

THE CASE OF THE TROPHY ROOM BANDIT



YOUR MISSION:

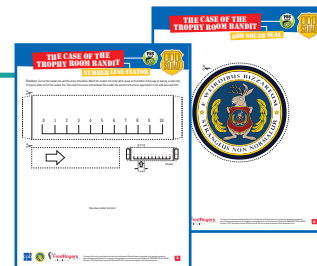
It's a case for the Odd Squad: A mystery thief is stealing objects from the Trophy Room, and only with subtraction sleuthing skills and a secret gadget from Oscar's Lab will agents be able to figure out "whodunit," crack the case and put things right again.

LEARNING GOALS:

- Explore and practice using a number line.
- Subtract from 10.
- Write subtraction equations.

MATERIALS:

- Printable [Odd Squad Number Line-inator](#) design sheet (one per child)
- Scissors (one per child)
- Beans, beads or other small items (10 for each child)
- Brown bags (one per child)
- 10 odd items to be included in the **Trophy Room**, eg., a drinking glass wearing a sock, a potato with a face drawn on, etc.
- 10 index cards
- Tape
- A plain manila folder to use as the **case file**. You can attach the [Odd Squad seal](#) (included in this packet) to the front and put the activity pages inside.



PREPARATION:

- Print the [Odd Squad Number Line-inator](#) design sheet (one per child) and make a sample number line to show the children.
- Find the Odd Squad episode **Soundcheck** (approx. 11 minutes) online at pbskids.org/learn/oddsquad/afterschool.
- Write the numbers 1-10 on index cards (one number per card).
- Gather the 10 odd items for the **Trophy Room**.
- Prepare your case file.

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IMPLEMENTING THE ACTIVITY:

- Help the children settle down by completing a fun, focusing task that explores subtraction: **Ms. O Says Subtract!** In this game that's similar to Simon Says, Ms. O's in charge, and what she says goes! Have everyone stand up with both hands extended and all fingers out. Starting each command with "Ms. O Says Subtract," have the children subtract fingers (put them down), arms (hide behind their backs), a leg (balance!), etc. But if the command doesn't come from Ms. O herself and children obey, they're out!
- Once the children are focused, view the episode **Soundcheck** with your group. Before you begin, ask the children to pay attention to ways that Olive and Otto use subtraction to crack the case; review their strategies after you watch.
- Let the children know that you've received a letter from the head of Odd Squad, Ms. O. Explain: *The Odd Squad needs our help. Are you ready to crack a math case?* Read the **letter from Ms. O** aloud (below).
- Engage the children in **Training** and **Casework**, then celebrate with a **Case Closed** learning recap (following pages).

Letter from Ms. O

Agents! There you are! Something very odd has happened. The town's oddest objects are all in danger. Nobody panic, but someone with a love of "odd" has been taking treasures from the Trophy Room. There are only 10 items left in our collection, and the thief is still at it. Next time this sneaky suspect steals our stash, you'll need to do some sleuthing to figure out which visitor has been leaving with our most prized possessions. All we know is, he or she seems to be stealing his favorite number of items each time. So, are you on the case? Then hurry, because Odd Squad needs you!



TRAINING:

1. Tell the children that in order to crack **The Case of the Trophy Room Bandit** they will need to know how to subtract numbers from 10. Explain: *Just as we saw in the video, subtraction means taking something away—exactly as this sneaky visitor has done!*
2. Break the children into pairs and give each child a copy of the [Number Line-inator](#) design sheet (a special gadget from Oscar's lab!), as well as a paper bag, scissors, and 10 beans, clips or other small items.
3. Show your example Number Line-inator and read aloud the instructions on the printout. Ask each child to make his or her own Number Line-inator.

continued

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TRAINING CONTINUED:

4. Demonstrate how to use the Number Line-inator. Write the equation $10 - \underline{\quad} = 6$ on the board. Place the arrow over the 10, then move the arrow to the 6, counting how many numbers you go back: 9, 8, 7, 6. Guide the children to see that you went back four spaces or numbers, which means $10 - 4 = 6$. Write up a few more subtraction equations for the children to figure out.
5. Now have one partner within each pair place 10 beans or chips in his bag and close his eyes. Ask the other partner to steal a few of the beans/chips. Now have the child open his eyes and use the number line to figure out how many beans were taken by subtracting the amount remaining from the number 10.
6. Invite the children to continue playing this game. They can experiment with the number line in other ways by starting with fewer than 10 objects. Ask them to write out each subtraction equation that they solve on the back of their paper bags.

CASEWORK:

1. Have the children sit in a circle and let them know that it's time to crack The Case of the Trophy Room Bandit. Remind them: *Ms. D told us that a visitor is taking items from the Trophy Room, and the thief seems to be stealing his or her favorite number of items each time. That means that if the visitor's favorite number is seven, he or she is going to take seven items. That's the only clue we have to help us crack this case!*
2. Pass out the 10 cards. Explain: *If you have a card, you will be a visitor to the Trophy Room. These number cards tell you your favorite number.* Go around the circle and ask each child to call out the number on his or her card, by completing the sentence: *My favorite number is _____.* Children without a number card will be agents.
3. Create the Trophy Room by placing 10 odd items in the center of the circle. Explain that everyone will close their eyes as you choose a visitor to come into the circle and take odd items. The number of items the visitor takes should total his or her favorite number (as written on the card). Say: *If your favorite number is three, you will take three items.* The visitor should then quickly hide the items around the room.
4. Play! When the chosen mystery thief has completed the task, say: *OK, everyone! Open your eyes, agents; we have a case to crack!*
5. Together, count how many items are left. Then create an equation on the board to help the agents figure out how many items were taken, for example $10 - \underline{\quad} = 7$. As they did before with the items in the bag, children should use their number lines and count down from 10 to determine how many items are missing.
6. Once the agents have figured out the number of items that were taken, they can identify the visitor thief! For example: *We know that four items went missing; who's wearing the number card that says his or her favorite number is four?*
7. Review with the children which items appear to be missing, then hunt around the room to find them. Count to make sure that each one has been found. Play the game several more times with different visitors, thieves and agents.

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CASE CLOSED:

Gather the children back into a group.

Say: *Great work, agents! Looks like we nabbed all of the mystery thieves. As part of our training, we like to review what we learned from the case and enter it in the case file so that future agents-in-training can learn from it.*

Ask: *What did we learn about subtraction? What are some tools or strategies we can use to help us solve subtraction problems? What are some examples of subtraction equations?*

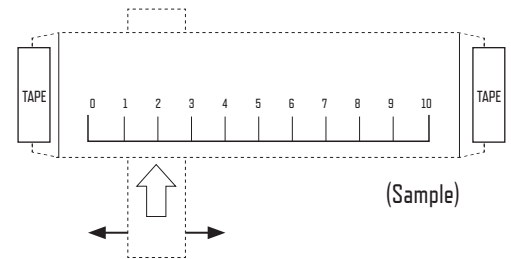
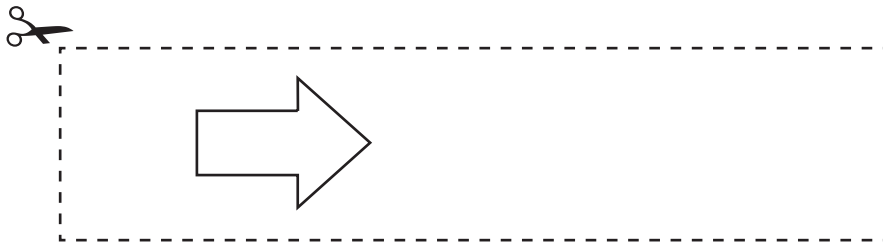
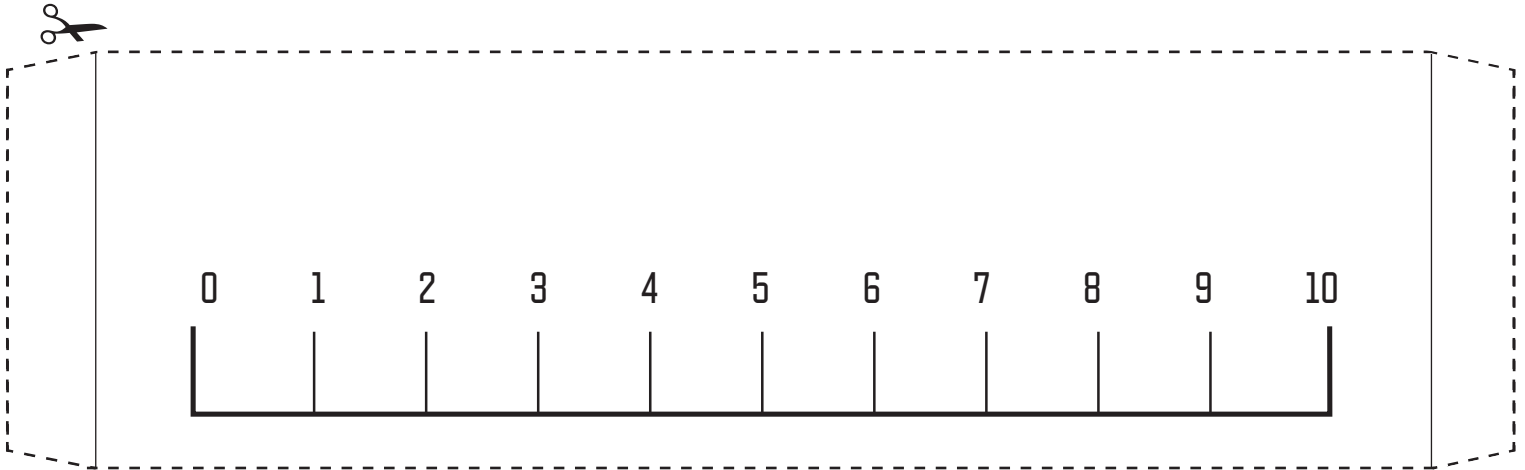
Write down the learnings/findings that the children share, close your case file and write **CASE CLOSED** across the front. Congratulate your agents on a case well-solved.

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NUMBER LINE-INATOR

Directions: Cut out the number line and the arrow strip below. Attach the number line to the white space at the bottom of the page by placing a small strip of tape on either end of the number line. Then insert the arrow strip between the number line and the instructions page behind it and slide back and forth.



(Tape down number line here.)

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ODD SQUAD SEAL



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