and Subtraction

Objective

Your student will review skills and concepts involving number fluency, addition, and subtraction.

You Will Need

- ☐ *Dash into Math!* page 9
- ☐ 10-Frame, *Flash's Math Tools* page 1
- ☐ Double 10-Frame, *Flash's Math Tools* page 2
- ☐ Base-10 Blocks
- ☐ 3 Reads Strategy, *Flash's Math Tools* page 3
- ☐ Two-Color Counters
- ☐ dry-erase board and marker
- ☐ Connecting Cubes

Math Vocabulary

less, more, plus sign, expression, equation, equal sign, minus sign, sum

Before You Begin

If you are new to the *All About Math* program, have your student take the Placement Test for Level 2 on page 9.

At the beginning of each lesson, you will find a cream-colored "Before You Begin" section like this one. Review these instructions before you begin the lesson. The actual lesson plan you will teach to your student begins after the "Before You Begin" section.

The first Level 2 lesson will be a review of concepts taught in Level 1. You can break up this review into multiple sessions, depending on your student's needs.

Review Sections and Working Toward Fluency

Throughout Level 2, the "Review" section of each lesson will engage your student in various fluency activities as you review previously taught skills.

Fluency is the ability to easily recall math facts. In working toward fluency, your goal is not to focus on having your student memorize a list of facts but to build conceptual learning and the use of effective strategies.

Four key components to fluency are:

- Flexibility: Understanding the relationships between numbers and being able to understand and use numbers in different ways.

- Appropriate strategy use: Knowing when and how to use a strategy, such as counting on.
- Efficiency: Using the best way to solve a problem.
- Accuracy: Getting the correct answer.

Your student will build on all these components as she works through the Level 2 lessons.

In this lesson, your student will review using numbers to tell how many objects are in a group, comparing numbers, solving addition and subtraction story problems, adding two-digit numbers, and composing a ten.

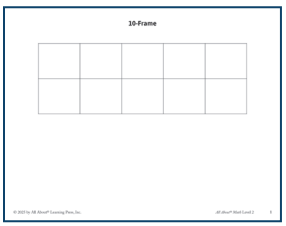
Review

Counting Objects to Tell How Many

"Let's review counting objects to tell both 'how many' and which group has less or more. When we count groups of objects, we need to keep track of which ones we have counted and which ones we still need to count." Create a group of 13 unconnected connecting cubes, and place them in front of your student.

"How can you count this group and keep track of the ones you have already counted?" *I can line them up and touch each one as I count. I can move them away from the group as I count them.*

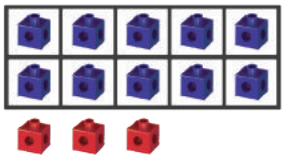
"That's an excellent way to keep track of your counting. Use that strategy, and tell me how many connecting cubes are in this group." *I counted 13.*



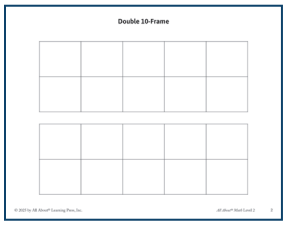
10-Frame

Remove the *10-Frame* from *Flash's Math Tools* on page 1.

"Another way to find the amount in a group is to use a *10-Frame*. It will help us keep the connecting cubes organized. When we have a full *10-Frame*, we know it always has 10 cubes, so we can count on from the number 10. Place one cube in each box of the *10-Frame* until they are all full, and then place the extra ones under the *10-Frame*."

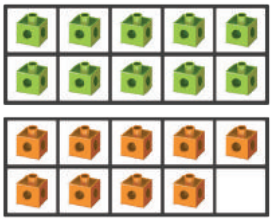


"We can see there are 13 cubes because there is a group of 10 and 3 more. We can count on from 10: 11, 12, 13." (Point to each cube as you model counting on.) Keep the group of 13 connecting cubes on the *10-Frame* to use as a comparison with the next number.



Double 10-Frame

Remove the *Double 10-Frame* from *Flash's Math Tools* on page 2. Place a new group of 19 connecting cubes on the *Double 10-Frame*.



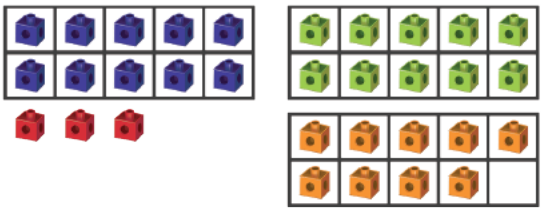
"This group of connecting cubes is organized on a *Double 10-Frame*. It is similar to the *10-Frame* we used earlier, but it has 2 *10-Frames*. Use the way the cubes are organized to help you count, and tell me how many connecting cubes are in this group." *Nineteen.*

> The goal is for your student to understand that a full *10-Frame* represents 10 without having to count them one at a time. She should start with the group of 10 and then count on: 11, 12, 13, 14, 15, 16, 17, 18, 19. If your student is not ready to use the counting on strategy, she can continue to count the connecting cubes one by one. After she has counted, model how to start with the number 10 and then count on with the remaining cubes to find the total.
>
> **Tip!**

"Yes. There are 19 connecting cubes in this group. How did you know?" *I saw that a 10-Frame was full of connecting cubes, so that meant there were 10. Then, I counted on from there.*

Show the group of 13 connecting cubes that includes the *10-Frame* and the group of 19 connecting cubes that includes the *Double 10-Frame*.

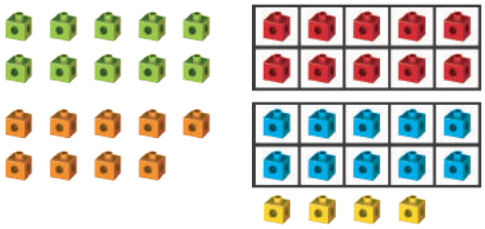
Review
(continued)



"Which group has less, 13 or 19? Remember that **less** means a smaller amount." *Thirteen.*

"Great job! Each number has a group of 10, but 13 has only 3 more ones, and 19 has 9 more ones. That means 13 is less than 19." Remove the 19 connecting cubes from the *Double 10-Frame* and place them in the same pattern on the side. While you do that, give your student a group of 24 connecting cubes and have her put them on the *Double 10-Frame*.

"Let's count another group of connecting cubes on the *Double 10-Frame*. How many cubes are there? Explain how you counted them." *24. I filled in 2 of the 10-Frames. That made 20. Then, I saw 4 more, so I counted on.*



"Which group has more, 19 or 24, and how do you know? Remember that **more** means a larger amount." *Twenty-four has more because it has 2 filled-in 10-Frames and some more ones.*

> If your student needs more practice with efficiently counting objects, you can continue to give your student groups of connecting cubes to count. Since you will provide a *Double 10-Frame* to help her organize the cubes, you will want to stay below 30 (she can place the extras under the bottom *10-Frame*). Encourage your student to either use the *Double 10-Frame* or organize the cubes into groups of 10 as she counts them.
>
> **Tip!**

"Great job counting to find how many connecting cubes are in each group!"

Comparing Numbers

Write 16 and 23 on the dry-erase board. "Tell me the numbers I wrote on the dry-erase board." *You wrote 16 and 23.*

"We are going to compare these 2 two-digit numbers. Is 16 greater than or less than 23?" *Less than.*

"That's right! How did you know?" *I know that 16 has 1 group of ten and that 23 has 2 groups of ten, so 16 is less than 23.*

> If your student is unsure when comparing the two numbers, allow her to build the numbers on the *10-Frame* and on the *Double 10-Frame*. This will provide a visual to help her understand that the numbers represent quantities.
>
> 
>

"When you compare numbers, you look at the digit in each place. The number 16 has a 1 in the tens place, so it has 1 group of 10. The number 23 has a 2 in the tens place, so it has 2 groups of 10. There are symbols we can use to show our comparisons." Write the less than (<) symbol and the greater than (>) symbol at the bottom of the dry-erase board.

"This is the 'less than' symbol (point to the <) and the 'greater than' symbol (point to the >). Remember that this symbol is like a hungry alligator's open mouth and the wide open side always faces a greater number! Add the correct comparison symbol between the numbers to show that 16 is less than 23." Your student should add the less than (<) symbol.

"You got it! The small, closed end of the symbol (the point) is closer to the lesser number." Write 75 and 71 on the dry-erase board.

"What are these two numbers?" *They are 75 and 71.*

"Is 75 greater than or less than 71?" *Greater than.*

"How do you know?" *Both numbers have 7 groups of 10, so I need to look at the other digit. There are 5 more ones in 75 and 1 more one in 71, so 75 is greater than 71.*

"Nice job! When you compare 2 two-digit numbers, you need to first look at the tens place. If the numbers in the tens place are the same, then you look at the ones place."

"Use the correct symbol to show that 75 is greater than 71." Your student should use the greater than (>) symbol to show that 75 is greater than 71. (*Answer: 75 > 71*)

Review
(continued)

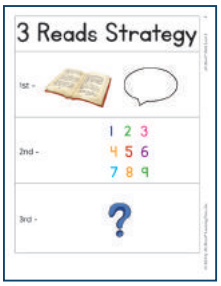
Repeat the steps to compare the following numbers:

- 58 and 40
- 72 and 76
- 37 and 47

Answer Key

58 > 40, 72 < 76, 37 < 47

Solving Addition and Subtraction Story Problems



3 Reads Strategy

Remove the *3 Reads Strategy* from page 3 in *Flash's Math Tools*.

"We are going to use the *3 Reads Strategy* to help us understand and solve some story problems. We will read a story problem three times, checking for different information each time. (As you read each bulleted item, point to that step on the *3 Reads Strategy* poster.) Here's what we will focus on."

- "First read: What is the story about?"
- "Second read: What numbers do we read or hear?"
- "Third read: Decide how to answer the question."

"Listen as I read this story problem aloud. Mya finds 6 leaves while on a nature walk. Her friend gives her 3 more. How many leaves does Mya have altogether?"

"After the first reading, the question is: What is this story problem about?" *Mya has some leaves, and then her friend gives her more.*

Reread the story problem. "After the second reading, the question is: What are the numbers, and what do they represent?" *Mya has 6 leaves, and her friend gives her 3 more.*

Reread the story problem. "After the third reading, the question is: How many leaves does Mya have altogether? Do you need to add or subtract to solve this story problem?" *Add.*

"How do you know?" *It says her friend gives her more and asks how many altogether.*

Review
(continued)

"Yes. A **plus sign** is a symbol we use when we add, or put numbers together. We can write the expression 6 + 3 to show how to solve this problem. An **expression** has numbers (point to the 6 and the 3) and symbols (point to the plus sign) and represents the value, or amount, of something."

"Use these two-color counters or make a drawing to show the action in the story problem." Your student can start with 6 two-color counters or drawings and then add 3 more. Then, she can find the total by counting on from 6.

"What is the answer to the question?" *The answer is 9 leaves.*

"Nice work! Let's solve another story problem. Listen as I read the story problem aloud. Teagan gathers 6 sticks on the nature walk. He drops 3 of them. How many sticks does Teagan have left?"

"Before you begin solving the story problem, I will reread the story problem after each question:"

- "What is the story problem about?"
- "What are the numbers, and what do they represent?"
- "What question is being asked?"

"Do you need to add or subtract to solve this story problem, and how do you know?" *I need to subtract because the story said that he drops some, and that is taking away.*

"Solve the story problem by using the two-color counters or the dry-erase board." Your student can start with 6 two-color counters or drawings and then take away or mark out 3. Then, she should find how many are left.

"How many sticks does Teagan have left?" *The answer is 3 sticks.*

"That's right! Let's write an equation to match the story problem."

"Remember, an **equation** uses numbers and symbols to tell us a math sentence. An equation is like an expression, but it has an equal sign. An **equal sign** is a symbol that we use to show that both sides have the same amount. This is what the equal sign looks like." Write an equal sign on the dry-erase board.

"What is the name of the symbol that we use when we subtract?" *Minus sign.*

"Yes! A **minus sign** is a symbol that we use when we take some away from a group. This is what a minus sign looks like." Write a minus sign on the dry-erase board.

Review
(continued)

"Now, I will write an equation on the dry-erase board to match the story problem." Write the equation 6 - 3 = 3, and then ask your student to read the equation aloud.

Two-Digit Addition

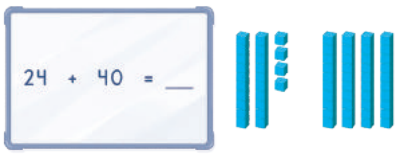
"We can use base-10 blocks to help us solve two-digit addition problems." Write the equation 24 + 40 = ____ on the dry-erase board. Have your student build each number with the base-10 blocks and solve the equation.

If your student is new to using base-10 blocks, show her how 10 ones units equals a tens block (tens rod). First, model how to build numbers or ask guiding questions like:

- "How do you represent 24?"
- "How do you represent 40?"
- "How can we find the sum?"

There are different ways that your student can solve this equation. She can put all the base-10 blocks together and count them, or use the counting on strategy. With this strategy, your student starts with the number 24 and then counts on by tens from that number to reach the total amount.

Work with your student to solve the equation by using the strategy of her choice.



"What is your answer?" *Sixty-four.*

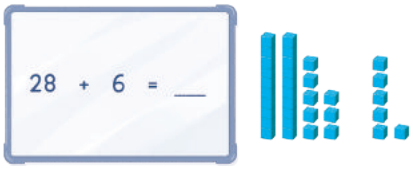
"Great job! Write in the **sum**, which is the answer when you add, on the dry-erase board. Let's do another one!" Repeat the previous steps with the equation 65 + 20 =___. (*Answer: 85*)

Composing a Ten

Write the equation 28 + 6 =___ on the dry-erase board.

"First, build the two numbers by using base-10 blocks." Look to see that your student uses 2 tens blocks and 8 ones cubes to make 28 and that she uses 6 ones cubes to make 6.

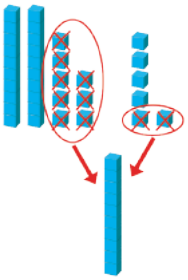
Review
(continued)



"How many tens blocks are there altogether?" *Two.*

"How many ones cubes are there altogether?" *Fourteen.*

"When we have more than 10 ones cubes, it means that we need to regroup our base-10 blocks. Regrouping helps us add and count more efficiently. Trade 10 ones cubes for 1 tens block."



"How many tens blocks are there now?" *Three.*

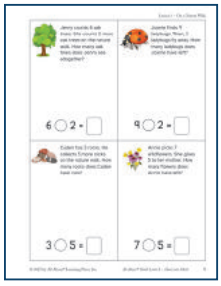
"How many ones cubes are there now?" *Four.*

"Count them to find your total. What is 28 + 6?" *Thirty-four.*

Repeat the previous steps with the equation 57 + 4 = ___. (*Answer: 61*)

Complete Activity Sheet

"Let's practice solving story problems."



On a Nature Walk

Turn to page 9 in the *Dash into Math!* activity book.

"A group of children went on a nature walk and counted different things along the way. You are going to help the children by deciding if each story problem uses addition or subtraction and solving the problem." Read the story problems as needed. Your student can draw, build, count on, or use another strategy to solve each equation.

Review
(continued)

Answer Key

Oak trees: +, 8; Ladybugs: -, 7; Rocks: +, 8; Wildflowers: -, 2

Look For
Your student might get confused about whether to add or subtract to solve the story problem.

Here's How to Help: Start by carefully reading through the story, using the *3 Reads Strategy* to ask a question after each reading. Have your student act out the story by adding or taking away two-color counters or connecting cubes according to the actions described. This hands-on method helps with visualizing the problem and makes it easier to write the correct symbol.

Math Reflection

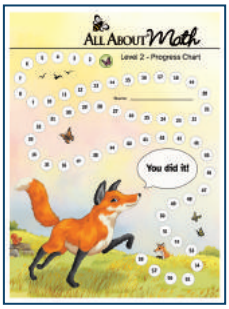
"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "Which topic is your favorite?"
- "What was one thing you found easy?"
- "Which topic would you like more practice with?"

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 1 on the Progress Chart.

Lesson 2 Story Problems and Expressions

Objective

Your student will learn to represent and solve Add To and Take From story problems where the result is unknown.

You Will Need

- ☐ *Dash into Math!* page 11
- ☐ dry-erase board and marker
- ☐ Base-10 Blocks

Math Vocabulary

regrouping

Before You Begin

Preview Story Problems and Expressions

The focus of this lesson will be for your student to build critical thinking skills by making sense of various Result Unknown story problems. The problems will require your student to decide if the numbers are being added to (Add To) or subtracted from (Take From) one another. He will represent a story problem by writing expressions with two-digit numbers. Being able to independently write expressions that match a story problem will help him clearly see how to solve the problem (Result Unknown). It will also help lay a foundation for writing equations in the next lesson.

After determining the needed operation (addition or subtraction), your student will apply different strategies to solve each problem. The use of base-10 blocks is encouraged and will be used throughout this lesson. If your student is unsure about how to represent a number by using base-10 blocks, provide practice by writing a number on the dry-erase board. Discuss the digits in the tens and ones places and the base-10 block that is used to represent each place. Use the blocks to make the number on the dry-erase board.

Review

Counting On

"Let's practice counting on from a number. I am going to say a number, and you are going to count on from that number until I say stop."

Say the number 63, and stop your student at the number 73.

Review
(continued)

Solving Problems

"When solving story problems, we often need to add numbers together or subtract them from each other. What symbol can we use to show that two numbers are being added together?" *The plus sign.*

"That's right! Show me what the plus sign looks like on the dry-erase board. What symbol can we use to show subtraction, or taking one number away from another?" *The minus sign.*

"Show me what the minus sign looks like on the dry-erase board."

"Nice work. You have also learned different strategies to help you solve story problems. Share a few strategies with me that you like to use." He might share strategies such as using math tools (two-color counters and a *10-Frame*), making a drawing, or using the *3 Reads Strategy*.

"Those are great strategies! As we work through story problems, think about which strategy you would like to use to find the answer."

New Teaching

Solving Story Problems

"We are going to explore some fun things to do in the fall! In the fall, it starts to get a little cooler outside, and the leaves start to change colors. What do you like about the fall?" Allow your student to share 1 or 2 things he enjoys about the season.

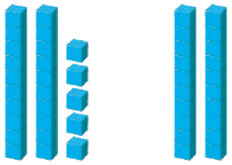
"Those are great things about the fall! As we explore some of the fun things to do, we will work to solve some story problems. Listen carefully as I read the first problem."

"There were 25 pumpkins for sale in the pumpkin patch. The farmer puts 20 more pumpkins in the patch. How many pumpkins are there now? Let's use the base-10 blocks to help model this story."

"Build a model to show the 25 pumpkins that were in the patch at the beginning." Your student should use 2 tens blocks and 5 ones cubes.

"The second part of the story tells us that the farmer put 20 more pumpkins in the patch. Use base-10 blocks to represent the amount of pumpkins that were added to the patch." Your student should add 2 tens blocks.

New Teaching
(continued)



"The base-10 blocks help us represent what is happening in the story. There were 25 pumpkins (point to the first group of base-10 blocks) and 20 more pumpkins (point to the 2 tens blocks that were just added). Now, write your expression that matches our model on the dry-erase board." (*Answer: 25 + 20*)

"You wrote 25 to represent the pumpkins that were originally in the patch and then 20 to represent the number of added pumpkins. Why did you use a plus sign between the numbers?" *I used a plus sign to show that more pumpkins were added.*

"Good. Now, let's solve the problem. The story asks us how many pumpkins there are now. What can we do to solve the problem?" *Count all the base-10 blocks.*

"Count the base-10 blocks to find out how many pumpkins are now in the patch. How many pumpkins are in the patch?" *Forty-five.*

Your student might choose to individually count each base-10 block to find the total amount. He might also recognize that he can count on from 25 to find the total. Each strategy for finding the total is acceptable to use, depending on your student's confidence level. If he chooses to individually count each base-10 block, you can model how to count on as a more efficient way to find the total.

"Yes, 25 and 20 more is 45. Let's try another story problem! Listen carefully as I read the story aloud. There are 38 people on a hayride. Then, 5 more people join them. How many people are now on the hayride?"

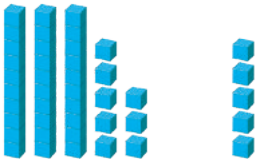
"Represent the 38 people on the hayride by using the base-10 blocks." Your student should use 3 tens blocks and 8 ones cubes.

"Nice work. I see 38 people represented in your model. In the story, 5 more people join them. Do you think we need to add or subtract 5 to show this?" *Add 5.*

"Yes. How do you know?" *More people are joining the group.*

"Add to your model to show 5 more people joining."

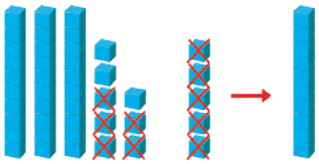
New Teaching
(continued)



"Your model shows 38 people on the hayride (point to the representation of 38) and 5 more people joining them (point to the representation of 5)." Write 38 + 5 and 38 - 5 on the dry-erase board.

"Which expression represents our story problem, and how do you know?" *The expression 38 + 5, because people joined them on the hayride. That means I need to add.*

"Right! Now, let's find out how many people are on the hayride altogether. In your model, I notice 13 ones cubes altogether. When we have 10 or more ones cubes, we can regroup our base-10 blocks to make counting them and finding the answer easier. We can trade 10 ones cubes for 1 tens block. We still have the same amount but grouped in a different way. We call that **regrouping**." Have your student trade 10 ones cubes for 1 tens block.



"Count the base-10 blocks. How many people are on the hayride?" *Forty-three.*

"After seeing the pumpkin patch and taking the hayride, we will now do some apple picking! Listen closely to our next problem. The red apple tree has 19 apples. You pick 3 apples from the tree. How many apples are now on the tree?"

"We can start by making a model of the 19 apples that were in the tree. We could use the base-10 blocks to represent the numbers in our story problem, but this time, let's try a new way by making a drawing. Making a drawing is like using the base-10 blocks. We will use a rectangle for each tens block and a small square for each ones cube. I will start by making a drawing on the dry-erase board to represent the apples on the tree." Draw 1 rectangle and 9 small squares on the dry-erase board.

New Teaching
(continued)

"In the story, you picked 3 apples from the tree. Since you removed apples, should you add or subtract?" *Subtract.*

> This story requires a different operation than the previous ones. If your student is unsure about why to subtract, say, "Instead of adding more apples to the tree, you took some apples away from the tree. So instead of adding to the model, you need to subtract."

"How can you show that you need to subtract 3 apples from the model?" *I can cross them off or erase them.*

"Yes. Cross off or erase 3 small squares from the model."

"You started with 19 apples and took away 3 apples. Write an expression on the dry-erase board to represent your model." Your student should write the expression 19 - 3 on the board.

> If your student is unsure about what expression to write, guide him by rereading the story. Pause after each part of the story that will be used to make the expression. Explain that since 3 apples were taken away, the expression needs a minus sign.

"Good work. The story ends by asking us how many apples are now on the tree. What does your model show us?" *There are 16 left.*

"Right. How did you find your answer?" *I counted each base-10 drawing.*

"That is a good strategy! The original 19 apples minus 3 apples equals 16 apples."

"When we were solving the story problems, we had to decide if we needed to add or subtract. How did you know when you needed to add?" *When we were putting two groups together, we were joining them, which told me that I needed to add.*

New Teaching
(continued)

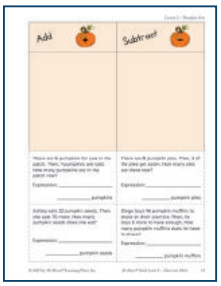
"How did you know when you needed to subtract?" *When we took something away from a group, I needed to subtract.*

"What symbol do we use in the expression to show that we are adding?" *The plus sign.*

"What symbol do we use in the expression to show that we are subtracting?" *The minus sign.*

Complete Activity Sheet

"Let's solve some more story problems!"



Pumpkin Sort

Remove page 11 from the *Dash into Math!* activity book. Cut out the 4 story problems from the bottom of the page.

"Your help is needed to sort some pumpkins at the fall festival."

Have your student read each story problem (assist as needed) and decide if the needed action is addition or subtraction. Then, have him sort the story problems into the correct columns based on the operation needed to solve each. Finally, have him write the expression that matches each story problem and solve that story problem.

Encourage your student to make a model of his choice to help him sort the story problems and solve them.

Answer Key

- Add: 22 + 70, 92 pumpkin seeds; 46 + 6, 52 pumpkin muffins
- Subtract: 16 - 4, 12 pumpkins; 15 - 3, 12 pumpkin pies

Math Reflection

"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "How do you represent the numbers in a story problem?"
- "What is one thing you found easy?"
- "What is one thing you want to practice more?"

New Teaching
(continued)

Extended Practice (*Optional*)

If your student is not able to solve a story problem, or he expressed the need for more practice, continue working on this skill.

"Listen to the story problem, and decide if you need to add or subtract. After you decide if you need to add or subtract, represent the story by using base-10 blocks or a drawing. Then, write the expression that matches the story problem on the dry-erase board, and solve it."

Read each of the following story problems aloud to your student, one at a time:

- "There are 34 people in the corn maze. Then, 9 more people join them. How many people are now in the corn maze?" (*Answer: 34 + 9, 43*)
- "There are 18 pecan pies for sale. The baker sells 5 of the pies. How many pies are left?" (*Answer: 18 - 5, 13*)

Prompt your student with the following if he is struggling to begin:

- "How can you make a model to represent the story?"
- "Do you need to add or subtract?"
- "How can you write an expression to represent the story?"
- "How can you use your model to solve the story problem?"

Solving and understanding story problems is a developing skill. With practice and support, your student will become more comfortable with doing so. You can proceed to the next lesson without full mastery of this skill.

Flash's Math Fun!

Picking Pumpkins

"Let's practice our math skills!"

Materials

- Picking Pumpkins Patch, *Dash into Math!* page 13
- Picking Pumpkins Stories and Equations, *Dash into Math!* pages 15 and 16
- crayons
- dry-erase board and marker

Directions

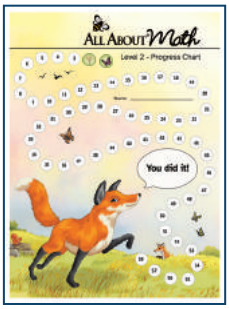
1. Cut apart the *Picking Pumpkins Stories and Equations*, and scatter the pumpkins on top of the *Picking Pumpkins Patch* face down.
2. The players take turns picking a pumpkin from the patch. If needed, you can help read the problem.
3. The player writes the expression that the problem represents on the dry-erase board and then solves the problem. The players check each other's work.
4. If the story problem is solved correctly, that player keeps the card and colors or decorates the pumpkin. If the story problem is solved incorrectly, the pumpkin is placed back in the patch.
5. Play continues until all the pumpkins have been picked from the patch.

Answer Key

A: 15 - 2, 13; B: 10 - 5, 5; C: 24 + 8, 32; D: 13; E: 35; F: 70

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 2 on the Progress Chart.

Lesson 7 Solving Different Types of Story Problems

Objective

Your student will learn to solve a variety of story problems and to write equations that match each problem.

You Will Need

- ☐ *Dash into Math!* pages 41 to 45
- ☐ Double 10-Frame, *Flash's Math Tools* (optional)
- ☐ Two-Color Counters
- ☐ dry-erase board, pocket, and marker
- ☐ Connecting Cubes
- ☐ tape

Before You Begin

Preview Solving a Variety of Story Problems

Previously, your student focused on solving one type of story problem at a time. In this lesson, your student will continue to practice solving a variety of story problems and writing equations. But, the missing values will be in various locations, and your student will have to decide which value is unknown.

Some problems will be Put Together/Take Apart Addend Unknown story problems. Others will be Compare, Difference Unknown story problems, where your student will be asked to find "how many more." Your student will build models, solve equations, and write addition and subtraction equations to represent the story problems.

Review

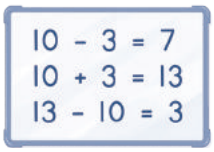
Daily Review

As part of your math time each day, refer to your student's *Daily Review Tracker*. Choose 1 or 2 skills, and take a few minutes to practice.

Review
(continued)

Matching Equations

"You've been doing a lot of great work with story problems." Write the equations 10 – 3 = 7, 10 + 3 = 13, and 13 – 10 = 3 on the dry-erase board, one under the other, with space to separate them.



"I have written 3 equations on the dry-erase board. As you listen to a story problem, think about which equation matches it. Here's the first story problem. There are 10 seahorses holding onto seaweed in the aquarium. Then, 3 more seahorses swim over to join them. How many total seahorses are there?"

"Which equation represents this story problem, and how do you know?" *The equation is 10 + 3 = 13, because the story problem started with 10 seahorses, and then 3 more joined them.*

"Yes! Now, listen to another story problem. There are 10 seahorses holding onto seaweed in the aquarium. Then, 3 of the seahorses leave to swim around. How many seahorses are left holding onto seaweed? Which equation matches this story problem, and how do you know?" *The equation is 10 – 3 = 7, because the story problem started with 10 seahorses, but then 3 left.*

"Yes. How do you know that the last equation, 13 – 10 = 3, does not match either of these story problems?" *Neither of the story problems started with 13.*

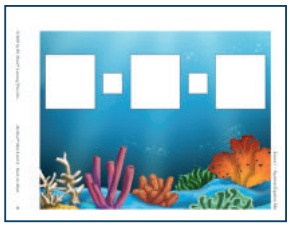
"Good; let's use what we know to solve more story problems!"

New Teaching

Story Problems with a Missing Addend

"Imagine we are on a trip to the aquarium! While at the aquarium, we will practice solving some more story problems and writing equations that represent the stories."

New Teaching
(continued)



Aquarium Equation Mat

Remove the *Aquarium Equation Mat* from *Dash into Math!*, page 41. Place the *Aquarium Equation Mat* into a dry-erase pocket.

"Listen carefully as I read a story problem. Macy is gathering her money to take to the aquarium. She has 15 coins in her piggy bank. Of those coins, 8 are copper colored, and the rest are silver. How many of her coins are silver?"

"Let's use the information from the problem to write an equation. How many coins does Macy have in her piggy bank?" *Fifteen.*

"Yes; write that in the first box. Does 15 represent the total or a number that is being added to or taken away?" *The total.*

"That's right. Put the equal sign in the box next to the 15."

"The problem says that 8 of Macy's coins are copper, and we need to find out how many are silver. What can you write to show this?" *I can write 8 plus and leave the last box blank.*

"Let's solve the problem and find the number of silver coins that Macy has." Allow your student to solve the problem with manipulatives or using mental math.

"How many silver coins does Macy have?" *Seven.*

"Right, Macy has 7 silver coins! Write 7 in the empty box of our equation."

"How does this equation represent the story problem?" *Macy has 15 total coins, 8 of them are copper, and 7 of them are silver.*

Story Problems that Compare

Clear the numbers from the dry-erase pocket. "Macy and her family are on their way to the aquarium! It takes 20 minutes to drive there from their house. Macy's friend, Henry, and his family are meeting them

New Teaching
(continued)

there. It takes Henry 9 minutes to get to the aquarium. How many more minutes does Macy's family have to drive to get to the aquarium than Henry's family?"

"Let's make a model to represent our problem. Which math tool would you like to use: connecting cubes, two-color counters, or drawing a picture?" Let your student choose the math tool she would like to use, and have her make models of Macy's drive and Henry's drive.

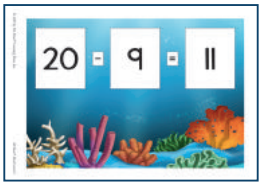
"Now that we have our models, let's think back to the question of how many more minutes it takes for Macy and her family to get to the aquarium. Should we add or subtract?" *Subtract.*

"Good." Write a minus sign after the first number box on the *Aquarium Equation Mat*.

"To find the difference, we will start with Macy's 20-minute ride and take away Henry's 9-minute drive. (Have your student write 20 - 9 on the *Aquarium Equation Mat*). This last box represents how many more minutes Macy and her family have to drive to get to the aquarium."

"If we take away 9 from 20, how many are we left with?" *Eleven.*

"Right! So, Macy's drive to the aquarium takes 11 more minutes than Henry's." Have your student write = 11 to fill in the *Aquarium Equation Mat*.



"Another equation we can write to represent this story is 20 = 9 + 11." (Write the equation on the dry-erase board.)

"Henry's 9-minute drive (point to the 9) plus 11 more minutes (point to the 11) is the same as the 20-minute drive that Macy has (point to the 20)."

"In one problem we solved, we found a missing addend. In the other, we compared numbers to find the difference. How were the problems we solved similar?" *They were both about going to an aquarium. They can both be represented by equations.*

"How were the problems different?" *In one, we subtracted, and in the other, we added. One had a missing number, and the other asked how many more.*

New Teaching
(continued)

"What types of equations did we write to represent the story problems?" *Addition and subtraction.*

Complete Activity Sheet

"Let's practice solving more story problems and writing equations."

Aquarium Adventure

Remove page 43 from the *Dash into Math!* activity book. Cut along the dotted lines. Then, fold the edges together to make a cube. Tape the sides together.

"Let's have more fun solving story problems at the aquarium! Roll the cube, and then we'll work to write an equation and solve the problem."

Encourage your student to use manipulatives or drawings to help her solve the problems. Have your student use the *Aquarium Equation Mat* to write an equation that represents each story problem. Have her solve at least 3 problems.

Answer Key

- Amelia: 5; 9 – 4 = 5 or 4 + 5 = 9
- Alex: 16; 19 – 3 = 16 or 3 + 16 = 19
- Ellie: 3; 8 – 5 = 3 or 3 + 5 = 8
- Crew: 3; 17 – 14 = 3 or 14 + 3 = 17
- Vivian: 20; 18 + 2 = 20
- Kai: 6; 12 – 6 = 6 or 12 = 6 + 6

Look For

This activity book page has a variety of story problem types. Your student might be unsure of what value she needs to solve for.

Here's How to Help: Use either the connecting cubes or the *Double 10-Frame* and two-color counters to act out the story problems. Have her repeat the question in the problem. Match each part of the story to a number in the equation.

New Teaching
(continued)

Math Reflection

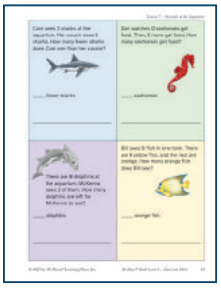
"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "How do you write an equation for a story problem?"
- "How can you use math tools to help you solve story problems?"
- "What is one thing you want to practice more?"

Extended Practice (*Optional*)

If your student struggles to solve the story problems or write a matching equation, or she expressed the need for more practice, continue working on this skill.



Animals at the Aquarium

Turn to page 45 in the *Dash into Math!* activity book.

"It's time to explore the aquarium! Solve the story problems to find out how many of each animal lives at the aquarium. Use the story problem to help you write an equation."

Read each story problem with your student. Encourage her to use manipulatives or the dry-erase board to make a drawing to help solve the problem. She will also write equations that match the problems.

Your student is building problem-solving skills. With practice and support, she will improve, and her confidence will grow. You can proceed to the next lesson without full mastery of this skill.

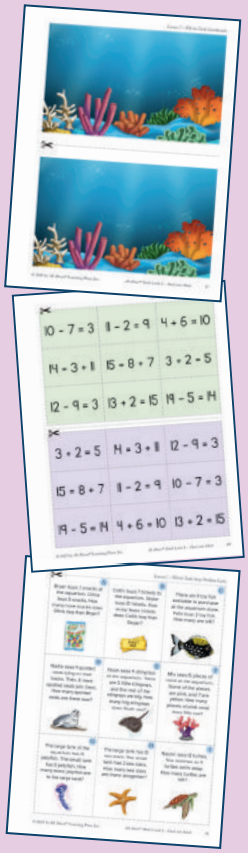
Answer Key

- Sharks: 3; 6 – 3 = 3 or 3 + 3 = 6
- Seahorses: 17; 12 + 5 = 17
- Dolphins: 16; 18 – 2 = 16 or 16 + 2 = 18
- Fish: 5; 13 = 8 + 5 or 13 – 8 = 5

Flash's Math Fun!

Fill the Tank

"Let's practice our math skills!"



Materials

- Fill the Tank Gameboards, *Dash into Math!* page 47
- Fill the Tank Equation Cards, *Dash into Math!* page 49
- Fill the Tank Story Problem Cards, *Dash into Math!* page 51

Directions

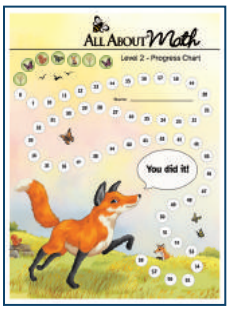
1. Cut out the *Fill the Tank* equation cards, the *Fill the Tank* story problem cards, and the 2 gameboards.
2. Give each player 1 *Fill the Tank* gameboard and 1 set of *Fill the Tank* equation cards. Each player gets either all the green equation cards or all the purple equation cards. Spread them out, with the equation side up, in the workspace. Then, shuffle the story problem cards and place them face down in a stack.
3. Player 1 takes the top card from the story problem card stack and solves the problem. If the problem is correctly solved, Player 1 finds her matching equation card, flips it over, and adds that fish to her tank. If the problem is not correctly solved, the story problem card returns to the bottom of the stack.
4. Player 2 takes a turn.
5. The first player to place 4 fish into her tank is the winner! Optional rule: Choose 1 fish at random to be the winning fish. The first player to add that fish to her tank is the winner!

Answer Key

A: 3 + 2 = 5, B: 10 – 7 = 3, C: 11 – 2 = 9, D: 4 + 6 = 10, E: 14 = 3 + 11, F: 15 = 8 + 7, G: 19 – 5 = 14, H: 13 + 2 = 15, I: 12 – 9 = 3

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 7 on the Progress Chart.

Lesson 12 Adding Three Numbers by Using Commutative and Associative Properties

Objective

Your student will learn to apply the commutative and associative properties to make a ten when adding three numbers within 20.

You Will Need

- ☐ *Dash into Math!* pages 81 to 83
- ☐ 10-Frame, *Flash's Math Tools*
- ☐ glue (optional)
- ☐ Two-Color Counters
- ☐ dry-erase board, pocket, and marker

Before You Begin

Preview Adding Three Numbers

In the last lesson, your student found the sum of three addends by solving a story problem. He looked at the addends to find two that made a 10 and then added the third addend to find the sum.

In this lesson, your student will continue identifying which addends add up to 10 and will then rewrite the expressions by using a 10. For example, if your student is given the addition expression 7 + 4 + 3, he will use the 7 and the 3 to make 10. Then, he will see that 7 + 4 + 3 has the same value as 10 + 4. Understanding this will help your student develop number sense and mental math skills that will be used for future math skills and concepts.

Commutative and Associative Properties

Your student will be applying his understanding of two properties of addition: the commutative property and the associative property. The **commutative property** of addition states that when you add two numbers, the order in which you add them does not matter. For example, 3 + 2 has the same sum as 2 + 3.

The **associative property** of addition states that when adding three or more numbers, you can group them in any way, and the total will be the same. For example, when adding 1 + 2 + 3, you can first add 1 + 2 and then add 3, or you can add 2 + 3 and then add 1. Either way results in the same sum.

Both properties show that addition is flexible and can be done in different ways while still resulting in the same answer.

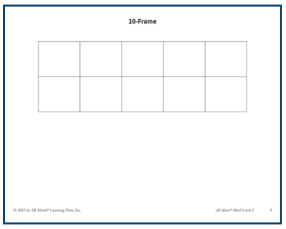
Review

Daily Review

As part of your math time each day, refer to your student's *Daily Review Tracker*. Choose 1 or 2 skills, and take a few minutes to practice.

Making a 10 to Add Three Numbers

"Let's review making a 10 to add three numbers."



10-Frame

Find the *10-Frame* in *Flash's Math Tools*. Place the *10-Frame* into the dry-erase pocket.

"I will read a story problem aloud. Write the equation on the side of the *10-Frame*, and use the *10-Frame* and two-color counters to determine which two numbers equal 10. Then, you will solve the story problem."

"Listen carefully to the story problem. We need to get supplies ready for the soccer game. We need 5 soccer balls, 7 water bottles, and 3 whistles. How many supplies do we need in all?"

> If your student already knows the ways to make 10 by using mental math and is able to explain his thinking, it will not be necessary for him to continue to use the *10-Frame* and two-color counters to solve the equation.
>
> Tip!

"What is the sum, and how did you find it?" *The sum is 15. I put 10 two-color counters on the 10-Frame and then added 5 more. I counted up: 11, 12, 13, 14, 15.*

"Good. Write the number 15 to complete the equation. Adding 10 and some more ones will help us in the next part of the lesson."

New Teaching

Drawing to Make 10

"Let's imagine we are preparing for a soccer competition. We need to collect all the equipment to make sure we have enough for all the teams!"

"We can use what we know about adding 10 and some more ones to add the three groups of soccer balls we found. We will look to see if 2 of the 3 addends will make 10." Write 6 + 4 + 6 on the dry-erase pocket.

"This represents all the soccer balls we have found so far. The first thing we need to do is decide if there are two numbers that make 10. We can use a drawing on the *10-Frame* to help us."

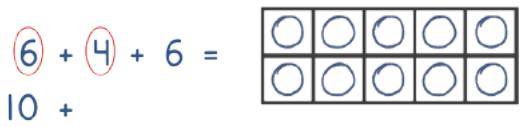
> Your student may use two-color counters if he struggles with drawing on the 10-Frame.
>
> **Tip!**

"I see that one of the addends is the number 6. I will draw 6 circles on the *10-Frame*."

"Do you notice another number in the expression that we can use to try to make a 10?" *Let's try the number 4.*

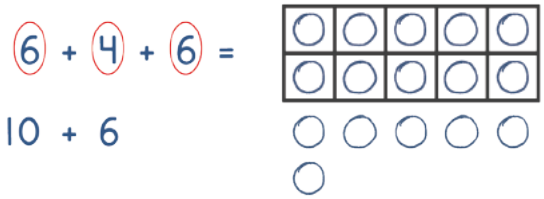
"Good. Draw 4 more circles on the *10-Frame* to see if it makes 10."

"I see that 6 and 4 equals 10." Circle the 6 and 4, and write = 10 + underneath the expression 6 + 4 + 6.



"Which addend is left to add in the expression?" *Six.*

"Yes. Add 6 circles to the *10-Frame*, and then write + 6 after the 10."



New Teaching
(continued)

"What is our sum?" *Sixteen.*

"So, 6 + 4 + 6 is the same as 10 + 6. And, 10 + 6 is 16, so 6 + 4 + 6 is 16. We found 16 soccer balls."

"Now, let's see how many water bottles we can find to help keep the players hydrated. We can write the groups of water bottles that we find as an expression to help us decide if we have enough for all the players. Write 7 + 3 + 8 on the dry-erase board. Are there two addends in the expression that you know make 10?" *Yes.*

If your student is not able to mentally find two numbers that make 10, have him continue to use the *10-Frame* and either two-color counters or drawing.

"Which two addends make 10?" *They are 7 and 3.*

"Yes, 7 and 3 make 10. Circle the 7 and the 3 in the expression, and then add an equal sign and the number 10. What number is left to add to the expression?" *Eight.*

"Write + 8 after the 10."

"So, 7 + 3 + 8 is the same as (point to the equal sign) 10 + 8. What is 10 plus 8?" *Eighteen.*

"If 10 plus 8 is 18, what is 7 + 3 + 8?" *Eighteen.*

"These two expressions are equal; they have the same sum."

"This time, let's find the amount of orange slices that we have to share with the players for an after-game snack. Write 6 + 2 + 4 on the dry-erase board."

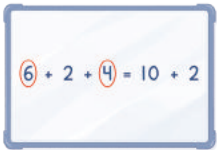
"What addends in the expression make 10?" *They are 6 and 4.*

"Circle the 6 and the 4 in the expression. Since 6 and 4 equal 10, add an equal sign after the expression and write 10."

"What number is left to add to the expression?" *Two.*

New Teaching
(continued)

"Write + 2 after the 10 to complete the expression 10 + 2."



"What does this equation tell us?" *It tells us that 6 + 2 + 4 has the same sum as 10 + 2.*

"What is the sum of each side?" *Twelve.*

"Yes. Because 10 plus 2 is 12, 6 + 2 + 4 is also 12."

"What does it mean when there is an equal sign between these two expressions?" *It means that they have the same value. It means that they equal the same number.*

"You used your understanding of ways to make 10 and of adding 10 and more ones to help you find the values of these expressions."

Use the following addition expressions for practice:

- 1 + 5 + 9 (*Answer: 15*)
- 3 + 4 + 7 (*Answer: 14*)
- 4 + 6 + 8 (*Answer: 18*)

If your student is struggling to begin, prompt him with the following:

- "Which two numbers make 10?"
- "What number is left in the expression?"
- "What does it mean when there is an equal sign between these two expressions?"

Complete Activity Sheet

"Let's find the value of an expression with three numbers!"

Soccer Matchup

Remove page 81 from the *Dash into Math!* activity book. Cut apart the cards.

Have your student match each soccer ball expression card to the goal expression card that has the same value. Then, have him solve the expressions and match each to the jersey that has the value of both expressions.

New Teaching
(continued)

Answer Key

- 19: 9 + 2 + 8, 10 + 9
- 18: 4 + 6 + 8, 10 + 8
- 12: 2 + 9 + 1, 10 + 2
- 14: 5 + 4 + 5, 10 + 4

Look For
Your student might have some confusion about how the two expressions equal the same amount.

Here's How to Help: Show him simple expressions on either side of an equal sign to help him understand. For example, ask him to tell you two ways to make 6. Then, write the expressions with an equal sign between them (for example, 2 + 4 = 3 + 3). Read it as "2 plus 4 is the same as 3 plus 3." Explain that since both expressions equal 6, they are also equal to each other.

Math Reflection

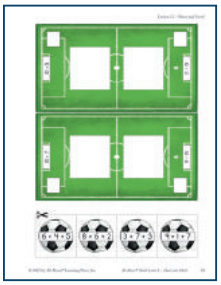
"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "Why do you try to make 10 when you have three addends?"
- "What does it mean when an equal sign is between two expressions?"
- "What is one thing you want to practice more?"

Extended Practice (*Optional*)

If your student is not able to apply the commutative and associative properties (to reorder and regroup the numbers so they are easier to add) when adding three numbers, or he expressed the need for more practice, continue working on this skill.



Shoot and Score!

Remove page 83 from the *Dash into Math!* activity book. Cut apart the soccer balls along the bottom of the page.

"Let's practice scoring soccer goals!"

Have your student match the expression with three addends to the expression with two addends (10 + ___) that equals the same amount, and glue each one in place. Write the sum of both sides in the smaller blank box.

New Teaching
(continued)

Your student will continue to practice adding three numbers within 20. You can proceed to the next lesson without full mastery of this skill.

Answer Key

- 10 + 5 = 6 + 4 + 5, 15
- 10 + 3 = 3 + 7 + 3, 13
- 10 + 7 = 9 + 1 + 7, 17
- 10 + 6 = 8 + 6 + 2, 16

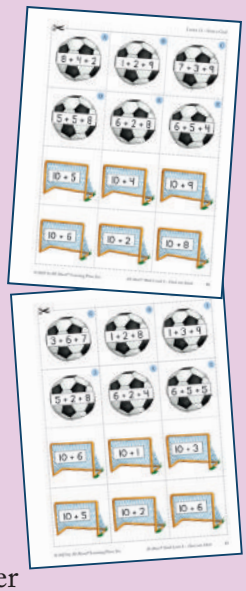
Mark the Daily Review Tracker

Write today's date next to the skill: Apply associative properties of addition to solve problems involving 3 numbers. Include this in your rotation of daily review items.

Flash's Math Fun!

Score a Goal!

"Let's practice our math skills!"



Materials

- Score a Goal! Matching Cards, *Dash into Math!* pages 85 to 87
- 10-Frame and Two-Color Counters (if needed)
- dry-erase board and marker (if needed)

Directions

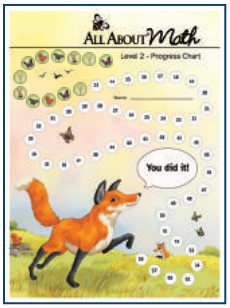
1. Cut apart the *Score a Goal!* matching cards. Place the soccer ball cards face down in 4 rows of 3, and place the soccer goal cards face down in 4 rows of 3.
2. The players take turns flipping over one soccer ball card and one soccer goal card to find a match. The cards match if the expression on the soccer ball equals the expression on the soccer goal.
3. If the cards match, the player takes the cards. If not, the player turns the cards back over, and the next player takes a turn.
4. The game ends when all the cards are matched. The player with the most cards at the end of the game is the winner!

Answer Key

A: 8 + 4 + 2 matches 10 + 4, B: 1 + 2 + 9 matches 10 + 2, C: 7 + 3 + 9 matches 10 + 9, D: 5 + 5 + 8 matches 10 + 8, E: 6 + 2 + 8 matches 10 + 6, F: 6 + 5 + 4 matches 10 + 5, G: 3 + 6 + 7 matches 10 + 6, H: 1 + 2 + 8 matches 10 + 1, I: 1 + 3 + 9 matches 10 + 3, J: 5 + 2 + 8 matches 10 + 5, K: 6 + 2 + 4 matches 10 + 2, L: 6 + 5 + 5 matches 10 + 6

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 12 on the Progress Chart.

Lesson 19 Show What You Know! 1: Adding and Subtracting

Objective

The purpose of this lesson is to assess your student's academic growth and performance over time and to identify both areas of strength and areas needing improvement.

You Will Need

- ☐ *Dash into Math!* pages 127 to 128
- ☐ Double 10-Frame, *Flash's Math Tools*
- ☐ Tens and Ones Chart, *Flash's Math Tools*
- ☐ Base-10 Blocks
- ☐ Two-Color Counters
- ☐ Connecting Cubes
- ☐ dry-erase board, pocket, and marker

Before You Begin

Preview Lesson

It's time to do a review to help you monitor your student's progress and see what your student has retained versus what might still need some practice. Don't worry if your student struggles with any concepts; at the end of this lesson, there is a chart that helps you know what lessons to review if that happens.

Remember that math skills develop gradually over time as your student builds on what she has learned. Through regular practice, such as daily reviews, engaging activities, and *Flash's Math Fun!* games, your student will develop a stronger grasp of math, improving her skills step by step over time.

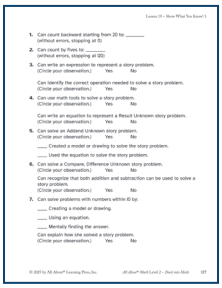
Like with all the lessons, you do not have to complete the review in one sitting. Feel free to take breaks or to break up this lesson over multiple days. Keep things light, and be sure to encourage your student along the way!

Progress Monitoring

"You worked really hard learning about adding and subtracting to solve story problems. Now, we will do a review so you can show me what you learned. You can take as much time as you need to think about and solve the problems."

Progress Monitoring
(continued)

"Let's show what you know!"



Show What You Know! 1

Turn to page 127 in the *Dash into Math!* activity book for questions 1 to 7.

Question 1

"Show me how you can count backward from 20."

Write the last number that your student said before either making an error or reaching 0 on the line for question number 1.

> Students are not expected to count backward from 20 without error until the end of the Level 2 program.

Question 2

"Show me how high you can count by fives, starting with the number 5."

"Great job! You are counting higher and higher."

To keep a record of how high your student can count, write the last number that she said before making an error on the line for question number 2.

> Students are not expected to count by fives to 120 without error until the end of the Level 2 program.

Question 3

You will need the dry-erase board and the marker for this question.

"Listen carefully to this story problem as I read it aloud to you, and then write an expression that matches it. There are 17 water balloons. Then, 3 of the water balloons pop. How many balloons are there now?"

"Write an expression to represent the story." (*Answer: 17 - 3*)

Circle your observations in question number 3

Progress Monitoring
(continued)

Question 4

Place the *Double-10 Frame* in the dry-erase pocket. You will also need the two-color counters.

"This time, you will solve the story problem. Listen carefully as I read it aloud. There are 19 boats parked at the dock. Then, 6 of the boats drive off. How many boats are now parked at the dock?"

"Use the two-color counters and the *Double-10 Frame* to retell this story." Reread the story if needed.

"Now, write an equation on the dry-erase board that matches this story problem." Your student should write 19 - 6 = 13. The equation 6 + 13 = 19 would also be correct.

Circle your observations in question number 4.

Question 5

"Here's another story problem to solve. Listen carefully as I read it aloud. At the wildlife rescue center, there are 7 monkeys resting in the trees. The rest of the monkeys are having a snack. There are 12 monkeys altogether at the center. How many monkeys are having a snack?"

Write the equation 7 + ___ = 12 on the dry-erase board.

"Use the math tools or the equation to help you solve the problem."

Circle your observations in question number 5.

You can take a short break if needed.

Question 6

You will need the connecting cubes for this question. On the dry-erase board, write the following equations: 9 - 5 = 4, 5 + 4 = 9, 9 + 5 = 14, 14 - 9 = 5.

"Listen carefully as I read another story problem so that you can make a model. Sam has 9 baseball cards. Gracie has 5 baseball cards. How many fewer baseball cards does Gracie have than Sam?"

Progress Monitoring
(continued)

"Use the connecting cubes to make a model of both Sam's and Gracie's baseball cards." Your student should create a tower of 9 and a tower of 5 connecting cubes.

"How many fewer cards does Gracie have than Sam?" *Four.*

Point to the equations written on the dry-erase board. "Which two equations can we use to represent this story problem?" *We can use 9 – 5 = 4 and 5 + 4 = 9.*

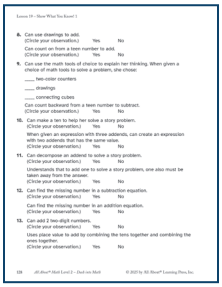
Circle your observations in question number 6.

Question 7

Have the *Double-10 Frame* in the dry-erase pocket, two-color counters, connecting cubes, and dry-erase marker available for your student.

"Listen carefully as I read aloud another story problem. Then, solve the problem, and explain to me how you found your answer. Sabrina makes 10 cookies. Four of the cookies are chocolate chip, and the rest are peanut butter. How many peanut butter cookies does Sabrina make?" Your student should find that 6 cookies are peanut butter and explain how she solved the problem.

Circle your observations in question number 7.



Show What You Know! 1

Turn to page 128 in the *Dash into Math!* activity book for questions 8 through 13.

Question 8

On the dry-erase board, write 13 + 5 = __. On the *Double-10 Frame* in the dry-erase pocket, draw 13 circles.

"Complete the model to match the equation, and then find the answer to the equation."

If your student did not count on from 13 to find the sum, point out that she can also count on to find the sum. Ask her to count on from 13.

Circle your observations in question number 8.

Progress Monitoring
(continued)

Question 9

On the dry-erase board, write 19 - 3 = __. Have the two-color counters, the *Double-10 Frame* in the dry-erase pocket, and the connecting cubes available for your student.

"Choose a math tool that you would like to use to solve the problem."

"Share with me how you found the answer."

If your student did not count backward from 19 to find the difference, point out that she can also count backward to find the difference. Ask her to count backward from 19.

Record your observations in question number 9.

You can take a short break if needed or continue on another day.

Question 10

You will need the dry-erase board and marker for this question. Have the *Double-10 Frame* and two-color counters also available.

"Listen carefully to another story problem. Lila's family has lots of pets! They have 6 fish, 3 dogs, and 4 hamsters. How many pets do they have in all?"

"Write an equation that represents the story." Reread the story if needed. Your student should write 6 + 3 + 4 = ___ on the dry-erase board.

"What numbers can we combine to make a ten? Use the math tools if you need to." *We can combine 6 and 4.*

If your student does not recognize that 6 and 4 make a ten, make a note to continue to practice this skill, and then move on to the next question.

"That's right! Using that 10, show me another expression that is the same as 6 + 3 + 4" *The expression is 10 + 3.*

"So, how many pets does Lila's family have in all?" *They have 13 pets.*

Progress Monitoring
(continued)

Circle your observations in question number 10.

Question 11

You will need the *Double 10-Frame* and two-color counters for this question.

"Listen carefully to the next story problem, and think about how to solve it. In the garden, there are 9 red flowers and 5 yellow flowers. How many flowers are there in all?"

"Our friends Sara and Clay are working to solve this problem. They both placed 9 counters in the top 10-Frame to show 9 flowers. Then, they placed 5 counters in the bottom 10-Frame to show 5 more flowers."

"Clay broke apart the number 5 to help him solve the problem. How do you think he found his answer?" Your student might break apart 5 in any way that helps her create a known fact. For example, 5 = 1 + 4, so 9 + 1 + 4 = 14.

"Our friend Sara solved this problem, but she got a different answer. She knew she could add 1 to the top 10-Frame to make a ten. So, she thinks the answer is 15. When using this strategy, what else does Sara need to do to get the correct answer?" *She also needs to take 1 away.*

Circle your observations in question number 11.

Question 12

Have the *Double-10 Frame* and two-color counters available for your student. On the dry-erase board, write 16 - ___ = 7.

"Find the missing number in this equation." (*Answer: 9*)

When your student has completed the problem, write ___ + 5 = 18 on the dry-erase board.

"Let's try one more that has the missing value in a different place. What is the missing number in this equation?" (*Answer: 13*)

Circle your observations in question number 12.

Question 13

Have the base-10 blocks, connecting cubes, dry-erase board, and marker available for your student.

Progress Monitoring
(continued)

Tens and Ones Chart

Find the *Tens and Ones Chart* in *Flash's Math Tools*.

On the dry-erase board, write 45 + 23 = ___.

"Find the sum of 45 plus 23. You can use any of the tools to help you." (*Answer: 68*)

"Tell me how you found your answer."

Circle your observations in question number 13.

Math Reflection

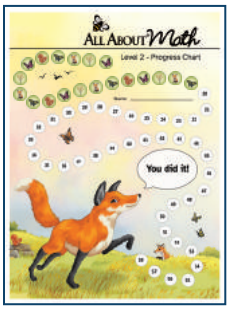
"Let's Reflect!"

Ask your student the following questions:

- "What would you like more practice with?"
- "What is your favorite topic to practice?"

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 19 on the Progress Chart.

Skill Chart

This section is just for the parent.

Take a look at your student's progress, and think about the areas where your student could use extra practice building her skills. This is a great time to update your student's progress on her *Daily Review Tracker*.

Refer back to any lesson below that may require more practice.

> Taking time to review the questions your student found difficult can help identify any patterns or areas where she might need extra help. Going over these challenging questions again gives her a chance to practice these skills.
>
> Tip!

Question 1: Counting backward	Lesson 3
Question 2: Counting by fives	Lesson 5
Question 3: Writing expressions to match a story problem	Lesson 2
Question 4: Writing and solving an equation to represent a Result Unknown story problem	Lesson 4
Question 5: Solving an Addend Unknown story problem	Lesson 5
Question 6: Solving a Compare, Difference Unknown story problem by using both addition and subtraction	Lesson 6

Skill Chart
(continued)

Question 7: Building fluency by solving a story problem	Lesson 8
Question 8: Counting on from a teen number	Lessons 9 and 15
Question 9: Counting backward from a teen number	Lesson 10
Question 10: Creating a ten to solve a story problem with three addends	Lessons 11 and 12
Question 11: Using different strategies to add	Lessons 13 and 14
Question 12: Solving problems with missing numbers in different positions	Lesson 16
Question 13: Adding two-digit numbers	Lessons 17 and 18

Your student will continue to practice and build these skills through the daily reviews and within the lessons. However, if your student had difficulty answering 2 or more questions within questions 3 through 13, spend a few days reviewing the material before proceeding.


Wow – you'll be counting
in the hundreds now.
But don't let that worry you...
It's just a lot of tens.
It's like when I sneak down
one of my favorite trails to the
oak woods in autumn – you should see
how many acorns there are! Hundreds!
But I love eating them,
so no matter how many there are...
I just dig right in!

Lesson 28 Adding and Subtracting on a Number Line

Objective

Your student will learn to use an open number line to solve equations that involve composing or decomposing.

You Will Need

- ☐ *Dash into Math!* page 187
- ☐ Open Number Line, *Flash's Math Tools* page 12
- ☐ Number Mat 1 to 120, *Flash's Math Tools* (optional)
- ☐ dry-erase pocket and marker

Math Vocabulary

open number line

Before You Begin

Preview Using Open Number Lines

In the previous lesson, your student was introduced to a number line. He explored how the number line can be useful for representing numbers and addition and subtraction equations. He worked to understand that the direction the arrow points on a number line determines if the represented equation is an addition or a subtraction equation.

In this lesson, your student will learn to make jumps on an open number line. An **open number line** is a blank line that allows students to visualize and represent any numbers to solve a math problem. Your student can create a number line in a way that aligns with his own thinking, such as jumping by tens, fives, or other convenient increments. This lesson will transition away from making individual jumps by ones to making larger jumps by decomposing the number in the ones place. This allows students to solve problems faster than if they have to count by ones. For example, to add 28 + 7 on the number line, the student can decompose the 7 to jump by 2 to get to 30 and then by 5 to get to 35.

When he has constructed and used the open number line, it becomes a visual that your student can mentally recall to solve problems. This approach supports problem solving, strengthens the understanding of place value, and encourages strategic reasoning for operations.

Review

Daily Review

As part of your math time each day, refer to your student's *Daily Review Tracker*. Choose 1 or 2 skills, and take a few minutes to practice.

Counting by Tens

"Let's practice counting by tens. I will say a number, and you will count on by tens." Say the number 32, and stop your student at the number 72. (*Answer: 42, 52, 62, 72*)

> Your student can use the *Number Mat 1 to 120* from *Flash's Math Tools* to help if needed.
>
> Tip!

Point out that the digit in the tens place increases while the digit in the ones place stays the same.

"Now, let's count backward by tens. Start at the number 87, and I will tell you when to stop." Say the number 87, and stop your student at the number 47. (*Answer: 77, 67, 57, 47*)

Point out that the digit in the tens place decreases while the digit in the ones place stays the same.

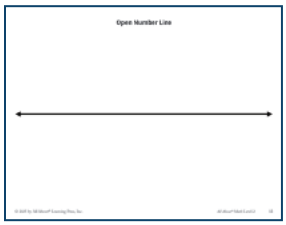
"Counting backward and forward will help us solve addition and subtraction equations using a number line."

New Teaching

Introduce Open Number Lines

"There are many animals, like kangaroos, that jump to get from one place to another. Kangaroos can leap 30 feet in 1 jump! Let's think about our jumps on today's number line activity like kangaroo jumps!"

New Teaching
(continued)

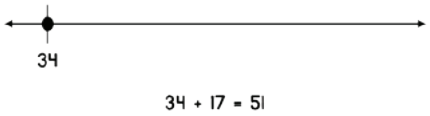


Open Number Line

Find the *Open Number Line* in *Flash's Math Tools* on page 12. Place the *Open Number Line* into the dry-erase pocket.

"We have used number lines to represent numbers and equations. The number lines we used had tick marks and numbers to help us. There is another type of number line that we can create to help us solve any type of addition or subtraction problem. It is called an open number line. An **open number line** does not have any numbers or tick marks. We add the tick marks, points, and numbers by using the problems we are solving."

Write the equation 34 + 17 = 51 on the *Open Number Line*. "We can represent the equation 34 + 17 = 51 by adding a tick mark and a point and labeling the point with the number 34."



34 + 17 = 51

"To show that I am adding 17, which way do I need to draw the arrow for the jumps, and how do you know?" *You will draw the arrow to the right, because it is an addition problem.*

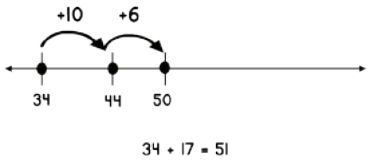
"The number 17 has 1 ten, so I will draw 1 arrow to the right and write + 10 above it. That's a big kangaroo jump instead of counting by ones! Then, I will add a tick mark and a point. What number should I use to label it?" *Forty-four.*

34 + 17 = 51

"Now, we need to add the ones. How many ones are in 17?" *Seven.*

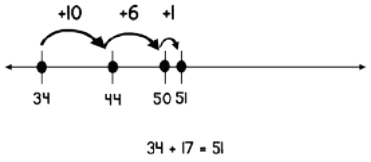
"We can make different jumps to the right by breaking the 7 ones apart to make it easier to add. I will start with a jump of +6 to get to the next ten. That's another big kangaroo jump." Model drawing an arrow to the right and add a +6 above it, and then add a tick mark and a point.

"Now, I am at the next ten, which is 50. Label the point."



"Now, we just need to add the other one." Model adding the last one by drawing an arrow to the right with +1 placed above it. "What number do we need to label the point with to represent the equation?" *Fifty-one.*

"Correct. Label the point with 51."



"Using an open number line is just like using a number line with tick marks, but you create it by using only the numbers in the equation, and you might take some big kangaroo jumps instead of always counting by ones. Let's practice solving some equations by using an open number line."

Solving Addition and Subtraction Equations on an Open Number Line

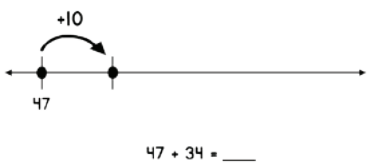
"Imagine that we saw a kangaroo make 47 jumps, pause, and then make 34 jumps. We want to find out how many jumps we saw in all. Do we need to add or subtract to find the total number of jumps?" *Add.*

"Yes. We can use both place value and an open number line to help us. Write the equation that matches the problem on the *Open Number Line*." (*Answer: 47 + 34 =* ___)

"If we are going to add, which way will we move on the *Open Number Line*?" *To the right.*

"I will add a tick mark and a point, and then label the point with 47 on the left side of the *Open Number Line*, so we can jump to the right. Let's use place value to help us know how many groups of tens and ones to jump. How many tens and ones are in the number 34?" *It has 3 tens and 4 ones.*

Model starting at 47, drawing an arrow pointing to the right, and labeling the jump as +10. Then, draw a tick mark, and place a point.



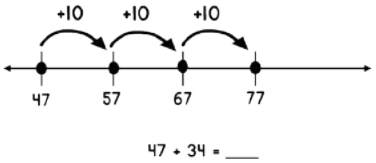
New Teaching
(continued)

"We added one big jump of 10 to 47. What is 1 more ten from 47?" *Fifty-seven.*

> If your student is struggling to understand why the point represents 10 more, you can model it by drawing 10 small jumps. Ask your student to count on for each small jump, and then draw a large arrow above the smaller jumps so that your student can make the connection that 10 small jumps are the same as 1 big jump when counting by tens.

"The point represents the number 57. Label the point with the number 57."

"Now, you need to add the other tens." Have your student follow the same steps to add 67 and 77 to the *Open Number Line*.



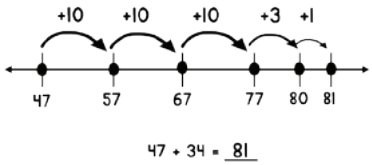
"We added all the tens. Now, we need to add the 4 ones. We can make a jump of +3 to get to the next ten." Model making a jump, and then add a tick mark, a point, and +3 above the arrow.

"What number do we use to label the tick mark?" *Eighty.*

"Right. Label the point with the number 80."

"Show how you can add the last one on the *Open Number Line*." Your student should make a jump and then add a tick mark, a point, and +1 above the arrow.

"What number do we use to label the tick mark?" *Eighty-one.*



"We used place value by breaking down the ones to find the sum on the *Open Number Line*. The kangaroo made 81 jumps. Write the sum to complete the equation."

"Now, let's try another problem. We saw another kangaroo make 53 jumps, and 25 of the jumps were with her baby. How many jumps were without her baby? What equation represents this situation?" *The equation is 53 - 25 = ___.*

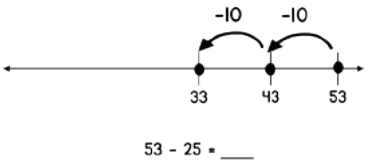
New Teaching
(continued)

"Write the equation on the *Open Number Line*. On the far right of the *Open Number Line*, add a tick mark and a point, and label the point 53. Why do we need to start on the right side?" *So that we can jump to the left to subtract.*

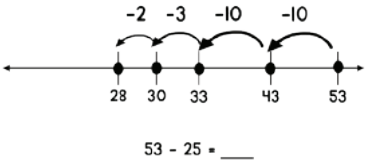
"How many tens and ones are in 25?" *There are 2 tens and 5 ones.*

"We will start by subtracting the tens." Model drawing an arrow to the left. Add a tick mark and a point. Label the arrow - 10, and label the point 43.

"Use the *Open Number Line* to finish subtracting the tens." Your student should draw another arrow to the left, add a tick mark and a point, and then label the jump - 10 and the point 33.



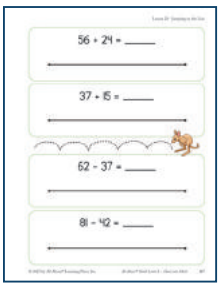
"We subtracted all the tens. Show me how you can break apart the 5 ones to subtract. Then, write the difference to complete the equation." Your student should model drawing an arrow to the left, write - 3 above the arrow, add a tick mark and a point, and then label the point with 30. He will draw another arrow to the left, write - 2 above the arrow, add a tick mark and a point, and then label the point with 28.



"We used both place value and an open number line to subtract. The kangaroo jumped backward 28 times without her baby."

Complete Activity Sheet

"Let's add and subtract by using open number lines."



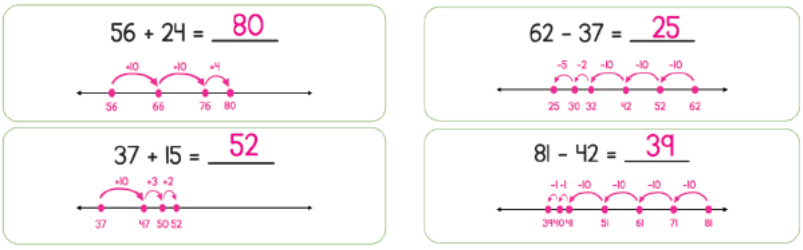
Jumping on the Line

Turn to page 187 from the *Dash into Math!* activity book.

Have your student solve the addition and subtraction equations by using the open number lines. Have him fill in the sum or difference to complete the equation.

New Teaching
(continued)

Answer Key



Look For
Your student might need help making big jumps of numbers.

Here's How to Help: Allow your student to draw each individual jump on the open number line and to count each of those jumps.

Math Reflection

"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "What is one thing you enjoy about using open number lines?"
- "How can place value help you when you add and subtract on the number line?"

Extended Practice (*Optional*)

If your student cannot add and subtract by using an open number line, or he expressed the need for more practice, continue working on this skill by using the following equations:

- 38 + 12 = ___ (*Answer: 50*)
- 28 + 53 = ___ (*Answer: 81*)
- 60 - 22 = ___ (*Answer: 38*)

Your student will be able to practice adding and subtracting by using an open number line as a strategy to solve equations. You can proceed to the next lesson without full mastery of this skill.

Flash's Math Fun!

Connect the Kangaroos

"Let's practice our math skills!"

Materials

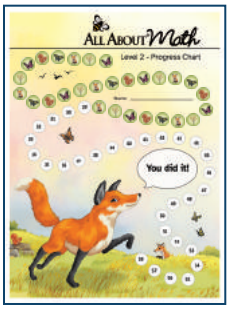
- Connect the Kangaroos Equation Cards, *Dash into Math!* page 189
- Connect the Kangaroos Gameboard, *Dash into Math!* page 191
- Open Number Line, *Flash's Math Tools*
- Two-Color Counters (to use as game pieces)

Directions

1. Cut apart the *Connect the Kangaroos* equation cards, mix them up, and stack the cards with the kangaroo side up.
2. The players take turns choosing an equation card and solving it by using an open number line. Once the player has solved the problem, that player can turn the card over to find the correct answer.
3. If correct, the player chooses a space on the gameboard and places his game piece on it.
4. If incorrect, the player places the equation card face down.
5. The player who first gets 3 game pieces in a row, a column, or a diagonal is the winner!

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 28 on the Progress Chart.

Lesson 35 Solving Two-Step Story Problems with Length

Objective

Your student will learn to write equations to represent and solve two-step story problems about length using calculations within 100.

You Will Need

- ☐ *Dash into Math!* pages 227 and 228
- ☐ dry-erase board, pocket, and marker
- ☐ Number Cards, *Flash's Math Tools* (Cards 12 to 20, optional)
- ☐ Open Number Line, *Flash's Math Tools* (optional)

Before You Begin

Preview Solving Two-Step Story Problems

In this lesson, your student will solve story problems about length by using calculations within 100. She will continue to use tape diagrams to model two-step story problems while also writing equations to represent the problems.

Solving two-step story problems can be challenging for students. To find the answer to this type of problem, they need to complete two operations. This lesson will walk you through how to help your student step by step so that she can become confident in solving this type of problem. Modeling how to chunk information and talking about what the numbers represent can be helpful for your student as she works toward being able to solve story problems independently.

This lesson will help your student develop real-world problem-solving skills. Your student will continue to explore measurements of length in different units and gain more practice with solving story problems.

Review

Daily Review

As part of your math time each day, refer to your student's *Daily Review Tracker*. Choose 1 or 2 skills, and take a few minutes to practice.

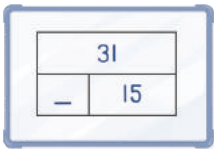
Review
(continued)

Using a Tape Diagram to Solve a Story Problem

"In the last lesson, you explored a new tool that can help you represent a story problem. It is called a tape diagram. What do you remember about a tape diagram?" *It is made of rectangles. The amount in the top rectangle is the same as the combined amounts in the bottom rectangles. We used a blank space to represent a missing amount.*

"Right. A tape diagram helps us model the information we know and the information we are looking for. Let's practice using a tape diagram to represent a story problem. Listen carefully as I read the story problem and then draw a tape diagram on the dry-erase board."

"Sam's golf team poster is 31 inches long. He had to cover up a portion of it so he could fit another poster on the wall. Now, only 15 inches of the poster is showing. How long is the piece that Sam had to cover up?" Your student should draw a tape diagram to represent the story problem.



"Use your tape diagram to think about how to represent this information in an equation, and then write the equation on the dry-erase board and solve it." Your student can choose to use any familiar strategy to find the answer. *(Answer: 16 + 15 = 31 or 31 – 15 = 16)*

"That means 16 inches plus 15 inches equals 31 inches."

New Teaching

Writing Equations to Solve Two-Step Story Problems

"Let's imagine we are playing golf! While we play, we will solve some story problems. We can use tape diagrams and write equations to help us solve the problems."

"Here's our first story problem. Listen carefully as I read it aloud."

"On the first hole, one player hit the ball 25 yards away from the hole. The second player hit the golf ball a little farther from the hole, and the third player hit the ball 33 yards away from the hole. Altogether,

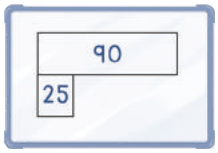
New Teaching
(continued)

their golf balls were 90 yards away from the hole. How far was the second player's ball from the hole?"

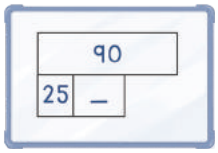
"Let's start by drawing a tape diagram to represent the story problem. What number should we write in the top box of our diagram?" *Ninety.*

"Yes. Draw a tape diagram on the dry-erase board, and then add that information."

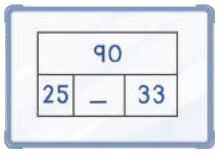
"We know that three players hit golf balls. Our tape diagram will look a little different for this problem, because we need to make a box to represent the distance for each ball. We know that the first player hit the ball 25 yards. Draw a rectangle, and then add 25 to the diagram."



"The second player hit the golf ball a little farther than the first player, but the story doesn't tell us how far. Since we know that the ball traveled a little farther, we want to make this box a little larger than the first one. Represent this information in our tape diagram."



"The story tells us that the third player hit the golf ball 33 yards. Add another box to our tape diagram to represent that information."



"Good. Our tape diagram shows that the golf balls traveled a total distance of 90 yards (point to the 90): 25 yards by the first player (point to the 25), an unknown length by the second player (point to the blank space), and 33 yards by the third player (point to the 33)."

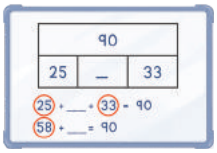
New Teaching
(continued)

"We need to add the distances that the players hit the ball to show that it traveled a length of 90 yards. What is the equation for this story problem?" *It is 25 + ___ + 33 = 90.*

> If your student is unsure, explain and model that the values in the bottom 3 rectangles need to be added together to equal 90. The bottom 3 rectangles together equal the same length as the top rectangle.
>
> **Tip!**

"Now, let's solve the problem! Adding 25 and a blank space will not tell us anything, so let's begin by adding 25 and 33." *(Answer: 58)*

"The sum tells us that Player 1 and Player 3 hit the ball a total distance of 58 yards. But, that's not what the question asked us to find. We need to determine how far Player 2 hit the ball. This type of problem is a two-step problem. We will need to complete two steps to find the missing value. What do you think our second step should be?" Allow your student to share her thinking. On the dry-erase board, rewrite the equation to combine the information that is now known.



"Our second step is to figure out what number can be added to 58 to equal 90. We can either add to find the answer or subtract. Show me how you will solve for the missing value." *(Answer: 32)*

> Your student can model the problem by using the *Open Number Line* if needed. She should count up from 58 to 90, or count back from 90 to 58.
>
> **Tip!**

"Yes. Write 32 on the tape diagram and in the blank in the equation. We have 25 yards plus 32 yards plus 33 yards equals 90 yards."

"Let's try solving another two-step problem at the golf course! Listen carefully to the story problem."

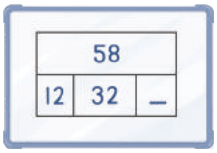
"Before his round of golf, Corey went to the putting green to practice. On his first putt, the golf ball rolled 12 inches. On his second putt, the golf ball rolled 32 inches. He's not sure how far he putted his third ball, but altogether, he putted a total distance of 58 inches. What is the length of Corey's third putt?"

New Teaching
(continued)

"Let's start by making a tape diagram." Have your student create the top rectangle of the tape diagram and label it with the number 58.

"We know that Corey's first putt was 12 inches and that his second putt was 32 inches. Add that information to the tape diagram." Your student should build onto the tape diagram by adding two more rectangles labeled 12 and 32, respectively. Since 12 is a smaller value than 32, that rectangle should be smaller.

"Remember, we don't know the distance of his third putt. Represent that in the tape diagram." Your student should draw the last box and label it with a blank space.



"Now, use your tape diagram to write the equation that represents the story problem on the dry-erase board, and then explain how you know it is correct." *We need to add 12, 32, and the blank space together. So, I wrote 12 + 32 + ___ = 58.*

"Yes. Now, we need to solve the problem to find the length of Corey's third putt. We need to complete two steps to solve this problem. What should we do first?" *Add the 2 distances that we know he putted.*

"So, 12 plus 32 is the same as what number?" *Forty-four.*

"Remember, that is not our answer, because it doesn't tell us the total amount after the third putt. That was just the first step. What is our second step?" *Subtract 44 from 58. Count up from 44 to 58.*

"So under 12 + 32 + ___ = 58, write 44 + ___ = 58. Use the strategy and math tools of your choice to find the answer. Write it on the tape diagram and in the blank of the equation."

"So, what was the length of Corey's third putt?" *14 inches.*

"How did you find that value?" *The third putt was 14 inches. I found out how far Corey's first two putts were, and then I subtracted that from the total distance to find out how long the third putt was.*

Have your student continue creating tape diagrams and writing equations to represent and solve the following story problems:

- Jess had to make some shorter shots to avoid some trees. One of her shots was 56 yards. She made another shot that was 25 yards. She

is unsure how far the ball traveled during a third shot. So far, her shots went a total distance of 99 yards. How far did Jess hit her third ball? *(Answer: 18 yards)*

- During Riley's round of golf, he landed in the sand 3 times! The first time, he hit his ball out, and it went 17 yards. He is unsure about the length of his second shot, but the third time his golf ball went 34 yards. If his three shots went 71 yards total, how far did he hit the golf ball on his second shot? *(Answer: 20 yards)*

Complete Activity Sheet

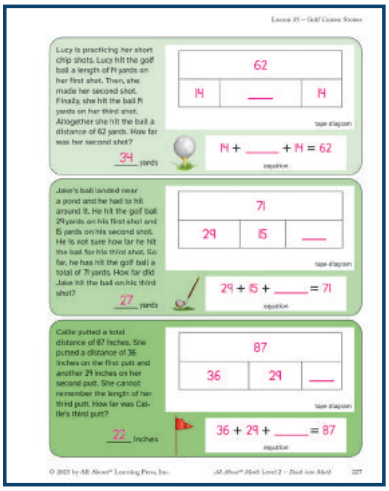
"Let's practice solving more two-step story problems."

Golf Course Stories

Turn to page 227 in the *Dash into Math!* activity book.

"Let's solve more stories at the golf course! To help you solve each two-step problem, make a tape diagram and write an equation."

Answer Key



Look For

In two-step word problems, your student might stop after completing the first step, thinking that she found the answer to the problem.

Here's How to Help: After she solves the first step of the problem, ask if the value she found answers the question asked in the story problem.

New Teaching
(continued)

Math Reflection

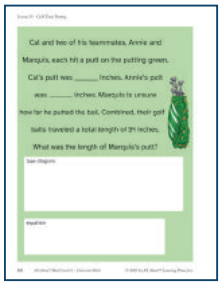
"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "How do you know if a problem is a two-step story problem?"
- "How can making a tape diagram or writing an equation help you solve a story problem?"
- "What is one thing you would like to continue practicing?"

Extended Practice (*Optional*)

If your student struggles to solve two-step story problems, or she expressed the need for more practice, continue working on this skill.


Cal and two of his teammates, Annie and Marquis, each hit a putt on the putting green. Cal's putt was _____ inches. Annie's putt was _____ inches. Marquis is unsure how far he putted the ball. Combined, their golf balls traveled a total length of 91 inches. What was the length of Marquis's putt?

Golf Team Putting

Remove page 228 from the *Dash into Math!* activity book, and then place it into the dry-erase pocket.

Mix up the *Number Cards*, and then place them face down in a stack. "Choose 2 *Number Cards*, and write the numbers in the blank spaces to complete the story problem. Then, create a tape diagram and an equation to help you solve the problem." For more practice, mix up the *Number Cards* and continue to draw 2 different cards to change the story problem.

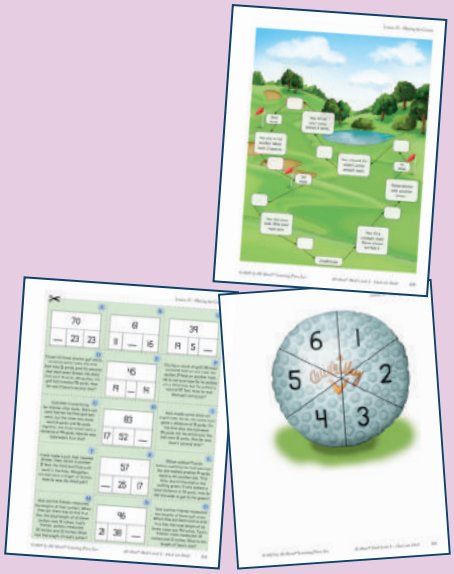
Your student will continue to practice solving story problems throughout the Level 2 program. You can proceed to the next lesson without the full mastery of this skill.

Mark the Daily Review Tracker

Write today's date next to the skill: Write equations with unknown numbers to represent a story problems. Include this in your rotation of daily review items.

Flash's Math Fun!

Playing the Course



"Let's practice our math skills!"

Materials

- Playing the Course Gameboard, *Dash into Math!* page 229
- Playing the Course Spinner, *Dash into Math!* page 231
- Playing the Course Cards, *Dash into Math!* page 233
- Counting Bears (to use as game pieces)
- Dry-erase board and marker

(see Appendix B for Spinner Instructions)

Directions

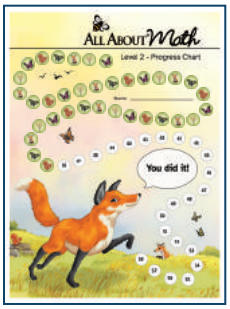
1. Cut apart the *Playing the Course* cards. Place the cards face down in a stack. Each player chooses a game piece and places it at the clubhouse.
2. The players take turns choosing a card and solving it. If a story problem card is drawn, the player must create either a tape diagram or an equation in addition to solving the problem. If a card displaying a tape diagram is drawn, the player must find the missing value and explain how the problem was solved. The players check each other's work.
3. If a player correctly solves the card, she spins the *Playing the Course* spinner and moves along the gameboard by the corresponding number of spots. If incorrect, she does not spin the spinner or move her game piece.
4. The first player to make it back to the clubhouse is the winner!

Answer key

A: 24, B: 34, C: 15, D: 40 yards, E: 12, F: 43 feet, G: 22 yards, H: 14, I: 40 yards, J: 12 feet, K: 15, L: 38 yards, M: 29 inches, N: 37, O: 35 inches

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 35 on the Progress Chart.

Lesson 44 Adding Within 1,000 Using the Standard Algorithm

Objective

Your student will learn to add within 1,000 using the standard algorithm.

You Will Need

- ☐ *Dash into Math!* pages 295 to 297
- ☐ Place Value Chart (Hundreds), *Flash's Math Tools*
- ☐ Base-10 Blocks
- ☐ dry-erase board, pocket, and marker

Before You Begin

Preview Adding Using the Standard Algorithm

In this lesson, your student will be introduced to the standard algorithm for addition. An **algorithm** differs from a strategy because it is a set of steps that works every time as long as the steps are carried out correctly. The numbers are stacked, one above the other, and the digits in each place value are added together.

Some problems will require the composition of a ten or a hundred. For example, when adding 167 + 452, there is a total of 11 tens. Your student should recognize that 11 tens have the same value as 1 hundred and 1 ten. Using the base-10 blocks, he can trade 10 rods for 1 flat to help find the sum.

When done correctly, the standard algorithm is a quick and efficient way to find the sum. As your student explores this new method, draw on his understanding of using expanded form to add three-digit numbers and model with base-10 blocks.

Review

Daily Review

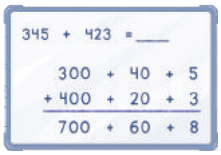
As part of your math time each day, refer to your student's *Daily Review Tracker*. Choose 1 or 2 skills, and take a few minutes to practice.

Review
(continued)

Adding Using Expanded Form

"Let's review how to add three-digit numbers by using the expanded form of each number." Write 345 + 423 = ___ on the dry-erase board.

"Show me how to represent both of these numbers in expanded form."



"Now, find the sum of the two numbers and tell me how you found it." *The sum is 768. I added the ones together to get 8, the tens together to get 60, and the hundreds together to get 700. I know 700 + 60 + 8 equals 768.*

New Teaching

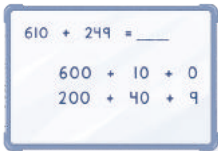
Using an Algorithm to Add

Place Value Chart (Hundreds)

Find the *Place Value Chart (Hundreds)* from *Flash's Math Tools*. Place it into the dry-erase pocket.

"We are going to pretend to be astronomers! Astronomers are scientists who study space and the stars. We can see thousands of stars at night, and some form constellations. Constellations are imaginary pictures we can see in the sky by connecting stars. Let's practice adding a number of stars together."

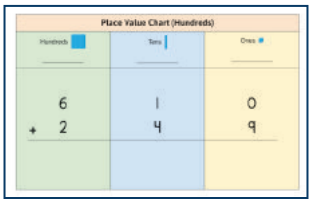
Clear the dry-erase board, and write 610 + 249 = ___. "We've learned how to use the expanded form of numbers to help us add. Write the expanded form of these numbers underneath each other on the dry-erase board."



"Let's explore another way we can add these numbers. I'll start by stacking the numbers on top of each other, adding a line along the bottom, and a plus sign on the left. This is another way to write an

New Teaching
(continued)

addition problem." On the *Place Value Chart*, show the numbers stacked with a plus sign and a horizontal line.

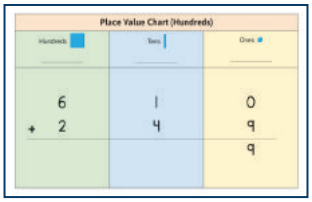


"Notice the way the numbers are written on the *Place Value Chart* equals the same as the expanded form on the dry-erase board. They both have the same amount of hundreds, tens, and ones (point to each place to highlight the amounts are the same). When solving the problem this way (point to the problem on the chart), it is important to make sure we keep the digits in each place value lined up. Then, all we need to do is add the digits in each place together."

> As you follow the scripting below, point to the numbers on the *Place Value Chart*, and then point to the same numbers on the expanded form on the dry-erase board so your student connects the value to each digit.
>
> Tip!

"Let's start in the ones place. Zero ones plus 9 ones equals how many ones?" *Nine.*

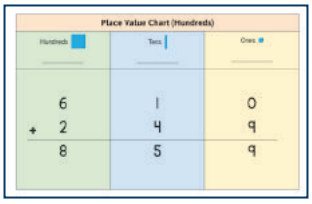
"Right! So, I will write a 9 in the ones place."



"Now, look in the tens place. We have 1 ten and 4 tens. Altogether, how many tens does that equal?" *Five.*

"Write a 5 in the tens place as part of our answer."

"Finally, let's add the hundreds. Write the total number in the hundreds place." (*Answer: 8*)



New Teaching
(continued)

"Nice work! Read the number to tell me the sum." *859.*

"Yes, 610 stars plus 249 stars equals a total of 859 stars. Write 859 in the blank on the dry-erase board to complete the equation."

"How is this way of adding similar to and different from to using expanded form?" *The numbers are still on top of each other. Expanded form is longer. This way doesn't show the zeros. Both of them stack the numbers. I got the same answer either way.*

Composing a Ten or Hundred While Using the Addition Algorithm

Clear the *Place Value Chart* and dry-erase board. Write 127 + 756 (stacked) on the dry-erase board.

"Let's practice adding some more numbers. This time, we are looking for the total of 127 stars and 756 stars. Let's solve it the same way but use our base-10 blocks this time to help explain our thinking. Build a model of the two numbers." If using the *Place Value Chart*, the base-10 blocks can be stacked or extended past the bottom of each column to create the models.

"Let's start by adding the number of ones. How many ones are there?" *Thirteen.*

"Yes! We learned in an earlier lesson that when we have 10 or more ones, we can trade 10 ones for a ten. Count out 10 units to trade for 1 rod."

New Teaching
(continued)

"To show this in my addition problem, I will place a +1 at the top of the tens column. The 1 ten plus the 3 ones (write a 3 at the bottom of the ones column) is the same as 13 ones."

"Now, add the number of tens. How many are there?" *Eight.*

"That's right! We add the 1 ten we regrouped, plus the 2 tens and the 5 tens (point to the numbers on the dry-erase board in the tens column). So, we'll write an 8 in the tens column of our answer."

"The last step is to add the number of hundreds. How many hundreds are there?" *Eight.*

"Write an 8 in the hundreds column. 127 stars plus 756 stars equals how many stars?" *883.*

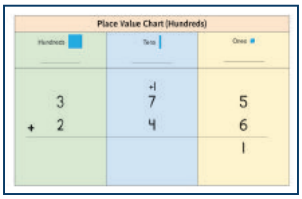
Clear the *Place Value Chart* and dry-erase board. Write 375 + 246 (stacked) on the *Place Value Chart*.

"In some addition problems, we might need to compose a hundred. Let's try adding these numbers to find the sum."

> If needed, build each number with base-10 blocks to provide a visual for each step of adding the numbers using an algorithm. This is especially important when regrouping is needed so that your student understands why he is writing a +1 above each column of numbers.

"How many ones are there?" *Eleven.*

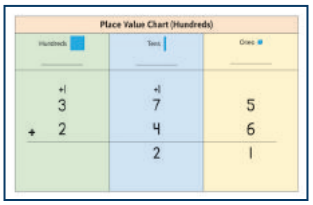
"Since 11 is the same as 1 ten and 1 one, we can place the 1 ten in the tens column (have your student write +1 in the tens column), and the 1 in the ones place in our answer."



New Teaching
(continued)

"Now, add the tens, and tell me how many." *There are 12 tens.*

"We know that 10 tens make one hundred. So, I will add a +1 to the hundreds column and write the 2 leftover tens in the tens column in the answer."



"The last step is to add the hundreds. 3 hundreds plus 2 hundreds plus the 1 hundred that we regrouped is a total of how many hundreds?" *Six.*

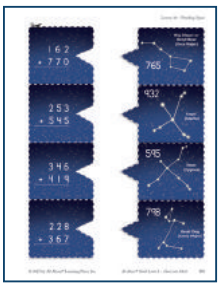
"Write a 6 in the hundreds place. So, 375 stars plus 246 stars is equal to how many stars?" *621.*

Continue to practice finding the sum. Have your student stack the numbers, using the base-10 blocks as a support if needed.

- 381 + 417 = ___ (*Answer: 798*)
- 167 + 225 = ___ (*Answer: 392*)
- 549 + 372 = ___ (*Answer: 921*)

Complete Activity Sheet

"Let's practice finding the sum!"



Puzzling Space

Remove page 295 from the *Dash into Math!* activity book. Cut apart the 8 puzzle pieces and spread them out, face up.

"Let's explore some constellations in the night sky! Solve each problem shown on the telescope puzzle pieces. Connect each puzzle piece with its answer shown on a constellation card."

Answer Key

162 + 770 = 932, 253 + 545 = 798, 346 + 419 = 765, 228 + 367 = 595

Look For
In problems requiring your student to compose a ten or hundred, he may forget to regroup, or your student may also add numbers together that are in different places.

Here's How to Help: Use base-10 blocks to model regrouping. Also, write the numbers on the *Place Value Chart* or draw vertical lines to separate the places of each digit.

Math Reflection

"Let's Reflect!"

Ask some questions to guide your student's reflection:

- "How can you show that you are composing a 10 or 100 when solving addition problems?"
- "How does this way compare to other ways of finding the sum?"

Extended Practice (*Optional*)

If your student struggles to find the sum, or if he expresses the need for more practice, continue working on this skill.

Look to the Sky

Turn to page 297 in the *Dash into Math!* activity book.

"Work to find the sum of each problem shown in the night sky. Use a strategy that makes the most sense to you."

Your student will explore using the algorithm to subtract three-digit numbers in future lessons. You can proceed to the next lesson without the full mastery of the skill.

Answer Key

237 + 285= 522, 464 + 388 = 852, 761 + 174 = 935, 506 + 184 = 690, 653 + 319 = 972

Flash's Math Fun!

Summing Up Constellations

"Let's practice our math skills!"

Materials

- Summing Up Constellations Gameboard, *Dash into Math!* page 299
- Summing Up Constellations Cards, *Dash into Math!* page 301
- 2 Counting Bears (to use a game pieces)

Directions

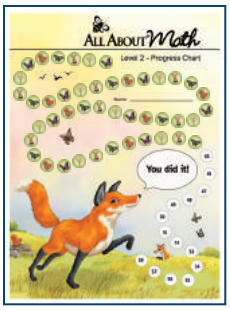
1. Cut apart the *Summing Up Constellations* cards, and place them in a stack face down. Each player will place his counting bear on the telescope labeled "Start."
2. The players will take turns choosing a card and solving the problem. The players will check each other's work.
3. If the player is correct, he will move to the first star on the *Summing Up Constellations* gameboard. If the player is incorrect, he will not move.
4. The first player to make it to the last star in the constellation is the winner.

Answer Key

A: 335, B: 920, C: 941, D: 715, E: 757, F: 756, G: 946, H: 777, I: 864, J: 764, K: 704, L: 910, M: 738, N: 815, O: 933, P: 567, Q: 848, R: 844, S: 811, T: 825

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 44 on the Progress Chart.

Lesson 50 Let's Get Rounding

Objective

Your student will learn to round whole numbers within 1,000 to the nearest ten or hundred.

You Will Need

- ☐ *Dash into Math!* pages 333 to 335
- ☐ dry-erase board, pocket, and marker
- ☐ Tens Rounding Mat and Hundreds Rounding Mat, *Flash's Math Tools* page 22

Math Vocabulary

round

Before You Begin

Preview Rounding

In this lesson, your student will be introduced to the skill of rounding. He will work with numbers from 1 to 1,000 and learn to round to both the nearest ten and the nearest hundred. For some numbers, he will see that the result is the same. For example, 98 rounded to the nearest ten and to the nearest hundred is 100.

To make sense of rounding, your student will rely on the previously learned concepts of place value and value. Rounding is a skill that has many real-world applications. For additional practice, try incorporating it into everyday activities like shopping or travel times.

Review

Daily Review

As part of your math time each day, refer to your student's *Daily Review Tracker*. Choose 1 or 2 skills, and take a few minutes to practice.

Place and Value of Digits

"Write the number 356 on the dry-erase board. What is the value of the 6 in this number?" *Six.*

"What is the place value of the 5 in this number?" *The 5 is in the tens place.*

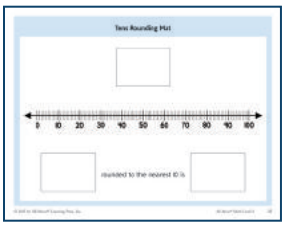
Review
(continued)

"Nice job! Since this number has 5 tens, what is the value of the 5?" *Fifty.*

"Yes. What can you tell me about the 3 in this number?" *The 3 is in the hundreds place. It has a value of 300.*

New Teaching

Rounding to the Nearest 10



Tens Rounding Mat

Find the *Tens Rounding Mat* in *Flash's Math Tools* on page 22. Place it into the dry-erase pocket.

"Let's imagine that we are going on a field trip! We are going to visit Olde Town to explore some supplies that people used in the past and how they made them! While we're there, we'll explore a new skill called rounding. When we **round** a number, we find a number that it is close to. This will give us a good estimate of the number's value. A rounded number is usually easier to work with, because it ends in a 0."

"Rounding is a skill that many people use throughout the day! When we go shopping, I round the prices of the items I buy so that I get a good idea of how much money I'll be spending. The managers at Olde Town might use rounding to find out how many materials they will need for the visitors."

"Let's start by rounding to the nearest ten. We can use a number line to help us with this work." Present the *Tens Rounding Mat* to your student.

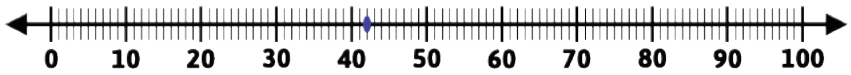
"What do you notice about the numbers on this number line?" *They count up by tens. They each end in a 0. The number 0 is the smallest, and the number 100 is the biggest. There are 9 tick marks between each pair of numbers.*

"Those are great observations! Each number on the number line represents a multiple of ten. The tick marks between the numbers each represent a one. The number line will help us decide which ten a number is closest to."

"At Olde Town, 42 visitors are in line. I can round the number 42 to get an approximate value, or to tell about how many people there are." Write 42 in the box above the number line.

New Teaching
(continued)

"To figure out what 42 rounded to the nearest ten is, let's first place a point on the number line to represent 42. Add a point to the number line."



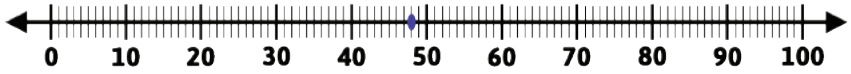
"I notice that the point is between two tens: 40 (point to the number 40 on the number line) and 50 (point to the number 50 on the number line). When rounding to the nearest ten, I want to find which ten the number is closest to. I see that my point for the number 42 is closer to 40 than it is to 50. I know this makes sense because 42 is only 2 away from 40, but it is 8 away from 50." Write "42" and "40" in the boxes below the number line.

"So, 42 rounded to the nearest ten is 40. There are about 40 visitors in line."

> Your student might recognize that 42 is closer to 40 without the use of the number line. If so, have him explain how he knows.
>
> 
>

Erase the dry-erase pocket. Write 48 in the box above the number line.

"At Olde Town, a blacksmith is making horseshoes. So far, the blacksmith has made 48 horseshoes. Let's round 48 to the nearest ten. Place a point on the number line to represent 48."



"Which 2 tens on the number line is the point between?" *It is between 40 and 50.*

"That's right! Which ten is it closest to?" *Fifty.*

"The blacksmith made about 50 horseshoes. Fill in the boxes to create the sentence, '48 rounded to the nearest 10 is 50.'"

Erase the dry-erase pocket. Write 25 in the box above the number line.

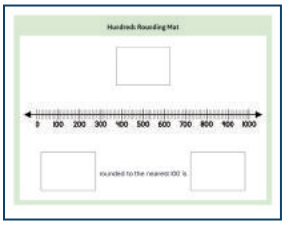
"We also see a candlemaker at Olde Town. The candlemaker has 25 candles. Let's try rounding 25 to the nearest ten. Place a point on our number line to show 25."

New Teaching
(continued)

"Notice that 25 is exactly in the middle. When we round a number that is exactly in the middle of 2 tens, we round up, or say that it is closer to the larger ten. So, 25 rounded to the nearest 10 is 30. Fill in the boxes to create the sentence, '25 rounded to the nearest 10 is 30.'"

"There are about 30 candles! When rounding any number that has 5 ones, we round up. For example, 15 is exactly in the middle of 10 and 20, so when rounding to the nearest ten, 15 gets rounded to 20."

Rounding to the Nearest 100



Hundreds Rounding Mat

Flip the *Tens Rounding Mat* over to find the *Hundreds Rounding Mat* on the other side.

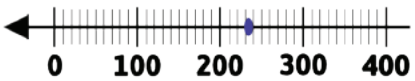
"What do you notice about this number line that differs from the one we used earlier?" *This number line counts by hundreds. It starts at 0 and ends at 1,000.*

"That's right. When we round to the nearest hundred, we decide how many hundreds a number is closest to. What do the tick marks between the numbers represent?" *Each tick mark represents a ten.*

Write 234 in the box above the number line. "Olde Town is open to visitors 234 days each year. Let's round this to the nearest hundred. What is the value of the digit in the hundreds place?" *Two hundred.*

"We know that the number 234 is made up of 2 hundreds and 34 ones. This makes our number larger than 200, but less than 300." Place your hands on the mat to cover the rest of the number line so that your student can focus on numbers from 200 through 300.

"Place a point on the number line to represent 234."



> If your student is unsure, point out that this number line does not show ones. We can place a point between the third and fourth tick marks after 200, because we know that 234 is between 230 and 240.
>
> Tip!

"Which 2 hundreds on the number line is the point between?" *It is between 200 and 300.*

New Teaching
(continued)

"We can see that it is closer to 200, so the number 234 rounds to 200. Olde Town is open for about 200 days during the year. Fill in the boxes to create the sentence, '234 rounded to the nearest 100 is 200.'"

Erase the dry-erase pocket. Write 755 in the box above the number line.

"Last month, Olde Town had a total of 755 visitors. Let's round the number 755 to the nearest hundred. What is the value of the digit in the hundreds place in this number?" *Seven hundred.*

"Nice work! Place a point on the number line to represent 755." Have your student place a point on the number line that is slightly past the tick mark representing 750.

> If needed, model for your student by counting the tick marks between 700 and 800 as 710, 720, 730, and so on. Or, have him think about breaking down the number 755 into 700 + 50 + 5.
>
> 
>

"Since 750 is exactly in the middle of 700 and 800, 755 is just a little more than halfway between 700 and 800. Will we round 755 to 700 or to 800?" *We will round 755 to 800.*

"Olde Town had about 800 visitors last month. During our work today, we created the rounded numbers 40, 50, 30, 200, and 800. What do you notice about the number of ones in each rounded number?" *Each has 0 ones.*

"We have learned to round numbers to the nearest ten and to the nearest hundred. Let's take a look at the number 97 and round it to both place values. Place a point on each number line to show the number 97."

> The number line is a tool to help your student round. If your student prefers not to use it, have him explain how he rounded the number to both place values.
>
> 

"When rounding to the nearest 10, what number does 97 round to?" *To 100.*

"When rounding to the nearest 100, what number does 97 round to?" *To 100.*

"What do you notice about those two answers?" *They're the same. They both rounded to 100.*

New Teaching
(continued)

Complete Activity Sheet

"Let's practice rounding!"

Rounding Match

Remove page 333 from the *Dash into Math!* activity book.

"Let's match the workers with the products they make as we practice rounding. Cut apart the *Rounding Match* cards." Spread out the cards with workers to one side of your workspace and the cards with numbers to the other side. Have your student match each worker card to its rounded value and then flip the number over to reveal the product created. Have your student round two-digit numbers to the nearest ten and three-digit numbers to the nearest hundred.

Answer Key

278 = 300, 85 = 90, 24 = 20, 57 = 60, 822 = 800, 541 = 500

Look For
Your student might round to the incorrect place value.

Here's How to Help: Encourage your student to use the *Rounding Mats*. Cover parts of the number line so he can focus on the 2 rounded numbers that the given number falls between. Have him count the number of marks both backward and forward to find which value is closer.

Math Reflection

"Let's Reflect!"

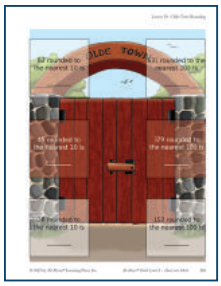
Ask some questions to guide your student's reflection:

- "How do you decide which number to round to when rounding to the nearest ten?"
- "If a number is exactly in the middle of 2 hundreds, how do you round it?"

Extended Practice (*Optional*)

If your student is struggling to round, or he expressed the need for more practice, continue working on this skill.

New Teaching
(continued)



Olde Town Rounding

Turn to page 335 in the *Dash into Math!* activity book.

"Solve each problem to unlock the gate at Olde Town. Use the *Rounding Mats* to help you if needed."

Your student will continue to practice rounding in the next lesson. You can proceed to the next lesson without the full mastery of this skill.

Answer Key

82 rounded to the nearest 10 is 80, 45 - 50, 38 - 40, 631 - 600, 379 - 400, 152 - 200

Mark the Daily Review Tracker

Write today's date next to the skill: Round numbers to the nearest ten or hundred. Include this in your rotation of daily review items.

Flash's Math Fun!

Field Trip to Olde Town

"Let's practice our math skills!"

Materials

- Field Trip to Olde Town Gameboard, *Dash into Math!* page 337
- Field Trip to Olde Town Cards, *Dash into Math!* page 339

Directions

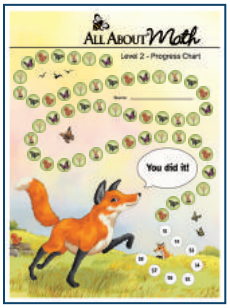
1. Cut apart the *Field Trip to Olde Town* cards. Each card has an image on back that matches one of the six activities on the *Field Trip to Olde Town* gameboard. Sort the cards by the different activities, and then place the cards in a stack face down beside the activity on the gameboard.
2. The players take turns visiting each activity in the town. When arriving at an activity, the player takes a card to solve. If correct, he keeps the card. If incorrect, he places the card at the bottom of the stack.
3. After each player visits all six activities on the field trip, the game is over.

Answer Key

A: 30, B: 700, C: 300, E: 70, F: 400, G: 70, H: 100, I: 500, J: 30, L: 300, M: 60, N: 1,000, O: 800, Q: 100, R: 500

Track Your Progress

Mark the Progress Chart



Have your student mark Lesson 50 on the Progress Chart.

APPENDIX A
Scope and Sequence of Level 2

Your Student Will:	Lesson
Review skills and concepts involving number fluency, addition, and subtraction.	1
Learn to represent and solve Add To and Take From story problems where the result is unknown.	2
Learn to write an addition or subtraction equation to represent each story problem and to orally explain how the equation represents the story problem.	3
Learn to solve story problems, write an addition or subtraction equation to represent each one, and orally explain how the equation represents the story problem.	4
Learn to solve and represent Put Together/Take Apart, Addend Unknown story problems.	5
Learn to solve Compare, Difference Unknown story problems and match addition and subtraction equations to the problems.	6
Learn to solve a variety of story problems and to write equations that match each problem.	7
Build fluency towards solving problems with unknowns in all positions.	8
Build fluency towards adding within 20 without composing a ten.	9
Learn to subtract within 20 without composing or decomposing a ten.	10
Learn to solve story problems with three addends, two of which make a ten.	11
Learn to apply the commutative and associative properties to make a ten when adding three numbers within 20.	12
Learn to analyze addition methods for adding within 20.	13
Learn to solve story problems with three addends by creating a ten.	14
Learn to analyze and use the counting on and taking away methods to subtract within 20.	15

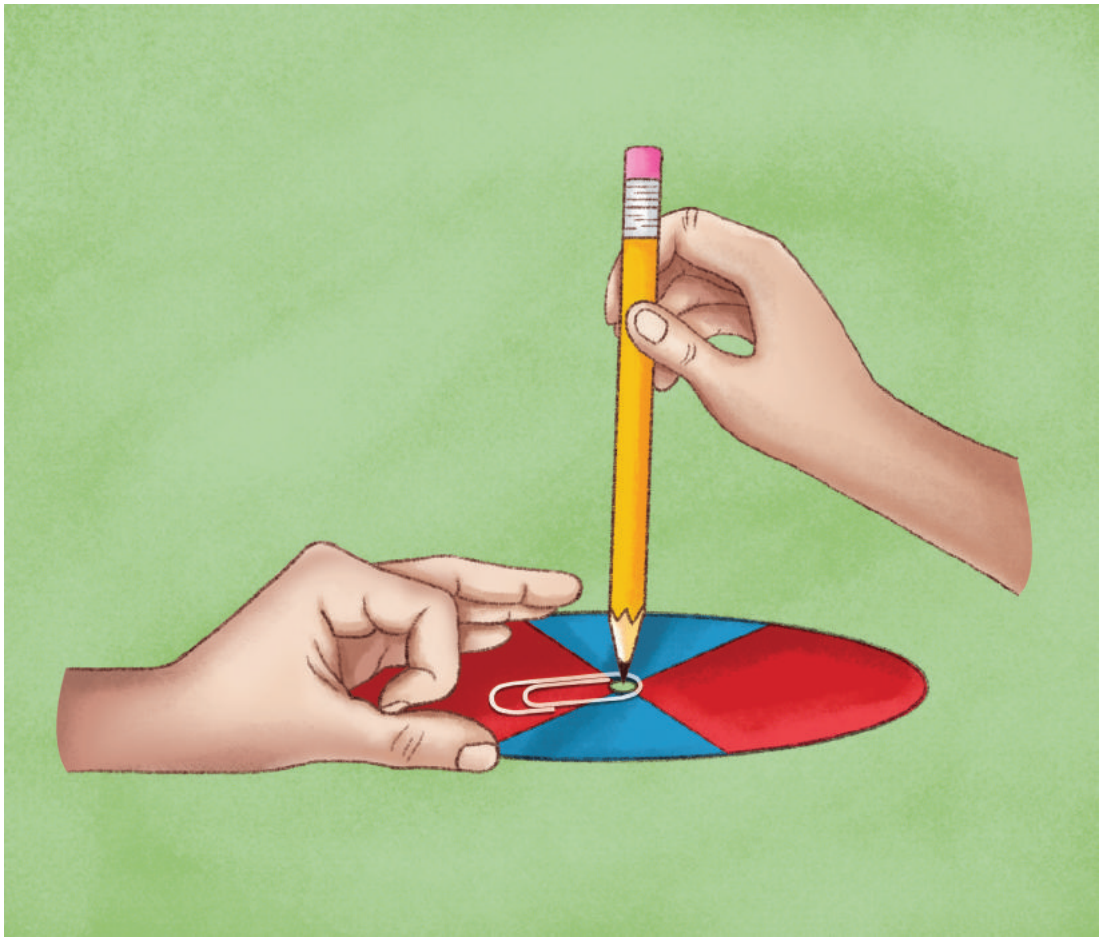
Your Student Will:	Lesson
Build fluency with adding and subtracting within 20.	16
Learn to add 2 two-digit numbers within 100, including composing a ten.	17
Learn to add 2 two-digit numbers by using methods based on place value.	18
Review all concepts learned in Lessons 2–18.	19
Learn to read, write, and represent multiples of 100.	20
Learn to read three-digit numbers within 1,000.	21
Learn to find the value of three-digit numbers using place value understanding.	22
Learn to write and compose three-digit numbers.	23
Learn to represent three-digit numbers using expanded form.	24
Learn to compare three-digit numbers using place value.	25
Learn to subtract within 100 by using strategies based on both place value and decomposing a ten.	26
Learn to use place value to find numbers and represent equations on a number line.	27
Learn to use an open number line to solve equations that involve composing or decomposing.	28
Learn to add and subtract multiples of 10 or 100 to or from a three-digit number.	29
Review all concepts learned in Lessons 20–29.	30
Learn to measure length in centimeters.	31
Learn to estimate and measure lengths in centimeters using a ruler.	32
Learn to compare measurements in feet and inches and to describe the relationship between different units of measurement.	33
Learn to solve one-step story problems about length within 100.	34
Learn to write equations to represent and solve two-step story problems about length using calculations within 100.	35

Your Student Will:	Lesson
Learn to tell time with an analog clock by using the words half past, quarter past, and quarter 'til.	36
Learn to tell time and to write time to the nearest 5 minutes on an analog clock.	37
Learn to read and write time with analog clocks, using a.m. and p.m.	38
Learn to identify pennies, nickels, dimes, and quarters and find the total value of a set of coins.	39
Learn to find the value of a collection of coins within 100 cents and to recognize that a dollar has the same value as 100 cents.	40
Learn to use addition and subtraction to solve story problems involving money.	41
Review all concepts learned in Lessons 31–41.	42
Learn to add and subtract three-digit numbers using expanded form.	43
Learn to add within 1,000 using the standard algorithm.	44
Learn to subtract within 1,000 with decomposing tens and ones using base-10 blocks and expanded form.	45
Learn to subtract within 1,000 using the standard algorithm.	46
Learn to read and write six-digit numbers.	47
Learn to identify the value of each digit in a six-digit number.	48
Learn to represent numbers using base-ten blocks and disks, expanded form, and numerals.	49
Learn to round whole numbers within 1,000 to the nearest ten or hundred.	50
Learn to use an understanding of rounding to consider all the numbers that round to a given number.	51
Learn to compare numbers based on the values of the thousands, hundreds, tens, and ones digits.	52
Learn to order numbers based on the value of the thousands, hundreds, tens, and ones digits.	53

Your Student Will:	Lesson
Review all concepts learned in Lessons 43–53.	54
Be introduced to the concept of fractions and related vocabulary.	55
Learn to partition shapes into equal parts and to express each equally sized part as a unit fraction.	56
Learn to read and write fractions by understanding how they represent parts of a whole.	57
Review all concepts learned in Lessons 2–53.	58

APPENDIX B
Spinner Instructions

Place a paperclip on the center of the black dot. Place the tip of a pencil on the dot inside the paperclip. Hold the pencil upright with one hand, and then flick the paperclip with the other hand to spin and determine the action. For younger students, the parent may need to hold the pencil upright while the child flicks the paperclip to spin.



APPENDIX C
Guidelines for Using Manipulatives and Drawings

Manipulatives and drawings are essential tools for building a strong foundational understanding of math concepts, such as addition, subtraction, multiplication, and division. These tools help children develop abstract thinking skills and concretely understand what operations mean (e.g., counting objects to understand addition). It is important to allow students to use manipulatives and drawings as long as they find them helpful or beneficial.

- **Children learn best by engaging with learning through multiple senses,** using sight, sound, and touch. Kinesthetic learning, meaning learning by touch, allows students to physically interact with the materials. Manipulatives provide a tangible way for learners to interact with mathematical concepts, allowing them to internalize ideas through hands-on exploration. Visual learning is engaged through drawings and diagrams, providing an essential understanding of relationships between numbers, geometric shapes, and patterns. Being able to draw helps learners to organize information more effectively.
- **Manipulatives and drawings are powerful tools for reinforcing concepts over time.** By continuing to use them, children can deepen their understanding and retain knowledge better than if they were forced to rely solely on abstract methods.
- **When children continue to use physical tools to explore math, they develop a deeper,** more lasting understanding of why math works the way it does—instead of just memorizing procedures. This understanding is crucial for applying math in real-world situations.
- **Manipulatives and drawings can help make the learning process more enjoyable,** engaging, and hands-on. By encouraging students to use these tools as long as they find them helpful, educators can keep math fun and interesting, which is crucial for fostering a positive attitude toward the subject.
- **Manipulatives and drawings provide scaffolding for students who need more support.** They allow students to progress at their own pace, providing them with a way to fully engage with the material. The goal is to ensure children are equipped with the support they need at every level of their learning, and not to limit or rush their use of these tools.

As students become more confident in their ability to perform basic calculations, they can begin to rely less on manipulatives and drawings and start to use more mental math and number-based strategies. However, the exact timing for this transition can vary depending on the child's age and developmental stage, the complexity of the mathematical ideas involved, and the student's level of comfort. In general, students should stop using manipulatives and drawings for basic operations when they have developed fluency and can understand the underlying concepts abstractly. This typically occurs around late elementary or early middle school, but the exact timing can vary. (And for more advanced mathematics, research has shown that manipulatives improve learning for teens and even adults in subjects such as algebra and calculus.) The goal is for them to develop the ability

to think and reason abstractly, while still recognizing that manipulatives and drawings can be useful in more complex or unfamiliar contexts. It is important that the students make the decision about when to stop using manipulatives and drawings based on their individual level of comfort with the mathematical concepts involved.

If students do not want to use manipulatives or drawings when the lesson instruction directs them to use these methods, have them demonstrate their understanding of the method by solving 2–3 examples. Then, allow students to solve the remaining examples using the method of their choice. Students will use many of the same methods in later levels to represent increasingly difficult concepts, so it is important that students understand and can apply different manipulatives and drawings to solve problems. However, this must be balanced with preventing students from becoming frustrated by having to use manipulatives and drawings when they can fluently solve problems using mental math and other strategies.