

Math: Grade 1, Lesson 9, *Find the Unknown Number*

Lesson Focus: The purpose of this lesson is for children to explore how to solve a subtraction problem with the change unknown. The purpose of this problem is for children to interpret another type of word problem and explore how to solve it using equations with missing numbers.

Practice Focus: Students will model addition and or subtraction problems with counters or pictures, relate to an equation with a missing number, and then solve another problem.

Objective: Students will determine the unknown whole number in an addition or subtraction equation relating three whole numbers.

Key Vocabulary:

- equal sign (=)
- equation

TN Standards: 1.OA.D.8

Teacher Materials:

- Number path
- 10 connecting cubes (optional)
- Paper
- Markers
- Document Camera
- Student Practice Packet

Student Materials:

- Paper and a pencil, and a surface to write on
- Number paths

Teacher Do	Student Do
<p>Opening: (1 min.) Hello! Welcome to Tennessee's At Home Learning Series for math! Today's lesson is for all our 1st graders out there, though all children are welcome to tune in. This lesson is the ninth in our series.</p> <p>My name is ____ and I'm a ____ grade teacher in Tennessee schools! I'm so excited to be your teacher for this lesson! Welcome to my virtual classroom!</p> <p>If you didn't see our previous lesson, you can find it on the TN Department of Education's website at www.tn.gov/education. You can still tune in to today's lesson if you haven't seen any of our others. But, it might be more fun if you first go back and watch our other lessons since we'll be talking about things we learned previously.</p> <p>Today we will be learning about how to use a number path to find missing numbers in addition and subtraction equations! We</p>	<p>Students get materials ready for the lesson: Paper Pencil Number paths</p>

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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2. $13 - 7 = \underline{\hspace{2cm}}$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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Let's take a look at our first problem. The problem states 6 plus 7 equals some number. How can we use addition to find the missing number?

[Pause]

Let's count on to find the missing number. Circle the number 6 on your number path with me because that is the first number in our equation.

[Teacher circles number 6.]

Now we will make 7 hops on our number path because our equation tells us to add 7 to 6. Make your hops with me.

[Teacher makes 7 hops on the number strip to land on 13.]

[Pause]

Did you get 13? That's right!

[Pause]

Objective 2: Explicit Instruction, Example(s), Guided Practice

Now we are ready to do our second problem. I will read a problem out loud that has a missing number. Our job is to discover what that missing number is.

Next, let's take a look at 13 minus 7 is equal to some number. How can you use the first problem to find the missing number in this problem?

[Pause]

Yes! We could solve this problem by hopping forward or hopping backwards.

I think I will find the missing number by hopping forward on my number path. You use your number path to find your missing number as well.

[Teacher circles 7 on the number strip and counts up 6 hops to land on 13.]

How many hops did we take away from 7 to 13?

[Pause]

Objective #2:

Students will be building off of their work within 10 and utilizing addition and subtraction strategies to find a missing number in a problem. Numbers to 20 will be introduced. Number strips will be expanded from 10 units to 15 units.

Tying the learning together:
Students will listen to the teacher do a think aloud solving a problem from the start of the problem through finding the solution using a number strip for the first time.

<p>That's right.... 6!</p> <p>[leave model of counting on for 13-7 visible for reference later on - do not erase/discard]</p>																
<p><u>Guided Practice</u> (13 min.)</p> <p>[I do – A think aloud where the student works alongside the teacher]</p> <p>Let's use the same problem but this time, let's use subtraction to solve the problem.</p> <p>[Teacher rereads problem]</p> <p>13 - 7 = _____</p> <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr></table> <p>This time, I will start on my number path at 13. You follow along with me. [Teacher circle 13 on the number path]</p> <p>Next, I will count back 7 hops from 13.</p> <p>[Teacher models counting back 7 hops from 13; drawing hops as he/she moves from 13 back 7 hops.]</p> <p>Where did we land?</p> <p>[Pause]</p> <p>6! When we hopped back 7, we landed on 6. That means 6 was our missing number.</p> <p>Great Job!</p> <p>[Teacher fills in blank 13 - 7 = <u>6</u>]</p> <p>You just used what you know about addition to help you solve a subtraction problem.</p> <p>[We do - Intentional pauses for student to do work and then receive answers along the way]</p> <p>Great! We are ready for our next problem. We will be using our number path to find our missing number.</p> <p>[Teacher posts problem as written]</p> <p>14 cherries are in a snack bag.</p> <p>Maddie eats some.</p> <p>Now there are 9 cherries.</p> <p>How many cherries did Maddie eat?</p>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	<p>Students will listen to the teacher do a think aloud solving a problem from the start of the problem by finding the solution using the number strip strategy.</p> <p>Students will follow along with the teacher to model a problem from the start of the problem through finding the solution.</p>
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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What tools can we use to help us find the missing number?

[Pause]

Yes! We can use our number path to count on or count back to find the missing number.

How many cherries does Maddie start with?

[Pause]

Yes. Maddie has 14 cherries in her snack bag. Let's write an equation to model our problem.

[Teacher writes 14 under problem]

What happens to the number of cherries when she starts eating them?

[Pause]

That's right. Her number of cherries gets smaller because she takes cherries from the bag and eats them. That means we can model our problem with subtraction.

[Teacher draws a minus sign after the 14;

14 - _____ = 9].

Now, let's use our number path to show counting back. Where should we start?

[Pause]

Did I hear you say 14? Let's draw a circle around the number 14. Let's count back stopping at 9 because Maddie has 9 cherries left in her bag. You draw your hops along with me.

[Teacher models starting at 14 and draws counting back 5 hops]

When we counted back to the number 9, how many hops did we make?

[Pause]

Did you get 5?

Fantastic job counting back to find the missing number!

[Do not fill in the blank at this time...teacher will show you can find missing number using addition in next example]

Now, how can we use addition to find the missing number in this problem?

[Pause]

That's right. We can count on from the number 9 to find our missing number.

Let's use our number path to help us find the missing number.

First, let's draw a circle around the number 9. You use your number path to draw a circle around the number 9.

[Teacher models drawing circle around the number 9]

What should we do next? Will we count on or count back to find our missing number?

[Pause]

That's right. We will count forward to find the missing number because we can use addition to help us solve subtraction problems. You draw your hops on your number path along with me.

[Teacher models counting forward 5 hops from the number 9 to land on 14.]

How many hops did you draw?

[Pause]

Did you get 5?

Wonderful job counting on to find the missing number.

Number paths are quite fun, aren't they? They let us have a choice of counting on or counting back to find missing numbers.

[You do - The student independently working and then the teacher showing their work and answer.]

For the last problem, you will be doing a missing number problem all by yourself. Follow along as I read the problem.

[Teacher posts problem as written]

15 basketballs are on the court.

Some roll away.

Now there are 8 basketballs on the court.

How many basketballs roll away?

$$15 - \underline{\hspace{2cm}} = 8$$

Use your number path to find the missing number. Remember, you can count on or you can count back.

[Teacher pauses to allow students time to model on their own.]

Are you ready?

[Pause]

Hop on one foot if you counted on.

[Pause]

Clap your hands if you counted back.

[Pause]

Alright. That was fun!

Did you get 7 as your missing number?

[Pause]

Students will solve a problem independently from the start of the problem through finding the solution. Teacher will share solution.

[Teacher writes $15 - \underline{\quad} 7 \underline{\quad} = 8$]

Did you get your equation to be 15 minus 7 equals 8?

You're right! Keep up the good work!

[Additional problems as needed]

$8 + \underline{\hspace{2cm}} = 14$

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$15 - \underline{\hspace{2cm}} = 9$

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Independent Practice (3 min.)

Great work! Today, we reviewed how to find a missing number using addition and subtraction. I hope you're seeing some connections to our counting on and counting back strategies that we used last week! You sure did a great job! After the video, you will have some problems practicing on your own. Good luck and do your best! I will show you the independent practice problems now, or you can find them in the student practice for this lesson posted on our website, www.tn.gov/education.

[Teacher shows student practice page under document camera or camera zooms in on student practice page.]

1. $15 - \underline{\quad} = 9$

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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2. $\underline{\quad} + 6 = 14$

PBS Lesson Series

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<p>Closing (1 min.) I enjoyed reviewing how to find a missing number in an equation with you! Thank you for inviting me into your home. I look forward to seeing you in our next lesson in Tennessee's At Home Learning Series! Bye!</p>																															

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