Building Skills with Brick Math

A 9-Day Program to Sharpen Basic Math Skills

Subtraction

Program Overview

During this **Building Skills with Brick Math** program, students dive deeply into addition. They use a variety of learning techniques including manipulatives, drawing, verbal explanation, physical movement, and song. Students work with a partner, use the vocabulary fluently in math conversations, and assess themselves on their abilities.

The program is written in the following daily format:
1. Introduction to the topic
2. Teacher and students work together on the new concepts
3. Student practice
4. Movement related to concepts
5. Student independent practice
6. Content assessment
7. Story problems
8. Self-assessment on content and partnering

The Brick Math program is successful because students transfer knowledge from using manipulatives to drawing and verbal explanations.

Take the time your students need to learn each concept. Some classes will find one concept easily learned and a second concept much harder, requiring a slower pace. If all the daily activities are not completed during a session, you can choose to move the remaining activities to the following day or truncate an activity if you feel the students have fully learned the math concepts.

First and Second Grade – Math is FUN, summer program Subtraction 9 - day summer program 1.5 - 2 hours a day	
Program Overview	
Day 1	**Welcome** **What Does it Mean to Subtract?** • Define subtraction • Discover what it means to subtract two numbers • Practice how to subtract within 20 • Practice how to write mathematical equations for subtraction models **Vocabulary** • Subtract • Minuend • Subtrahend • Minus
Day 2	**Ten-Frames Subtraction Within 20** • Subtract within 20 **Vocabulary** • Ten-frame • Subtract • Minuend • Subtrahend • Difference • Minus

Day 3	**Missing Term Subtraction** • Subtract numbers within 20 • Find the missing term in a subtraction problem **Vocabulary** • Subtract • Minuend • Subtrahend • Minus • Decompose • Difference
Day 4	**Decomposing Numbers/Place Value** • Subtract using decomposing **Vocabulary** • Decompose • Minuend • Subtrahend • Difference
Day 5	**Result Unknown Problems within 20** • Represent and solve subtraction problems that are missing the difference • Write mathematical equations for models **Vocabulary** • Result unknown • Take away • Minuend • Subtrahend • Minus • Difference • Subtract

Day 6	**Change Unknown Problems Within 20**
	• Solve subtraction problems where the number in the change location is unknown
	• Write mathematical equations for models
	Vocabulary
	• Change unknown
	• Subtract
	• Minuend
	• Subtrahend
	• Minus
	• Difference
	• Take away
Day 7	**Start Unknown Problems Within 20**
	• Solve subtraction problems where the starting number in the problem is unknown
	• Write mathematical equations for models
	Vocabulary
	• Start unknown
	• Subtract
	• Minuend
	• Subtrahend
	• Minus
	• Difference
	• Take away
Day 8	**Review of Subtraction**
	• Review of Subtraction
	• Story problems
	Vocabulary
	• Start unknown
	• Subtract
	• Minuend
	• Subtrahend
	• Minus
	• Difference
	Take away

Day 9	**Addition and Subtraction**
	• How subtraction and addition can be used for the same problem
	• Story problems
	• Assessment
	• Optional Parent Activity & Materials Check In

Common Core Math Standards Addressed

CCSS.MATH.CONTENT.1.OA.A.1

Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.[1]

CCSS.MATH.CONTENT.1.OA.B.3

Apply properties of operations as strategies to add and subtract.[2] *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*

CCSS.MATH.CONTENT.1.OA.B.4

Understand subtraction as an unknown-addend problem. *For example, subtract 10 - 8 by finding the number that makes 10 when added to 8.*

CCSS.MATH.CONTENT.1.OA.C.5

Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

CCSS.MATH.CONTENT.1.OA.C.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 - 4 = 13 - 3 - 1 = 10 - 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 - 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

CCSS.MATH.CONTENT.1.OA.D.7

Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 - 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

CCSS.MATH.CONTENT.1.OA.D.8

Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = _ - 3, 6 + 6 = _.*

Materials Needed

- Brick Math brick sets (one per student or one per pair of students)
- Brick Math Subtraction Teacher Edition
- Brick Math Subtraction Student Edition (one per student)
- Chart paper
- Markers (one set per pair of students)
- Crayons (one set per pair of students)

- Sticky notes
- Cardstock
- Yarn
- Paper plate (or large circles cut from tagboard or cardstock)
- Optional: Foam sheets or shelf liner cut into rectangles approximately 12" x 18" (one sheet per student)

Before the students' arrival for the first day:
1. Read the Introduction and How to Teach with Brick Math on pages 5-9 in the Brick Math Subtraction Teacher Edition.
2. Label all the student Brick Math brick sets. Suggest a system such as Set 1, Set 2, or Zebra, Elephant, Tiger, etc.
3. Each student or each set of 2 students will need a set. Assign each student or team of two students one set. They will use this same set every day. This materials management step allows the student or the team to be completely responsible for their pieces.
4. Each student should have one Brick Math Subtraction Student Edition. If you are not using the booklets, then you will need to have copies of specific pages so students can correctly show and explain their work and make the knowledge transfer from manipulatives to paper and verbal explanations.
5. Students will need the following supplies:
   Brick Math Subtraction Student Edition (one per student)
   Crayons (one set per pair of students)
   Markers (one set per pair of students)
   Sticky notes
   Cardstock
   Yarn
   Paper plate (or large circles cut from tagboard or cardstock)
6. Optional: Foam sheets or shelf liner cut into rectangles. (one sheet per student) This helps keep the bricks from sliding off desks and tables.

> **Note:** The are blank baseplate paper templates on pages 77-79 in the Brick Math Subtraction Teacher Edition. You may have students use these at any time during the course or for a teacher-created problem or assessment. They may be helpful for the daily (optional) story problem activities. Make additional copies of blank baseplates as needed.

Day 1 – What Does it Mean to Subtract?

Before the students arrive, please read pages 11-12 (top) to prepare for the day.

Welcome

Tell the students something similar to the following:

> Welcome to Math is Fun. We are going to do a lot of interesting activities this week. We are going to build with LEGO® Bricks, work with a partner, create a team name, exercise with numbers, and more. Are you ready to get started?
>
> First, I want to show you the set. What colors do you see? Each color has a name. Each of you has a name. We need to learn all the names of the people in our class. I would like you to sit in a large circle. Each person will say his or her name. Then, please choose one piece for the set. Tell us which color piece you chose and something about the piece.
>
> I will start.
> My name is Mrs. Smith. I chose a purple piece because purple is my favorite color.

Go around the room. After one person has said his or her name and chosen a brick, have students repeat the name. Start with yourself and then have the class repeat so everyone hears and says the names repeatedly. For example, Mrs. Smith, Paula, Alan, and Rebecca. Then, if the next child is Ben, you would repeat Mrs. Smith, Paula, Alan, Rebecca, and Ben. When all the students have told their names, now have the students who chose a particular color stand with their bricks in their hands.

Tell the students something like:

> Everyone who chose a purple brick, please stand. Let's see if we can remember their names. Say the names of the children who are standing. Then, have them sit down. Continue with different colors until all the children have stood and been called by name.

Then, look at the particular shapes of the bricks chosen. Explain to the students how the shapes also have names.

Explain to students how to name the bricks. Start with your brick. Perhaps you chose a 2x2 brick. Show students your brick. If you want you can pass it around.
Tell the students:

> It is called 2x2 because it is a square with 2 studs or bumps on one side (width) and 2 studs or bumps on another side (length).

Then, show students a small 1x1 brick.

Ask the students:

> Can you guess what this brick is called? It has 1 stud in width and 1 stud in length – but it has a total of only 1 stud.

Then, show students a 1x6 brick. Continue to go through the bricks until students can do a good job of naming the bricks.

Ask the students to go around the circle and tell the name of the brick they chose. If a student is not sure or names it incorrectly, ask the student to count the width and length in studs, then help with the correct name.

When all the bricks have been named, ask the students to put the bricks into the proper location in the set. Their pieces should match the compartment or area in the container so all the brick "family" will be together.

Move with Subtraction

Have students sit in a circle. Choose 3 students to go into the center of the circle. Ask how many students are in the center of the circle. Students should answer three. Ask them how they know it is three. Perhaps they counted one-two-three. Say to students that if one student is taken away or subtracted from the group (have one student return to seat at circle) then how many students remain? Two

Now have the first two students stand near each other in the center of the circle. Ask one student to leave and return to his/her seat in the circle. Ask how many students were taken away. One. Ask how many students are left. One. Ask students if they can make subtraction problems using the three students in the center of the circle to begin.

Students should come up with 3-1, 2-1, 1-1, 3-2, 2-2, 3-3…Keep asking students another way until they can get them all or you have to lead them directly. You may need to have the three students begin in the center (again) to help the class.

Have all students return to their places around the circle.

Ask students if they are ready to work with a partner and do some fun building and subtraction. Yes!

Working with a Partner

Ask students their favorite thing about working with a partner. Then, ask them what is the best way to work with a partner. Help students create answers like the following:

- Partners share the work; however, neither person does the other one's work.
- Partners learn together and can help each other learn.
- Partners communicate (talk) kindly with each other.
- Partners care about each other.

- Partners do not give each other the answers but help the other person understand how to get an answer.

Create a set of Partner Rules and put them on chart paper and display them in the classroom. That way you can refer to them as needed.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

What Does it Mean to Subtract?

Ask students what they think it means to subtract. Have students look around the room and see things that they could subtract from a whole or a sum.

Part 1: Show Them How

Follow the instructions on page 12 in the Brick Math Subtraction Teacher Edition.
Complete #1.
Students will complete page 5 Part 1, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 12 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students will complete page 6, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 13 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students will complete page 6, #3 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 13 in the Brick Math Subtraction Teacher Edition.
Complete #4.
Students will complete page 7, #4 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 13 in the Brick Math Subtraction Teacher Edition.
Complete #5.
Students will complete page 7, #5 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 13 in the Brick Math Subtraction Teacher Edition.
Complete #6.
Students will complete page 7, #6 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 13 in the Brick Math Subtraction Teacher Edition.
Complete #7.
Students will complete page 8, #7 in the Brick Math Subtraction Student Edition.

Move with Music

Have students stand and move from their places at the tables/desks because it is time for some movement and song.
You can use any addition song to have the students count and move around. You could sing and act out 10 little monkeys jumping on the bed, to subtract by one. Then, sing again and the kids have to watch you when it comes time to jump off – because you can take off 1,2, or 3 students and get a new number.

If you prefer, you can use the internet to find a song/video you prefer for subtraction. The idea is for students to be able to move and sing and have a chance to get their brains ready to work again after a short brain break.

Part 2: Show What You Know

Follow the instructions on page 14 in the Brick Math Subtraction Teacher Edition.
Complete #1.
Students will complete page 8, Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 14 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students will complete page 9, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 15 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students will complete page 9, #3 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 15 in the Brick Math Subtraction Teacher Edition.
Complete #4.
Students will complete page 9, #4 in the Brick Math Subtraction Student Edition.

Challenge

Follow the instructions on page 15 in the Brick Math Subtraction Teacher Edition.
Complete the Challenge.
Students will complete pages 10-11, Challenge, in the Brick Math Subtraction Student Edition.

Content Assessment

Students complete Assessment #1 on page 12 in the Brick Math Subtraction Student Edition.
Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 12 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #3 on page 12 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #4 on page 12 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #5 on page 13 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Inventory Check

Inventory check: Have students remove all the 1x2 bricks from the box and count them. They should have 30 – 1x2 bricks. After the students have verified the bricks, they replace the 1x2 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have students place the bricks into the correct compartments of the Brick Math bin.
Have both partners check the bin(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems

Tell students a story problem like the following:

> Juan had five red balloons for the birthday party. Juan gave his friend
> Tavon 2 of the balloons. Make a model to represent Juan's five balloons
> and a model for Tavon's two balloons. How many balloons does Juan still
> have after he gives Tavon two balloons?

Help students to complete the story problem and create models to show the balloons.
Have each pair work together to create a new story problem that uses simple subtraction.

As time allows, have students share their stories and baseplates with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 13 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 13.
Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my
> partner as I should have. Draw an orange brick after the word Partner.

> I was a good partner today. I helped my partner but sometimes I did their
> work for them or I let them do my work.
> Draw a green brick after the word Partner.

I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "simple subtraction" in the blank space at the bottom of page 13. Students should draw a specific color brick after the words "simple subtraction" based on the following:

I need help creating models to show simple subtraction. If this describes you today, draw an orange brick after the words "simple subtraction."

I can create models to show simple subtraction. If this describes you today, draw a green brick after the words "simple subtraction."

I can help others create models to show simple subtraction. If this describes you today, draw a blue brick after the words "simple subtraction."

Day 2 – Ten-Frames Subtraction Within 20

Before the students arrive, please read pages 16-18 (top) to prepare for the day.

Welcome Back

Welcome students back to Brick Math summer camp. Start in the circle.

Ask students if they can remember who their partner is. Ask students if they can remember how to make models to show simple subtraction. Have students give a verbal example.

Tell students that today we are going to create a team name and a subtraction problem.
Have students find their partners and get crayons and each person needs a paper plate.

Show students an example of a team name and a subtraction problem. For example,

<div align="center">

All Stars

10 - 2 = 8

</div>

Students work together to determine a team name and then write the name in the middle of the paper plates. Students should determine a subtraction problem and write the problem under the team name.

Students color the edge of the paper plate with the numbers in the Subtraction problem. In our example, they could create four ten stars on the left side of the plate and two stars in the middle of the plate. Finally, they could create eight starts on the right side of the plate.

Have students move to their desks or tables with their partners.

Working with a Partner

Remind students of the partner rules created on Day 1. Have each student tell his or her partner one of the good things the partner did yesterday.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Ten-Frame Subtraction Within 20

If students have never used ten-frames, use the review on pages 17-18 before starting the next section.

Tell students today they are going to work with ten-frames.
Show students a model of a ten-frame – 2x5 – there are no bricks that are 2x5, so it must be made from a combination of bricks.

Ask students how many studs are in a ten-frame. Ten.
Show students two ten-frames. Ask students how many studs are in each ten-frame. Ten.
Ask students what would be the largest number they could make with two ten frames. Twenty.

Ask students if they are ready to get the materials and work with ten-frames. Yes!

Part 1: Show Them How

Follow the instructions on page 18 in the Brick Math Subtraction Teacher Edition.
Complete #1.
Students complete page 20 Part 1, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 18 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete page 20 Part 1, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 19 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 21, #3 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 19 in the Brick Math Subtraction Teacher Edition.
Complete #4.
Students complete page 21, #4 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 19 in the Brick Math Subtraction Teacher Edition.
Complete #5.
Students complete page 22, #5 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 19 in the Brick Math Subtraction Teacher Edition.
Complete #6.
Students complete page 22, #6 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 19 in the Brick Math Subtraction Teacher Edition.
Complete #7.
Students complete page 23, #7 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 20 in the Brick Math Subtraction Teacher Edition.
Complete #8.
Students complete page 23, #8 in the Brick Math Subtraction Student Edition.

Students complete page 23, #9 in the Brick Math Subtraction Student Edition.

Move with Math

Place 10 circles on the floor in a 2x5 pattern, wide enough that a student can stand on a circle without touching another student.

Create a second set of 10 circles to create a second ten-frame.

Show students the two sets of circles and ask them if they recognize the patterns. They should see three two frames.

Tell students they will be working to create the math sentence 6 – 4 = ?.
Choose students to sit on the circles to show a six on the first ten-frame.
Choose students to sit on the circles to show four on the second ten-frame.

Ask students how they should move to show the correct answer.

Have students return to their original locations, off the ten-frames.

Give every student a blank sticky note. Designate a location on the wall or on a tabletop where you have either drawn four ten-frames on chart paper or have created ten-frames from sticky notes. Use one color to create the first ten-frame. Use another color to create the second ten-frame. (You may have to tape sticky notes down if they want to curl.)

Ask students to give you a number for the first ten-frame. Have that many students place their sticky notes on the first ten-frame. (Use a third color sticky notes.)
Ask students to give you a number for the second ten-frame. Have that many students place their sticky notes on the second ten-frame. (Use a fourth color sticky notes.)

Ask students how they should move the sticky notes to show the correct answer.

Have students explain their thinking, before allowing them to move the sticky notes.

Repeat the exercise making sure students who did not participate in the last set of ten-frames are chosen first.

Have students return to their tables or desks with their partners.
Have students get up from their places at the tables/desks because it is time for some movement.

Students should be ready to Show What They Know after they have completed moving.

Part 2: Show What You Know

Follow the instructions on page 29 in the Brick Math Subtraction Teacher Edition. Complete #1.
Students complete page 16 Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 30 in the Brick Math Subtraction Teacher Edition. Complete #2.
Students complete page 17, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 30 in the Brick Math Subtraction Teacher Edition. Complete #3.
Students complete page 17, #3 in the Brick Math Subtraction Student Edition.

Challenge
Follow the instructions on page 30 in the Brick Math Subtraction Teacher Edition. Complete the Challenge.
Students complete page 17, #3 in the Brick Math Subtraction Student Edition.

Content Assessment

Students complete Assessment #1 on page 18 in the Brick Math Subtraction Student Edition. Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 19 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #3 on page 19 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #4 on page 19 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Inventory Check

Inventory check: Have students remove all the 2x2 bricks from the box and count them. They should have twenty (20) 2x2 bricks. After the students have verified the bricks, they replace the 2x2 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have students put away the bricks into the correct compartments of the Brick Math containers. Have both partners check the container(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems

Tell students a story problem like the following:

> Julia took five steps on the path of ten steps. Her friend Donata asked her to take four steps backward. How many steps from the starting place is Julia?
>
> Create a model to show the steps Julia took first on your baseplate.
> Create a model to show the steps Julia took backward.
> How many steps from the starting place is Julia? Create a model to show the steps.

Help students to complete the story problem and compare the steps.

Now, have each pair work together to create a new subtraction story problem that they can show on their baseplate.

As time allows, have students share their stories and baseplate with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 18 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 18.
Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.
>
> I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work.
> Draw a green brick after the word Partner.
>
> I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "model subtraction" in the blank space at the bottom of page 18.
Students should draw a specific color brick after the words "model subtraction" based on the following:

I need help modeling simple subtraction. If this describes you today, draw an orange brick after the words "model subtraction."

I can model simple subtraction. If this describes you today, draw a green brick after the words "model subtraction."

I can help others to model simple subtraction. If this describes you today, draw a blue brick after the words "model subtraction."

Day 3 – Missing Term Subtraction
Before the students arrive, please read pages 23-24 (top) to prepare for the day.

Welcome to Day 3
Welcome students back to Brick Math summer camp. Start in the circle.
Ask students if they remember what the parts of a subtraction problem are – Minuend, subtrahend, difference, and what sign is used – minus sign. Ask students if the answer could be a subtrahend or a minuend. Yes.

Have each student write a compliment for his or her partner on something the partner did well yesterday.

Have students move to their tables or desks with their partners.

Working with a Partner
Remind students of the partner rules created on Day 1. Have students share the compliment with their partners that they wrote in the journal. Be sure to have each student respond with "Thank you."

Materials
Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Part 1: Show Them How
Follow the instructions on page 24 in the Brick Math Subtraction Teacher Edition.
Complete #1.
Students complete page 20, Part 1, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 25 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete page 20, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 26 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 21, #3 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 26 in the Brick Math Subtraction Teacher Edition.
Complete #4.
Students complete page 21, #4 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 26 in the Brick Math Subtraction Teacher Edition.
Complete #5.
Students complete page 22, #5 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 27 in the Brick Math Subtraction Teacher Edition.
Complete #6.
Students complete page 22, #6 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 28 in the Brick Math Subtraction Teacher Edition.
Complete #7.
Students complete page 23, #7 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 28 in the Brick Math Subtraction Teacher Edition.
Complete #8.
Students complete page 23, #8 in the Brick Math Subtraction Student Edition

Follow the instructions on page 29 in the Brick Math Subtraction Teacher Edition.
Complete #9.
Students complete page 23, #9 in the Brick Math Subtraction Student Edition

Move to a Number

Have students line up in a row of 10. Break the line of students into two groups – one containing 6 students and the other 4 students. Ask students to write as many mathematical sentences or equations as they can using 10, 6, and 4.

Students should be able to write both addition and subtraction problems, with answers and unknowns. Have students act out each of the sentences or equations.

$10 - 6 = 4$
$10 - 4 = 6$
$4 + 6 = 10$
$6 + 4 = 10$
$10 - ? = 6$
$10 - ? = 4$
$4 + ? = 10$
$6 + ? = 10$
$4 + 6 = ?$
$6 + 4 = ?$

Have the first group of students sit down and have another group of students stand in a line of 10. Split the group into a group of 3 students and a group of 7 students.
Have students repeat the activity using 1, 3, and 7.

After the activity is over, students should be ready to return to their desks/tables and complete part 2.

Part 2: Show What You Know
Follow the instructions on page 24 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #1.
Students complete page 24, Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 24 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #2.
Students complete page 25, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 25 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 26, #3 in the Brick Math Subtraction Student Edition.

Challenge
Students complete page 27, the Challenge the Brick Math Subtraction Student Edition.

Content Assessment
Students complete Assessment #1 on page 28 in the Brick Math Subtraction Student Edition. Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 28 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #3 on page 29 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #4 on page 29 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Inventory Check
Inventory check: Have students remove all the 2x3 bricks from the box and count them. They should have ten (10) 2x3 bricks. After the students have verified the bricks, they replace the 2x3 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have students place the bricks into the correct compartments of the Brick Math bin.

Have both partners check the bin(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems

Tell students a story problem like the following:

> Cecilia and Erin are meeting friends for a picnic. They took 12 cans of soda to the picnic. When the picnic was over, Cecilia and Erin had 3 cans remaining. How much soda was consumed?

Help students to complete the story problem and create models to show the process of getting an answer with a missing term.

Now, have each pair work together to create a new story problem that uses subtraction with a missing term.

As time allows, have students share their stories and baseplate with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom right of page 29 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom right of page 29.

Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.

> I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work. Draw a green brick after the word Partner.

> I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "I can find the solution for a missing term using subtraction" in the blank space at the bottom of page 29.

Students should draw a specific color brick after the words "I can find the solution for a missing term using subtraction" based on the following:

I need help with finding the solution for a missing term using subtraction. Draw an orange brick after the words "I can find the solution for a missing term using subtraction."

I can find the solution for a missing term using subtraction. Draw a green brick after the words "I can find the solution for a missing term using subtraction."

I can help others find the solution for a missing term using subtraction. Draw a blue brick after the words "I can find the solution for a missing term using subtraction."

Day 4 – Decomposing Numbers/Place Value

Before the students arrive, please read pages 31-32 (top) to prepare for the day.

Welcome

Students start in their circle area.

Ask students how many ones are in 10. Have them count to 10 using their fingers or other items.

Ask students what a "ten" represents – ten ones.

Ask students how many individual ones are in the number 14. There are 14 ones in 14. However, there are 1 ten and 4 ones in the numerals that show 14. One ten and four ones are the same as 14 ones. When we write the number 14, the "1" is in the ten's column and the "4" is in the one's column. Each column in place value can only hold one number, 0 through 9. The most ones you can show in the one's column is 9. If you have more than 9 ones, a group of ten ones needs to be moved out of the one's column and a "1" needs to be added to the tens column.

How many ones in a ten? Ten ones in a ten.

Tell students they are going to work with numbers today with place value – ones and tens.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share something with their partners that they appreciate about working with that person.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Part 1: Show Them How

Follow the instructions on page 32 in the Brick Math Subtraction Teacher Edition.
Complete #1.
Students complete page 30 Part 1, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 32 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete page 30 Part 1, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 33 in the Brick Math Subtraction Teacher Edition.

Complete #3.
Students complete page 30, #3 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 33 in the Brick Math Subtraction Teacher Edition.
Complete #4.
Students complete page 31, #4 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 33 in the Brick Math Subtraction Teacher Edition.
Complete #5.
Students complete page 31, #5 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 33-34 in the Brick Math Subtraction Teacher Edition.
Complete #6.
Students complete page 31, #6 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 34 in the Brick Math Subtraction Teacher Edition.
Complete #7.
Students complete page 31, #7 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 34 in the Brick Math Subtraction Teacher Edition.
Complete #8.
Students complete page 31, #8 in the Brick Math Subtraction Student Edition.

Students complete page 31, #9 in the Brick Math Subtraction Student Edition.

Move with Place Value

There are a variety of place-value songs that can be used with students. Students should be putting together the one's, ten's, and perhaps the hundred's columns and what each represents.

Have students sing along and create motions to help them. Allow students to be creative and enjoy singing and movement.

Tell students they are going to represent different values. Then, place the papers with Ones, Tens, and Hundreds on the floor in the correct order.
Tell students they are going to line up behind the place values to make a two-digit number.
Example: 31
Choose one student at a time to position themselves behind the place value and tell what the value of the number is now. Then, the child should sit down in that position so all children can see how many students are behind each place.
If the first child moves to the ten's place, the value is 10. If the second child moves to the one's place, the value is 11. Continue until the value 31 is created. Have the students help each other to position themselves and say the current value. The students with the place value cards should verify the number of ones and tens behind them.

Take time to do at least two more rounds.

Now, start with a number – 22 – have students create the number with two tens and two ones. Tell students we are going to subtract 9 from 22. To do that we need to decompose 22 into one ten and some ones.

Have one of the students in the tens column move in front of the group. That person should announce that they represent one ten and that one ten equals ten ones. Have ten students come forward from the circle and all shake hands with the "ten." Have the ten students line up behind the one's column and the ten sit in a circle.

Ask students how they could count to verify that the number represents 22. Have the students explain one way (perhaps counting the ten first and jump counting to 11, 12, etc., or starting with the ones and then jump counting from 12 to 22. Count ten ones and then add the ten and then add the two ones.

Allow students to show more than one way. Now that the class has verified the number 22. Remind students we want to subtract 9 from 22. How could they show that? Nine students leave the one's column – counting off as they go.

Then, have the students count the remaining numbers in place value to get 13. One ten and three ones.

Take time to do several rounds, making certain that every child has participated at least twice.

Have students return to their tables or desks with their partners.

Part 2: Show What You Know
Follow the instructions on page 35 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #1.
Students complete page 32 Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 36 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete page 33, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 38 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 34, #3 in the Brick Math Subtraction Student Edition.

Challenge

Follow the instructions on page 38 in the Brick Math Subtraction Teacher Edition.
Complete the Challenge.
Students complete the Challenge on page 35 in the Brick Math Subtraction Student Edition.

Content Assessment
Students complete Assessment #1 on page 36 in the Brick Math Subtraction Student Edition.
Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 37 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on
another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #3 on page 38 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on
another person's paper. They can only discuss. Check students' work around the room.

Inventory Check
Inventory check: Have students remove all the 1x3 bricks from the box and count them. They
should have twenty (20) 1x3 bricks. After the students have verified the bricks, they replace the
1x3 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection
and storage.

Have students place the bricks into the correct compartments of the Brick Math bin.
Have both partners check the bin(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems
Tell students a story problem like the following:

> Davie and Howie were playing a game. They each would roll a die that had
> 9 sides. Davie rolled first. The first number rolled, "8," Davie placed in the
> ones' column. The second number rolled "2" was placed in the tens'
> column. Dave has 28. Then Howie rolled. He rolled "0" first and placed it in
> the one's column. The second number Howie rolled "3" was placed in the
> tens' column. Howie has 30.
>
> How much larger is Howie's number than Dave's number?

Help students to complete the story problem and show their work using models.

Now, have each pair work together to create a new story problem that they can show on their
baseplate and explain the place values of the numbers and the difference.

As time allows, have students share their stories and baseplate with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 38 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 38.

Students should draw a specific color brick after the word "Partner" based on the following:

I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work. Draw a green brick after the word Partner.

I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "decompose numbers" in the blank space at the bottom of page 38. Students should draw a specific color brick after the words "decompose numbers" based on the following:

I need help with decomposing numbers correctly using place value. If this describes you today, draw an orange brick after the words "decompose numbers."

I can decompose numbers correctly using place value. If this describes you today, draw a green brick after the words "decompose numbers."

I can help others to decompose numbers correctly using place value. If this describes you today, draw a blue brick after the words "decompose numbers."

Day 5 – Result Unknown Problems Within 20

Before the students arrive, please read pages 39-40 (top) to prepare for the day.

Welcome

Welcome to Day 5. Tell the students that they have done a fabulous job of learning so far.
Students start in their circle area.
Tell students they are going to represent different values.
Have cards showing the words Minuend, Subtrahend, Difference, Minus (with the minus sign), Equal sign, and either a ? or an empty box. (You will use these cards again on another day.)

Choose 5 students to come forward. Hand each child a card (not using the empty box or ? yet). Have students line up in the order of a subtraction equation. Ask the class to verify the order.

Hand the ? or empty box to a 6th child and ask them to take the place of the difference. Ask students what the "?" or the empty box represents. The difference. Have those students sit in the center of the circle in order.

Choose 4 students to sit behind the minuend and 1 student to sit behind the subtrahend. Ask the class what the subtraction problem is. 4 – 1 = ?
Ask the class one way they could find the answer. Then, ask students for another way, and possibly a third way. Have students role-play each method to solve the problem.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share which rule they think is most important.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Part 1: Show Them How

Follow the instructions on pages 40-43 in the Brick Math Subtraction Teacher Edition. Complete #1.
Students complete page 39 Part 1, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 43-45 in the Brick Math Subtraction Teacher Edition. Complete #2.

Students complete page 40, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 45-46 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 41, #3 in the Brick Math Subtraction Student Edition.

Moving to Subtract with an Unknown Result

Have students return to their circle area and take a seat.

Have cards showing the words Minuend, Subtrahend, Difference, Minus (with the minus sign), Equal sign, and either a ? or an empty box. (You will use these cards again on another day.)

Choose 5 students to come forward. Hand each child a card (not using the empty box or ? yet). Have students line up in the order of a subtraction equation. Ask the class to verify the order.

Hand the ? or empty box to a 6th child and ask them to take the place of the difference. Ask students what the "?" or the empty box represents. The difference. Have those students sit in the center of the circle in order.

Choose 6 students to sit behind the minuend and 2 students to sit behind the subtrahend. Ask the class what the subtraction problem is. 6 – 2 = ?
Ask the class one way they could find the answer. Then, ask students for another way. Have students role-play each method to solve the problem.

End with a subtraction song. You can find a song or video on the internet about subtraction and allow the students to move with the music and create hand or body motions.

Have students find their partners and go to their places at the desks or tables.

Part 2: Show What You Know

Follow the instructions on page 47 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #1.
Students complete page 42 Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 48 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #2.
Students complete page 43, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 49 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 44, #3 in the Brick Math Subtraction Student Edition.

Challenge

Follow the instructions on page 50 in the Brick Math Subtraction Teacher Edition.
Complete the Challenge.
Students complete page 45, the Challenge, in the Brick Math Subtraction Student Edition.

Content Assessment

Students complete Assessment #1 on page 46 in the Brick Math Subtraction Student Edition.
Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 47 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Inventory Check

Inventory check: Have students remove all the 1x1 bricks from the box and count them. They should have twenty-five (25) of each color (red, blue, white, green) 1x1 bricks. After the students have verified the bricks, they replace the 1x1 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have students place the bricks into the correct compartments of the Brick Math bin.
Have both partners check the bin(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems

Tell students a story problem like the following:

> Tonica and Gerri were counting money in a piggy bank. Tonica found nine dimes and eight pennies. Gerri reminded Tonica that they needed seven dimes and five pennies to buy a soda to share. Build a model to help them know how much money they will have left if they buy a soda.

Help students to complete the story problem and count the money. If using money is too difficult, then change the story to having 67 marbles and needing 38 marbles to play a game.

Now, have each pair work together to create a new story problem that they can show on their baseplate.

As time allows, have students share their stories and baseplate with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 46 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 46.

Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.

> I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work. Draw a green brick after the word Partner.

> I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "find the difference" in the blank space at the bottom of page 46. Students should draw a specific color brick after the words "find the difference" based on the following:

> I need help finding the difference in a subtraction problem. If this describes you today, draw an orange brick after the words "find the difference."

> I can find the difference in a subtraction problem. If this describes you today, draw a green brick after the words "find the difference."

> I can help others find the difference in a subtraction problem. If this describes you today, draw a blue brick after the words "find the difference."

Day 6 – Change Unknown Problems Within 20

Before the students arrive, please read pages 51-52 (top) to prepare for the day.

Welcome

Welcome students to Day 6.
Students start in their circle area. Tell them they are going to review what they learned yesterday.

Show students a Subtraction problem like 12 - 3 = ☐

Give students cards to represent 12, -, 3, =, and ?. Have them create the problem in the center of the circle. Ask students to identify the minuend, the subtrahend, and the difference (unknown result).

Have students move into the correct positions to create the Subtraction problem. Then ask students how they could determine the answer. Have them show at least two ways.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students draw a picture of their team and how the two of them work well together.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Part 1: Show Them How

Follow the instructions on pages 52-55 in the Brick Math Subtraction Teacher Edition.
Complete Problem #1. Continue through 4 and 5.
Students complete page 48 Part 1, Problem #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 55-57 in the Brick Math Subtraction Teacher Edition.
Complete Problem #2
Students complete page 49, Problem #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 57-59 in the Brick Math Subtraction Teacher Edition.
Complete Problem #3.
Students complete page 50, Problem #3 in the Brick Math Subtraction Student Edition.

Move with a Change Unknown

Have students return to their circle area and take a seat.

Now, have students show more than one way to get the correct answer to the subtraction problem, 11 - ? = 4.

Ask the class how they could solve this problem in more than one way. Have the class move students into different positions to solve the problem.

Then, end with a song about subtraction – either one used previously or a new one. Be sure everyone moves with the music.

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Follow the instructions on page 60 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #1.
Students complete page 51 Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 61 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete page 52, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 62 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 53, #3 in the Brick Math Subtraction Student Edition.

Challenge

Follow the instructions on page 63 in the Brick Math Subtraction Teacher Edition.
Complete the Challenge.
Students complete page 54, Challenge, in the Brick Math Subtraction Student Edition.

Content Assessment

Students complete Assessment #1 on page 55 in the Brick Math Subtraction Student Edition.
Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 55 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #3 on page 56 in the Brick Math Subtraction Student Edition. Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Inventory Check

Inventory check: Have students remove all the 1x6 bricks from the box and count them. They should have ten (10) 1x6 bricks. After the students have verified the bricks, they replace the 1x6 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have students place the bricks into the correct compartments of the Brick Math bin. Have both partners check the bin(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems

Tell students a story problem like the following:

> Samantha has a small garden. She raised 16 bean plants. Last night a deer got into the garden and ate a lot of her plants. Today she only has 7 plants left. How many plants did the deer eat?

Help students to complete the story problem.

Now, have each pair work together to create a new story problem that they can show on their baseplate that shows simple subtraction with the change unknown.

As time allows, have students share their stories and baseplate with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 56 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 56.

Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.

I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work. Draw a green brick after the word Partner.

I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "change unknown" in the blank space at the bottom of page 56. Students should draw a specific color brick after the words "change unknown" based on the following:

I need help solving subtraction problems with the change unknown. If this describes you today, draw an orange brick after the words "change unknown."

I can solve subtraction problems with the change unknown. If this describes you today, draw a green brick after the words "change unknown."

I can help others I can solve subtraction problems with the change unknown. If this describes you today, draw a blue brick after the words "change unknown."

Day 7 – Start Unknown Problems Within 20

Before the students arrive, please read pages 64-65 (top) to prepare for the day.

Welcome

Welcome students to Day 7 – their lucky day!
Students start in their circle area.

Tell students today they are going to solve problems with the Minuend unknown – or with the Start unknown. Have students create a subtraction problem using the number 7, but with the Start unknown. For example, $? - 7 = 5$.

Have students create 2 more problems with the start unknown. Keep these 3 problems unsolved for now.

Have students find their partners and go to their places at the desks or tables.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students share something they enjoyed with their partners yesterday.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Part 1: Show Them How

If students need a review on ten-frames, you can find the strategy in Chapter 2.

Follow the instructions on page 65 in the Brick Math Subtraction Teacher Edition.
Complete #1.
Students complete pages 57-58 Part 1, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 66 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete page 58, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 66-67 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete page 59, #3 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 68 in the Brick Math Subtraction Teacher Edition.

Complete #4.
Students complete page 59, #4 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 69 in the Brick Math Subtraction Teacher Edition.
Complete #5.
Students complete page 60, #5 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 69 in the Brick Math Subtraction Teacher Edition.
Complete #6.
Students complete page 61, #6 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 69 in the Brick Math Subtraction Teacher Edition.
Complete #7.
Students complete page 61, #7 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 70 in the Brick Math Subtraction Teacher Edition.
Complete #8.
Students complete page 61, #8 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 70 in the Brick Math Subtraction Teacher Edition.
Complete #9.
Students complete page 61, #9 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 70 in the Brick Math Subtraction Teacher Edition.
Complete #10.
Students complete page 62, #10 in the Brick Math Subtraction Student Edition.

Move to Find the Start Unknown

Have students return to their circle area and take a seat.

Return to the three problems students created at the beginning of the day. Now it is time to solve them.

Break the class into three groups. Each group will take one of the problems and determine how to solve it using a 1x10 strip model and again how to solve it using a ten-frame model. Allow students time to discuss and determine how to show it. Then, have each group demonstrate to the class how to solve the problem. Ask everyone in the group to tell something about the problem – perhaps starting with identifying the parts of the problem – minuend, subtrahend, difference. Have the class ask questions through you so you can be sure how the question should be phrased so everyone can hear good questions. For example, "Why did you do that?" could be rephrased as "Why was the subtrahend shown as 3 1x2 bricks?"

End with a song about subtraction and allow students to move with the music.

Have students return to their tables or desks with their partners.

Part 2: Show What You Know

Follow the instructions on page 71 in the Brick Math Subtraction Teacher Edition.
Complete Part 2, #1.
Students complete pages 63-64 Part 2, #1 in the Brick Math Subtraction Student Edition.

Follow the instructions on page 71 in the Brick Math Subtraction Teacher Edition.
Complete #2.
Students complete pages 65-66, #2 in the Brick Math Subtraction Student Edition.

Follow the instructions on pages 72-73 in the Brick Math Subtraction Teacher Edition.
Complete #3.
Students complete pages 67-68, #3 in the Brick Math Subtraction Student Edition.

Challenge

Follow the instructions on page 73 in the Brick Math Subtraction Teacher Edition.
Complete the Challenge.
Students complete the Challenge on page 68 in the Brick Math Subtraction Student Edition.

Content Assessment

Students complete Assessment #1 on page 69 in the Brick Math Subtraction Student Edition.
Discuss the answers with the class. Help students to improve their answers as needed.

Students complete Assessment #2 on page 70 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Students complete Assessment #3 on page 71 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.
Students complete Assessment #4 on page 71 in the Brick Math Subtraction Student Edition.
Ask partners to check the work but they cannot touch the model nor can they write anything on another person's paper. They can only discuss. Check students' work around the room.

Inventory Check

Inventory check: Have students remove all the 2x6, 1x12, and 1x16 bricks from the box and count them. They should have four (4) 2x6 bricks, six (6) 1x12 bricks, and two (2) 1x16 bricks. After the students have verified the bricks, they replace the 2x6, 1x12, and 1x16 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have students place the bricks into the correct compartments of the Brick Math bin. Have both partners check the bin(s) and give you a thumbs-up that they are perfect.

Optional: Story Problems

Tell students a story problem like the following:

> Jasmine and Jason needed 7 cartons of milk so everyone at the table could have one. They had 8 cartons of milk left in the refrigerator. How many cartons of milk did they start with?

Help students to complete the story problem. Have students explain what each value represents – minuend, subtrahend, difference. Ask students the value of the start unknown, or minuend.

Now, have each pair work together to create a new story problem that they can show on their baseplate. Have students write the math sentence at the bottom of page 71. Then, have students solve for the start unknown. Have students label the parts of the equation.

As time allows, have students share their stories and baseplate with at least one other team.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 70 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 70. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.

> I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work. Draw a green brick after the word Partner.

> I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "start unknown" in the blank space at the bottom of page 74. Students should draw a specific color brick after the words "start unknown" based on the following:

I need help solving subtraction problems with a start unknown. If this describes you today, draw an orange brick after the word "start unknown."

I can solve subtraction problems with a start unknown. If this describes you today, draw a green brick after the word "start unknown."

I can show others how to solve subtraction problems with a start unknown. If this describes you today, draw a blue brick after the word "start unknown."

Day 8 – Review of Subtraction

Before the students arrive, please have copies of page 78, baseplates templates, ready for student use.

Welcome

Welcome students to day eight of camp. Tell students they did a great job so far and you know they will finish strong! Today they are going to review subtraction. The unknown value can be anywhere – minuend, subtrahend, or difference. I know you can figure it out because you have done so well!

Have cards showing the numbers 1-20 ready for student use along with 3 sets of cards showing a minus sign, an equal sign, and an unknown (? or box). Give each student a card with a number on it.

Split the class into three groups. Give each group a set of cards with the signs.
Have each group create three problems. The first problem should show the difference as the unknown. The second problem should show the start or minuend as unknown. And the third problem should show the subtrahend or change unknown. All students must participate in at least one of the problems.

When the groups are ready, have students return to sitting in the circle. Ask each group to share their first problem with the class. Ask each group to name the parts of the equation, which value is unknown, and if they solved the problem, what the answer is. Choose one group to demonstrate how to get an answer.

Collect the cards and have all students return to the circle. Tell them they will be working with their partners and two groups will also work together today.

Have students find their partners and their materials and take a seat at the tables or desks. Everyone needs a baseplate.

Working with a Partner

Remind students of the partner rules created on Day 1. Ask students which rule is the hardest to follow.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Solving Subtraction Word Problems

Partners will need a copy of the baseplate template.

You will want to have these problems copied for student use or shown on chart paper or projected on the screen so students can refer to them as needed.

For each problem students need to write the equation and identify the unknown as the start, change, minuend, subtrahend, or difference in their journals. Then, students work together with the bricks to model the problem and the solution. As partners complete the problem, have them compare their work with the work of another team.

Note that some problems can be answered by addition or subtraction. Ask students to set up each problem as a subtraction problem and as an addition problem.

Problem #1
Seventeen balls were in the gym. The ball rack holds 20. How many balls were outside?
Example 20 – 17 = ?

Problem #2
There were 19 flowers in the vase. Stuart took 3 flowers for his mother. How many flowers remain in the vase?
Example 19 – 3 = ?

Problem #3
Kelly had 23 bricks that contained 4 studs. She gave some to her partner. Now Kelly has 6 bricks left. How many bricks did she give to her partner?
Example 23 - ? = 6

Problem #4
There were 4 pillows left on the bed. Steve and his friend had 3 pillows on the sofa. How many pillows were originally on the bed?
Example ? – 4 = 3

Problem #5
Rei Fiona jumped 16 times on the trampoline. Juanita jumped 19 times. How many more times did Juanita jump?
Example 19 – 16 = ?

Problem #6
Tavon had 17 pieces of candy. His friend Petra also had some candy. Together they had 32 pieces of candy. How many pieces of candy did Petra have?
Example 32 – 17 = ?
Example 32 - ? = 17

The groups that finish early should create their story problems and show how to solve them. Then, the partners should trade problems with another group and check their work.

Move to Subtraction

Have students return to their circle area and take a seat. Ask students what they liked best about solving word problems. Keep the focus on the positive. If some students express that it was hard, ask the class for tips on how to make it easier.

Use Simon Says to move forward and backward as well as use arms up and down. Next, have students move forward when you say "add XX steps" or move backward when you say "subtract XX steps."

Sing a short song about subtraction and allow students to move to the music.

More Word Problems – Subtraction

Partners will need a copy of the baseplate template.
You will want to have these problems copied for student use or shown on chart paper or projected on the screen so students can refer to them as needed.

Problem #1
Seventeen cupcakes were in the display case. The display case holds 24 cupcakes. How many cupcakes had been sold?
Example 24 - ? = 17
Example 24 – 17 = ?

Problem #2
There were 19 bricks in the container. Stuart had 15 bricks on the desk. How many bricks were originally in the container?
Example ? – 19 = 15
Example ? – 15 = 19

Problem #3
Steve and his friend moved 15 toy cars to the table. There were 7 toy cars left on the track. How many toy cars were originally on the track?
Example 15 + 7 = ?
Example ? – 15 = 7

Inventory Check

Inventory check: Have students remove all the 1x10 bricks from the box and count them. They should have eight (8) 1x10 bricks. After the students have verified the bricks, they replace the

1x10 bricks into the compartment and give you a thumbs-up. The brick set is ready for collection and storage.

Have each team bring their materials to you in numerical order, so you can keep track of your sets. Give each child their assessment sheet to be given to their parents.

Working with a Partner

Remind students about the partner rules they created earlier today. Refer to the Partner's Rules Chart to refresh their memories.

Self-Assessment

Ask students to use the blank space at the bottom of page 70 in the Brick Math Subtraction Student Edition.

All students write the word "Partner" in the blank space at the bottom of page 70. Read aloud the statements to the students and have them draw the correct color brick.

Students should draw a specific color brick after the word "Partner" based on the following:

> I need to work on being a better partner. I did not listen to and help my partner as I should have. Draw an orange brick after the word Partner.

> I was a good partner today. I helped my partner but sometimes I did their work for them or I let them do my work. Draw a green brick after the word Partner.

> I was a good partner today. I helped my partner by checking their work and not by doing their work. Draw a blue brick after the word Partner.

All students should write "word problems" in the blank space at the bottom of page 74. Students should draw a specific color brick after the words "word problems" based on the following:

> I need help solving subtraction word problems. If this describes you today, draw an orange brick after the word "word problems."

> I can solve subtraction word problems. If this describes you today, draw a green brick after the word "word problems."

I can show others how to solve subtraction word problems. If this describes you today, draw a blue brick after the word "word problems."

Day 9 – Subtraction and Addition

Before the students arrive, please have copies of page 78, baseplates templates, ready for student use.

Welcome

Welcome students to day eight of camp.

Tell students that subtraction and addition are related very closely and today they will show more than one way to set up a problem and find a solution.

Give them this example. Juanita and Rebecca are jumping rope. Juanita jumps 5 more jumps than Rebecca. Rebecca jumped 27 times. How many times did Juanita jump?

Ask students how they might set up the problem. Help them to find these four possibilities.

- Rebecca jumps + 5 = Juanita jumps   27 + 5 = ?
- 5 + Rebecca jumps = Juanita jumps   5 + 27 + ?
- Juanita jumps – 5 = Rebecca jumps   ? – 5 = 27
- Juanita jumps – Rebecca jumps = 5   ? – 27 = 5

Ask students how the addition problems and subtraction problems are related.

Give students a new example:
Ben and Tavon were playing a game. Ben had 57 points. The total points scored at the end of the game was 93. How many points did Tavon score?

Possibilities:
Ben's score + Tavon's score = 93   57 + ? = 93
Tavon's score + Ben's score = 93   ? + 57 = 93
93 – Ben's score = Tavon's score   93 – 57 = ?
93 – Tavon's score = Ben's score   93 - ? = 57

Have students find their partners and their materials and take a seat at the tables or desks. Everyone needs a baseplate.

Working with a Partner

Remind students of the partner rules created on Day 1. Have students tell their partners what skill they are going to work on today.

Materials

Students take bricks from the divided box as needed. At the end of the day, students inventory one compartment. At the end of each day, tell students which compartment to inventory and how many bricks of a certain size should be in that area.

Solving Addition and Subtraction Word Problems

Partners will need a copy of the baseplate template.
You will want to have these problems copied for student use or shown on chart paper or projected on the screen so students can refer to them as needed.

For each problem students need to write the equation and identify the unknown as the start, change, difference, or sum and as minuend, subtrahend, difference, addend, or sum. Then, students work together with the bricks to model the problem and the solution. As partners complete the problem, have them compare their work with the work of another team.

Note that some problems can be answered by addition or subtraction. Ask students to set up each problem as a subtraction problem and as an addition problem.

Problem #1
Seventeen balls were in the gym. The ball rack holds 20. How many balls were outside?
Example 17 + ? = 20
Example 20 – 17 = ?

Problem #2
There were 19 flowers in the vase. Stuart took 3 flowers for his mother. How many flowers remain in the vase?
Example 19 – 3 = ?
Example 3 + ? = 19

Problem #3
Kelly had 23 bricks that contained 4 studs. She gave some to her partner. Now Kelly has 6 bricks left. How many bricks did she give to her partner?
Example 23 - ? = 6
Example 6 + ? = 23

Problem #4
There were 4 pillows left on the bed. Steve and his friend had 3 pillows on the sofa. How many pillows were originally on the bed?
Example 4 + 3 = ?
Example ? – 4 = 3

Problem #5
Rei Fiona jumped 16 times on the trampoline. Juanita jumped 19 times. How many times did Rei Fiona and Juanita jump?
Example 16 + 19 = ?
Example (not typical) ? – 16 = 19

Problem #6
Tavon had 17 pieces of candy. His friend Petra also had some candy. Together they had 32 pieces of candy. How many pieces of candy did Petra have?
Example 17 + ? = 32
Example 32 – 17 = ?
Example 32 - ? = 17

The groups that finish early should create their story problem and show how to solve it. Then, the partners should trade problems with another group and check their work.

Move to Subtraction

Have students return to their circle area and take a seat. Ask students what they liked best about solving word problems. Keep the focus on the positive. If some students express that it was hard, ask the class for tips on how to make it easier.

Use Simon Says to move forward and backward as well as use arms up and down. Next, have students move forward when you say "add XX steps" or move backward when you say "subtract XX steps."

Sing a short song about subtraction and allow students to move to the music.

Teacher Assessment of Student Performance

The Student Assessment Chart on page 72 of the Brick Math Subtraction Student Edition should be completed before class begins. You will need to make your assessments and make appropriate comments so parents can see the progress made. If you wish, students can complete this as a self-assessment by making a checkmark in the correct boxes, and then you can add your assessments and comments. The template is found on page 76 of the Subtraction Teacher Edition.

Optional Parent Activity and Materials Check In

Allow parents to come to the classroom for the last 30 minutes of the camp day.
Each parent will work with their child. The child will be the teacher for these activities and will help their parents learn how to use the bricks.

If a parent is unable to attend, the student can do the activity on their own or with a partner.

More Word Problems – Addition or Subtraction

Partners will need a copy of the baseplate template.
You will want to have these problems copied for student use or shown on chart paper or projected on the screen so students can refer to them as needed.

Students act as teachers to help their parents solve the problem. The first problem should be demonstrated by the student to the parent, with explanations of how and why they are using the bricks. Students need to identify the minuend, subtrahend, and difference for subtraction problems and addends and sum for addition problems. They should try to show both an addition and subtraction equation for most problems.

Note that time may run out before all students complete the problems.

Problem #1
Seventeen balls were in the gym. The ball rack holds 24. How many balls were being used outside?
Example $17 + ? = 24$
Example $24 - 17 = ?$

Problem #2
There were 19 flowers in the vase. Stuart brought 3 flowers. How many flowers are in the vase?
Example $19 + 3 = ?$
Example $? - 3 = 19$

Problem #3
Kelly had 12 bricks that contain 4 studs. Now, Kelly has 5 bricks left. How many bricks did she give to her partner?
Example $12 - ? = 5$
Example $5 + ? = 12$

Problem #4
Steve and his friend moved 15 toy cars to the table. There were 7 toy cars left on the track. How many toy cars were originally on the track?
Example $15 + 7 = ?$
Example $? - 15 = 7$

Problem #5
Rei Fiona jumped 16 times on the trampoline. Juanita jumped 19 times. How many more times did Juanita jump?
Example $16 + ? = 19$
Example $19 - 16 = ?$

Problem #6
Tavon had 17 pieces of candy. He shared some candy with his friend Petra. After the two of them ate several pieces of candy, Tavon had 9 pieces left. How many pieces of candy did Petra and Tavon eat?
Example 17 - ? = 9
Example ? + 9 = 17

Ask the students and parents to spot-check the compartments and make sure all the bricks are in the correct locations. Have students look on the floor to find any stray bricks.

Have each team bring their materials to you in numerical order, so you can keep track of your sets. Give each child their assessment sheet to be given to their parents.

Tell everyone thanks for coming!
You should have your sets in order and organized for the next use.