PBS Lesson Series

Math: Grade 1, Lesson 7, *Find the Unknown Number*

Lesson Focus: Learning to use addition and subtraction strategies to find the missing number in an equation.
Practice Focus: Students will act out or model addition and 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:

- 8 red/yellow counters
- 8 additional items to serve as counters (ex: beans, skittles, spoons, leggos, straws, etc that might be common household items)
- Paper
- Markers
- Document Camera
- Student Practice Packet

Student Materials:

- Paper and a pencil, and a surface to write on
- Counters/household items (8 items needed)

Teacher Do	Student Do
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 seventh in our series.** **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!** **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.** **Today we will be learning about how to use addition and subtraction strategies to find the missing number in an**	Students get materials ready for the lesson: Paper Pencil Household items to serve as counters (8 items needed)

equation in mathematics! Before we get started, to participate fully in our lesson today, you will need: ● **Paper** ● **a pencil** ● **a surface to write on** ● **red/yellow counters** **Ok, let's begin!**	
<u>Intro</u> (3 min.) **To get ready for our lesson today, let's get our workspace ready.** [Teacher models laying out paper, and red/yellow counters. Options of counters, such as beans, skittles, spoons, Legos, straws, etc. that might be common household items]. **I am going to lay out some paper and pencil on my writing surface. You lay out your paper and pencil too.** [Pause] **You will also need 8 items for counters today.** **A lot of things in your home can be used for counters.** **Today, I have brought some things from my home.** [Teacher lays out items such as beans, skittles, pencils, spoons, Legos, straws, etc. that might be common household items easily found by students]. **Before we get started, I will give you a moment to find your counters to use for today's lesson on missing numbers.**	Students set up work space with needed items.
<u>Teacher Model</u> (10 min.) <u>Objective #1: Review/Background/Tying to previous learning, Example(s), Guided Practice</u> **For our first problem, let's practice finding a missing number for a sum up to 10. This will help us prepare for working with equations where there may be unknowns in any position.** [post problem and directions as seen below] Find the missing number. 4 + _____ = 10 **Let's take a look at our first problem. The problem states, 4 plus some number equals 10. How can we find the missing number?** [Pause]	Objective #1: Students will be reviewing using counting on to find a missing number within 10.

We could use the strategy of counting on to find the missing number. Let's count on from 4. You touch your head and say 4. Then, count on with me. [Teacher models 'holding' 4 on head and then counts on 6 more with fingers to land at 10] **4 . . . 5 - 6 - 7- 8 - 9 - 10.** **How many did we add to find the missing number?** [Pause] **That's right…. 6!** **Let's check our answer with a model. You can draw along with me.** **First, I will draw 4 tally marks to represent the first number in our equation…. 1-2-3-4.** [Teacher draws 4 using tally marks counting as she goes.] **Did you draw your 4 tally marks?** **Great!** **Now, let's count on using tally marks until we get to the number 10. You draw your tally marks along with me.** [Teacher touches the 4 tally marks and models counting by drawing six additional tally marks as he/she counts.] **4 …. 5 - 6 -7 - 8 - 9 - 10.** **How many tally marks did we add to find our missing number?** [Pause] **Did I hear you say 6?** **Yes! We added 6 tally marks to 4 in order to make 10.** **That means our missing number was 6!** **You did it!** <u>Objective 2: Explicit Instruction, Example(s), Guided Practice</u> **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.** [Teacher post problem as written Tom has 3 jelly beans in his lunchbox. His friend gives him some more. Tom now has 8 jelly beans. How many jelly beans does Tom have now? 3 + _____ = 8] **I am going to read the problem out loud. You read along with me. Remember, we are looking to find the missing number.** [Teacher reads posted problem.]	Objective #2: Students will be building off of their work within 10 and utilizing subtraction to find a missing number within 10. Tying the learning together: Students will listen to the teacher do a think aloud working a contextual problem modeling the thought

Tom has 3 jelly beans in his lunchbox. **His friend gives him some more.** **Tom now has 8 jelly beans.** **How many jelly beans does Tom have now?** **3 + _____ = 8** **Let's go back to the problem and see how many jelly beans Tom has in his lunchbox. You read the first sentence to see how many jelly beans Tom has in his lunchbox.** [Pause] **That's right, Tom has 3 jelly beans in his lunchbox.** **Let's act the problem out using our red and yellow counters.** [Teacher lays out 3 yellow counters under document camera] **I laid out 3 yellow counters to represent the three jelly beans.** **The second sentence tells us his friend gave him some more jelly beans.** **Do you think this could be our missing number?** [Pause] **Yes! Because his friend gave more jelly beans to him and we don't know what that number is.** **The next sentence tells us he now has 8 jelly beans.** **I am going to add some red counters until I have 8.** **You follow along with me and do the same with your counters.** [Teacher models adding one red counter at a time to a group of 3 yellow counters.] **What did you do with your counters to show the number of jelly beans that were given away?** [Pause] **Does your model look like mine? I added these** [point to new group] **red counters to show the jelly beans Tom's friend gave to him.** [Teacher points to group of 5 red counters] **Tom has 8 jelly beans altogether. How many jelly beans did Tom's friend give him?** [Pause] **Let's count the red counters we added to find the missing number. Count with me.** [Teacher counts 1 - 2 - 3 - 4 - 5] **1 - 2 - 3 - 4 – 5**	process for a problem from the start of the problem through finding the solution.

5! Tom's friend gave him 5 jelly beans. Now we can fill in our equation because we know 5 is the missing number in our addition equation. [Teacher fill in 5 in the blank] **Let's read the equation together.** **3 plus 5 equals 8.** **Great job!**	
<u>Guided Practice</u> (13 min) [I do-Think aloud where the student works alongside the teacher] **For our next missing number problem. I want you to follow along with me.** [Teacher posts problem as written] **5 lions are drinking.** **More lions join them.** **Now there are 9 lions.** **How many lions joined.** **5 + _____ = 9** **Like in our last problem, we know there are 5 lions. I will lay my 5 counters here.** [Teacher lays 5 yellow counters down] **What is the question I am trying to answer?** [Pause] **Yes! I am trying to find how many lions joined 5 lions.** **I want to find my missing number.** **Let's use our model to show how many more lions joined.** [Teacher models adding 4 red counters.] **We added 4 red counters. 4 must be my missing number.** **I will put 4 in the addition equation to represent the missing number.** [Teacher fills in blank 5+ <u>4</u> = 9] [We do- Teacher has intentional pauses for students to do work and then receive answers along the way] **Great! We are ready for our next problem.** [Teacher posts problem as written] **Jared has 6 pens.** **His mother gives him some more pens.** **Now Jared has 10 pens.** **How many pens did Jared's mother give him?**	Students will listen to the teacher do a think aloud working a contextual problem modeling the thought process for a problem from the start of the problem through finding the solution. Students will follow along with the teacher to model a contextual problem from the start of the problem through finding the solution.

How is this problem like the last problem? [Pause] **This problem is about pens instead of lions. But we are still finding a missing number. This is an addition problem.** **How did we find the missing number in the last problem?** [Pause] **I am going to lay out 6 yellow counters to represent the 6 pens. You lay out 6 counters.** [Pause] **Next, I am going to add red counters to show the number of pens given to Jared by his mom. I will add red counters until there are only 10 counters in all. Can you add your counters too?** [Teacher models adding 4 red counters] **What in our model will help us find the missing number?** [Pause] **The missing number is the red counters we added. Let's count to see the number of red counters we added.** [Teacher counts aloud] **1 - 2 - 3 - 4** **That must mean that Jared's mom gave him 4 pens.** **Let's look at our addition equation again. What missing number can you write to make the equation true?** [Pause] **How do you know?** [Pause] **Yes! The missing number is 4 because we added 4 red counters to 6 yellow counters.** [You do-Students independently working and then the teacher showing their work and answer] **For problem #3, you will be doing a missing number problem all by yourself. Follow along as I read the problem.** [Teacher posts problem as written] **6 balls are in a basket.** **Sara adds some more balls to the basket.** **Now Sara's basket has 8 balls.** **How many balls did Sara add to the basket?** **Use your counters to find the missing number to show how many balls Sara added to the basket.**	Students will solve a contextual problem independently from the start of the problem through finding the solution. Teacher will share solution.

[Teacher pauses to allow students time to model on their own.] **Alright. Did you get 2 as your missing number?** **That's right. Sara added 2 balls to the basket.** **Can you write the addition equation to show how many balls Sara added to the basket?** [Pause] [Teacher writes 6 + _____ = 8. Then 6 + 2 = 8] **Did you get your addition equation to be 6 plus 2 equals 8?** **You're right! Keep up the good work!** [Additional problems if needed] [Jack has 2 candy bars. Dan gives Jack some more candy bars. Now Jack has 8 candy bars. How many candy bars did Dan give Jack?] [Joe has 5 red toys cars. His friend gives him some yellow toy cars. Now Joe has 9 cars in all. How many toy cars did his friend give him?]	
Independent Practice (3 min.) **Great work! Today, we reviewed how to find a missing number in a subtraction problem. I hope you're seeing some connections to our counting on strategy that we used last week! You sure did a great job!** **After the video, you will have some problems to practice 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.** **Bob has 2 cats.** **His Dad brings home some more cats.** **Now Bob has 6 cats.** **How many cats did Bob's dad bring home?**	

2. **There are 4 chairs at the table.** **Some more chairs are added to the table.** **Now there are 8 chairs at the table.** **How many chairs were added to the table?** **3.** **On Monday, Jim sold 6 hot dogs.** **On Tuesday, Jim sold some more hot dogs.** **Jim sold 12 hotdogs altogether.** **How many hotdogs did Jim sell on Tuesday?**	
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!**	