Adding and Subtracting 0, 1, & 2



Mini Lesson

Learn the Foundational Facts

The scripted questions follow the sequence of events in *The Napping House*. The characters are referred to as granny, child, dog, cat, mouse, and flea.

Begin with a brief discussion about counting.

- What do you know about counting?
- When have you counted?
- Have you counted forward?
- Backward?
- How might you go about finding out how many?

Ask students about the characters and story from **The Napping House.**

- What happened in the story?
- Did the ideas of more/less come up in the book **The Napping House?**

Counting on (one more, two more) and counting back (one less, two less) are two strategies we can use to figure out how many.

Let's start with the beginning of the story which begins with a granny, child, and dog sleeping in their own spots until the child wanders out the chair and onto the cozy bed with the granny. Next, the dozing dog wakes from his nap and joins the snoring granny and the dreaming child. How many are in the cozy bed?

Now and throughout the lesson, invite students to model the problem using counters and the double ten frame on their placemat. Be sure to also display a separate frame and counters for the class. Start with two counters in the top ten frame (to represent granny and child). Place an additional counter in the bottom ten frame (to represent the dog).

Teacher Tip

As written, the mini lesson will take much longer than 5-10 minutes. Students will require several sessions to engage in the provided games. Breaking the mini lesson into smaller pieces is suggested and will help to provide a context for students as they begin their work each day.



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Mini Lesson (cont.)

The separation of the two quantities can also be shown by using two color counters. However, the act of moving a counter from the bottom to the top frame supports students in the "join" action associated with the meaning of addition.

- How might we show on the double ten frame that the dog has joined?
- Now how many are sleeping in the cozy bed?
- How might we represent the story with numbers and symbols?

Using your counters and ten frames, work with your partner to show this part of the story. Who would like to show us how they represented this part of the story using counters on the ten frame?

If needed, encourage the students to place two counters onto the top ten frame. If students do not suggest 2 + 1 = 3, record it and have discussion. Students may say or represent their ideas with words, numbers, and/or symbols. Accept all student responses. For example, students may suggest 1 + 2 = 3. Providing time for all students to support and defend their ideas should be a regular consideration.

We can represent this with numbers and symbols, 2 + 1 = 3.

- What part of the story is represented by the 2? The 1? The 3?
- What about the addition sign? The equal sign?

Check that students are able to connect each part of the equation to the situation. Continue to display the work and record the accompanying equations on chart paper or whiteboard throughout the lesson as characters join/leave.

We want to know how many are sleeping in the cozy bed after the dog joined, so we counted on. Two...three. Three are sleeping in the cozy bed. Let's take a look back at page 9 and see if there are three sleeping in the cozy bed.

Teacher Tip

Help students connect each part of the equation to the situation. Continue to display the work and record the accompanying equations on chart paper or whiteboard throughout the lesson as characters join/leave.



Mini Lesson (cont.)

The following questions will give students an opportunity to consider the meaning of an equation in the context of the story.

- What part of the story might be represented by 3 + 0 = 3?
- How does 3 + 0 = 3 look on a ten frames?

Invite student volunteers to model the problem using counters and ten frames.

- Who is represented by the counters on the ten frames?
- What is the addition sign representing?
- Why is there a zero in our equation?
- What is the equal sign showing?
- What part of the equation represents the sleeping characters?
- Why have we used an addition sign instead of a subtraction sign?

How does the illustration on page 9 of the book represent 3 + 0 = 3?

Let's take a look at page 13 to see what happened later in the story.

- How many animals are sleeping in the cozy bed?
- What if the dozing dog decides to leave?

Invite student volunteers to model the problem using counters and ten frames for the class to see. Encourage students to represent the animals who are sleeping on their own ten frames. On page 13, the dog, cat, and mouse are all sleeping in the cozy bed.

- If the dog leaves, how many animals are sleeping in the cozy bed?
- How can we model what is happening with our ten frames and counters?
- What equation might we use to represent the dog leaving the stack of sleepers? (3 - 1 = 2)



Mini Lesson (cont.)

Three animals were sleeping and the dog left. We counted back, three...two. Two animals are still sleeping. Three subtract one is the same as two.

What happened on page 15? Granny, child, dog, cat, and mouse were sleeping. The flea joins the fun and jumps on top of the pile. For just a moment, all of the characters are sleeping.

- How might we represent that no one left the sleeping stack?
- How might we represent this part of the story with numbers and symbols?
- Will we count on? Count back? Something else?

Six were sleeping and zero left. There are six sleeping characters. 6 - 0 = 6

Counting on and counting back are sometimes used when we are adding or subtracting zero, one, or two. In today's worksop, you are going to play some games with a partner. Let's first learn how to play each game and then you will have the opportunity to practice adding and subtracting zero, one, and two. You might count on, count back, or even discover a different strategy to use!



Workshop

Practice the Foundational Facts

Introduce the game(s) and consider playing a few rounds to demonstrate for the students how to play.



Today you will play a game with a partner. You will have the opportunity to

practice the strategy of counting on and counting back. While you are playing, I will walk around to observe and listen to you as you have conversations with your partner about your thinking.

Teacher Tip

Ask students to connect each part of the equation to the situation by displaying equations on chart paper or white board.

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Workshop (cont.)

Move Your Dot: Addition

Students need their own dot counter and will share the 0-10 number path with a partner. Each pair will use a spinner and game wheel with sections labeled + 0, + 0, + 1, + 1, + 2 and + 2. Students start their dots on 0 and take turns moving the number of spaces as indicated by the result on the spinner. Whichever player moves their dot to 10 first is the winner. Students do not have to land exactly on the end space.

Move Your Dot: Subtraction

Students need their own dot counter and will share the 0-10 number path with a partner. Each pair will use a spinner and game wheel with sections labeled - 0, - 0, - 1, - 1, - 2 and - 2. Students start their dots on 10 and take turns moving the number of spaces as indicated by the result on the spinner. Whichever player moves their dot to 0 is the winner. Students do not have to land exactly on the end space.

Move Your Dot: Mixed Practice

Students need their own dot counter and will share the 0-10 number path with a partner. Each pair will also need one spinner and game wheel with the sections labeled: + 0, - 0, + 1, - 1, + 2, - 2. Students start their dots on the 5. Take turns spinning the spinner and moving the appropriate number of spaces up or down the number path. The first dot to reach either end of the number path is the winner. Students do not have to land exactly on the end space.







Formative Assessment

Spend time observing and listening as students are playing the games. Questions can be asked to make the distinction between possible strategy use and students who "just know".

- How do you know?
- Is there a different way to determine the answer?

Record data on an observation checklist like the one provided.

Notice whether the students are counting, reasoning or have reached mastery. Students may even demonstrate a combination of counting, reasoning or mastery within any set of facts being monitored. Having student thinking documented is important for future instruction.

Student understanding of commutativity may also be assessed as you observe students playing the games.



Closure

Reflect on the Foundational Facts/Apply

Ask students to reflect on the game(s) they played. This can be done verbally or you can invite students to respond in writing/drawing.

- How did it go today?
- What did you notice?
- How might you explain counting on or counting back to someone?
- What operations did you use?
- How else might we use addition or subtraction?

Create a class chart to showcase student ideas and reflections around **Adding and Subtracting 0, 1, & 2**.



Supplemental Activity

One More, One Less, Two More, Two Less

Provide students with a **One More**, **One Less**, **Two More** or **Two Less** mat and coordinating cards. For example, on the **One More** mat, students will work to place the numeral 9 on the 8, the 5 on the 4, etc. as quickly as possible. If needed, encourage students to use the dot(s) in the corner to count on or to count back.

Teacher Tip

Although automaticity is the focus of this activity, students may also benefit from writing and discussing the resulting equations after placing the cards.

Note: Each deck includes 11 cards (0-10), nine of which will be used.



Basic Facts: Addition & Subtraction