

<b>Grade 2</b>	<b>Lesson: 8-2</b> <b>Models to Add Two- and One-Digit Numbers</b>	Reference to English
<b>Math Standard(s): 2.NBT.5 (also 2.NBT.9)</b> <b>Domain: Number and Operations in Base Ten</b>		
<b>Content Objective(s):</b>		<b>Language Objective(s):</b>
Students will use concrete models to add a one-digit number to a two-digit number and decide if regrouping is needed. <i>I can add a one-digit number to a two-digit number and decide if I need to regroup.</i>		Students will say “ones place” or “tens place.” I can say “ones place” or “tens place.”
<b>Essential Understanding:</b> The standard addition algorithm for two-digit and one-digit numbers breaks the calculation into simpler calculations using place value, starting with the ones place and then the tens. Answers to the simpler calculations are used to give the final sum.		<b>Required Academic Vocabulary for Word Wall:</b> <b>Listen:</b> <b>Read:</b> <b>Write:</b> <b>Speak: ones place, tens place</b> <b>Sentence Frame:</b>
<b>Materials:</b> <ul style="list-style-type: none"><li>Place – Value Mat A (Teaching Tool 8)</li><li>Number cards 0-11 (Teaching Tool 2)</li><li>Connecting Cubes (or teaching tool 1)</li><li>Whiteboards, erases and markers.</li><li>Models to Add Two- and One-Digit Numbers (page 217)</li><li>Guided Practice (page 218)</li></ul>		<b>Additional Lesson Vocabulary:</b> flowers
<b>Lesson:</b>		<b>Instructional Time: 40 minutes</b>
<p><b>Opening: (3 minutes)</b></p> <ul style="list-style-type: none"> <li>Have <math>32 + 4 = \underline{\quad}</math> written on the board.</li> <li>Have 32 connecting cubes together and 4 loose cubes ready to add.</li> </ul> <p><b>T: “You have learned how to add a one-digit number to a two-digit number using connecting cubes and a place-value mat. Let’s do one together.”</b></p> <p><b>T: “Look at the board. Read the problem with me. <math>32 + 4 = \underline{\quad}</math>.”</b></p> <p><i>S: will read, “32 plus 4 equals <math>\underline{\quad}</math>” with the teacher.</i></p> <p><b>T: “Tell your neighbor what I need to do with the 32 cubes.”</b></p> <p><i>S: will turn to their neighbor and say, “makes tens.”</i></p> <p><b>T: “First I need to make tens. How many tens can I make with 32? Show me with your fingers.”</b></p> <p><i>S: will show 3 with their fingers.</i></p> <p><b>T: “Here are 3 groups of 10. 10, 20, 30. Tell your neighbor how many ones I have left over.”</b></p> <p><i>S: will turn to their neighbor and say, “2 ones left.”</i></p> <p><b>T: “I have 2 ones left over and I want to add 4 more ones. 2 plus 4 equals <math>\underline{\quad}</math>? Every one say it together.”</b></p> <p><i>S: will say “6” as a class.</i></p> <p><b>T: “Good job, 2 plus 4 is 6. Now let’s add the tens and the ones. 3 tens or 30 plus 6 equals, 36. I will write that on the board. Please read the addition sentence to your neighbor.”</b></p> <p><i>S: will read, “32 plus 4 equals 36” to their neighbor.</i></p> <p><b>T: “Today, you will learn how to record your work using a two-digit addition frame.”</b></p> <p><b>Introduction to New Material (Direct Instruction) : (7 minutes)</b></p> <ul style="list-style-type: none"> <li>Draw a two-digit addition frame on the board (look at page 217 for an example).</li> <li>Distribute connecting cubes to pairs of students.</li> <li>Write <math>16 + 8</math> on the board.</li> </ul> <p><b>T: “Look at the problem on the board. 16 plus 8. Let’s use the cubes to add the two numbers. How many tens can we make out of 16?”</b></p> <p><i>S: will respond, “1.”</i></p> <p><b>T: “Please make one group of ten.”</b></p> <p><i>S: will make one group of ten.</i></p> <p><b>T: “How many are left over? Show me with your fingers.”</b></p> <p><i>S: will show 6 fingers.</i></p> <p><b>T: “Yes, there are 6 ones left over. Please add the 6 loose cubes with the 8 loose cubes. Can you make any tens?”</b></p>		

S: *will respond, "yes" or "no."*

T: **"You can make a group of ten. Please make that group of ten."**

S: *will make another group of ten.*

T: **"How many tens do you have? Count them for me."**

S: *will count, "10, 20" or "1, 2."*

T: **"You're right, you have 2 groups of ten and how many loose ones?"**

S: *will respond, "4."*

T: **"Let's count them all together, 10, 20, 21, 22, 23, 24. 24 cubes."**

S: *will count with the teacher.*

T: **"So, how do we write what we just did in the addition frame on the board? I am going to write the addition sentence in the addition frame."**

- Write  $16 + 8$  in the addition frame on the board.

T: **"When we use the addition frame to add we have to FIRST add the ones. The ones are on the right."**

- Point out the ones place on the addition frame.

T: **"What is 6 plus 8? Use your connecting cubes again. How many tens and how many ones left?"**

S: *will work together to show 1 tens and 4 ones.*

T: **"We have 1 tens and 4 ones. I will write 4 under the ones place like this."**

- Write 4 in the ones place on the addition frame, also put the loose cubes under the ones.

T: **"I still have this tens. I am going to put that with the tens place. I will write a 1 in this box above the tens."**

- Write one in the box above the tens and put the group of ten below the tens place.

T: **"What is 1 plus 1?" Show me with your fingers"**

S: *will show 2 with their fingers.*

T: **Good job, did we regroup?"**

S: *will respond, "yes."*

T: **"Yes, we did regroup."**

#### **Guided Practice: (12 minutes)**

*Use the modeling cycle:*

Teacher Does:

T: **"Now it is your turn to practice with a partner. I will give each group page 217 and one deck of number cards. Let me show you what I want before you begin."**

T: **"To begin I will write a addition frame on the board."**

- Write an addition frame on the board.

T: **"Then I will pick a number between 25 – 29. I choose 26. I will write that in the addition frame."**

- Write 26 in the addition frame.

T: **"Now I am going to choose a number card. I chose the number 7. I will write 7 in the ones place below the 6 in the addition frame."**

- Write 7 below the 6 in the addition frame.

T: **"Now, we get to add 26 plus 7, where do we start? Do we start in the ones place or the tens place?"**

- Point at the ones place and the tens place as you ask the students.

S: *will respond, "ones place" or "tens place."*

T: **"We start with the ones place. What is 7 plus 6? Work with your neighbor to find the answer. You may use the connecting cubes if you need them."**

S: *will work together to add 7 plus 6."*

T: **"What is 7 plus 6? If I use the connecting cubes I will first make ten. I have made one group of ten. How many loose ones do I have? Show with your fingers."**

S: *will show 3 with their fingers.*

T: **"I have 3 ones, I will put them under the ones and I will write 3 in the ones."**

- Write 3 in the correct spot in the ones column and put the loose cubes under the ones column.

T: **"I still have one group of ten. I will write one in the box above the tens and put the cubes below the tens. What is one plus 2?"**

S: *will respond, "3."*

T: **"Yes, one plus two is three. Let's read the problem together. 26 plus 7 equals 33."**

S: *will read, "26 plus 7 equals 33."*

1 Students Does With Teacher:

T: **"Now I need 1 student to help me."**

- Teacher will choose a student.

**T: "I need you to help me to do the next problem. Will you pick a number between 25 – 29? Then, write it in the addition frame."**

*S: will choose a number between 25 – 29 and write it in the addition frame.*

**T: "Good, now I will draw a card and write it on the addition sentence."**

- Write the number in the ones place.

**T: "We need to add. Where do we start? The ones place or the tens place?"**

*S: will respond, "ones place"*

**T: "Let's work together to add. We can use the connecting cubes."**

- Teacher and student work together to add.

**T: "Now that we have the connecting cubes ready, let's add the ones."**

- Student and teacher will add the ones.

**T: "Now, let's add the tens."**

- Student and teacher will add the tens.

**T: Good job, read the addition sentence with me!"**

*S: will read the addition sentence with the teacher.*

**T: "Thanks for your help, you may sit down."**

2 Students Do:

**T: "Now I need two helpers."**

- Teacher will choose two students to come up and help.

**T: "Please show the class how to do the activity. Student number one I need you to pick a number between 25 -29 and write it on the addition frame on the board."**

*S: #1 will write a number between 25 -29 on the addition frame on the board.*

**T: "Student number 2 I need you to pick a card from the deck and write it on the addition frame."**

*S: will pick a card and write the number on the addition frame on the board.*

**T: "Now what? Do you add the ones or the tens first?"**

*S: will respond, "the ones."*

- Students will continue to solve the problem.

**T: "Thank you for your help. Now you may sit down."**

All Students Do:

**T: "Now it's your turn! I will give each group a paper and a deck of cards. You will need to complete 3 more problems. You will have 6 minutes."**

*S: will do the activity.*

- Teacher will walk around the room helping and guiding groups as needed.

**T: "10, 9, 8, 7, 6, 5, 4, 3, 2, 1. Time is up. Please clean up the connecting cubes and turn in your papers, then sit on the floor."**

- Collect the papers.

**Independent Practice: (10 minutes)**

**T: "Now it is your turn to practice individually. We will do the first one together and then you will finish the rest by yourself."**

**T: "I have the problem written on the board, 57 plus 7 equals what? Do we add the ones or the tens first?"**

*S: will respond, "the ones."*

**T: "Yes, we add the ones first. What is 7 plus 7?"**

- Teacher will use the connecting cubes.

**T: "Raise your hand if you know what 7 plus 7 is."**

*S: raise their hands and say "7 plus 7 equals 14."*

**T: "How many groups of 10 can we make with 14?"**

*S: will shout out, "1."*

**T: "How many loose ones do we still have?"**

*S: will respond, "4."*

**T: "So, will write 4 in the ones and move the ten to the box about the tens."**

- Write 4 in ones and the ten in the box above the tens.

**T: "What is 1 plus 5? Show me with your fingers."**

*S: will show 6."*

**T: "Very good, very good, read the addition sentence to your neighbor."**

*S: will read, "57 plus 7 equals 64" to their neighbor.*

**T: "Did we need to regroup? Thumbs up or down."**

*S: will show thumbs up.*

**T: "We did need to regroup. Now it is your turn to do the rest of the problems. You will have 8 minutes."**

*S: will work on the rest of the problems.*

**T: "10, 9, 8, 7, 6, 5, 4, 3, 2, 1. Time is up. Please clean up the connecting cubes and turn in your papers, then sit on the floor."**

- Collect the papers.

**Closing: (8 minutes)**

- Pass out whiteboards, erases and markers.

**T: "To finish up today I am going to read you a story problem. As I read it I will draw it on the board and I want you to write the information on your board. To start with, write an addition frame on your board."**

*S: will write an addition frame on their board.*

**T: "There are 32 white flowers. Write 32 on your addition frame. Then show me."**

*S: will write 32 on their addition frame and show the teacher.*

**T: "There are 4 pink flowers. Write 4 on your addition frame. Then show me."**

*S: will write 4 on their addition frame and show the teacher.*

**T: "How many flowers are there in all? Find the answer."**

*S: will find the answer.*

**T: "Show me your boards. Good job. 32 plus 4. First I add the ones 2 plus 4 equals 6. I will write that in the addition frame."**

- Write 6 at the bottom of the ones column.

**T: "3 plus nothing or 0 equals 3. I will write that in the tens places."**

- Write 3 at the bottom the tens column.

**T: "Did you get the same answer as me? Show me your boards one more time."**

*S: will show the teacher their boards.*

**T: "Good job today!"**

**Assessment:**

**Guided Practice**