Hardy's Number Bond Superhero Mission!

Materials Needed

- At least 10 LEGO bricks (or other small building blocks) in two different colors (e.g., 10 red, 10 blue)
- A large piece of paper or a small whiteboard
- Crayons or markers
- A hula hoop (or a circle drawn with chalk/made with yarn)
- 10 small toys (like animal figures, toy cars, or pom-poms)

Learning Objectives

By the end of this lesson, Hardy will be able to:

- Verbally identify pairs of numbers that add up to 10.
- Physically demonstrate how to decompose the number 10 into two smaller parts using objects.
- Create and explain a visual representation (a drawing) of a number bond to 10.

Curriculum Alignment

This lesson aligns with early math standards for understanding addition and subtraction, such as CCSS.MATH.CONTENT.K.OA.A.3: "Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition with a drawing or equation (e.g., 10 = 8 + 2 and 10 = 2 + 8)."

Lesson Plan: Step-by-Step

Part 1: The Mission Briefing - What are Number Bonds? (5 minutes)

1. **Introduce the Concept:** "Hi, Hardy! Today you have a super important mission. Your mission is to help the Number Superheroes! The number 10 is the big boss, and it's made of smaller 'sidekick' numbers that always work in pairs. We call these pairs 'number bonds.' They are two numbers that are bonded together to make 10!"
2. **Visual Introduction:** Draw a simple number bond diagram on the paper/whiteboard. Draw a large circle at the top and write "10" inside. Then draw two lines coming down from it, each leading to a smaller, empty circle. "This is our map! 10 is the whole thing, and these two empty circles are for its two sidekick numbers."
3. **The First Clue:** Take 5 red LEGOs and 5 blue LEGOs. Count them together to confirm there are 10. "Look! 5 red and 5 blue are bonded together to make 10!" Write "5" in one circle and "5" in the other. "5 and 5 are number bonds to 10."

Part 2: The Main Mission - Building Number Bond Towers (15 minutes)

1. **Set the Challenge:** "Hardy, your first mission is to build as many different superhero towers of 10 as you can. Every tower MUST be exactly 10 bricks tall."
2. **Build and Discover:** Give Hardy the two piles of different colored LEGOs. Ask him to build a tower that is 10 bricks tall using some bricks from each color pile.
    - For his first tower, maybe he chooses 7 red bricks. Ask, "How many blue bricks do you need to add to get to 10?" Let him experiment and discover that he needs 3.

    - As he completes a tower, say, "Awesome! You found a new number bond! 7 and 3 make 10!" and write it on your number bond map.
3. **Continue the Hunt:** Encourage him to build several different towers. "Can you build a tower that has only 1 blue brick? How many red bricks would it need?" (1 and 9). "What about a tower with 6 red bricks?" (6 and 4). Celebrate each discovery as a new secret code he has cracked.

Part 3: Active Play - Human Number Bonds (10 minutes)

1. **Prepare the Area:** Place the hula hoop on the floor. This is the "10 Zone." Place the 10 small toys outside the hoop.
2. **Sort the Numbers:** "Now for a physical challenge! We need to help these 10 toys get organized."
    - Call out a number less than 10, for example, "8!"
    - Hardy's job is to move 8 toys *inside* the hula hoop.
    - Then ask, "How many toys are still *outside* the '10 Zone'?" He should count the remaining 2 toys.
    - Exclaim, "You did it! 8 and 2 are number bonds to 10!"
3. **Repeat:** Do this several times with different starting numbers (e.g., 3, 6, 4) to get him moving and reinforce the concept in a physical way.

Part 4: Creative Wrap-Up - Number Bond Art Gallery (10 minutes)

1. **Become the Artist:** "Hardy, you've been such a great superhero sidekick! For your final task, you get to be an artist. I want you to draw your favorite number bond to 10."
2. **Draw and Explain:** On a fresh piece of paper, ask him to draw a picture that shows a number bond. For example, if he chooses 2 and 8, he could draw 10 flowers in a garden, with 2 of them being red and 8 of them being yellow. Or he could draw 10 superhero cars, with 2 parked in a garage and 8 driving on the road.
3. **Present the Art:** Let him explain his drawing to you. "Tell me about your masterpiece. What number bond does it show?" This is a great way to see his understanding. Hang his art up in a "Number Bond Art Gallery."

Assessment

Observe Hardy's participation and understanding throughout the activities. Success is not about speed, but about comprehension.

- **Formative (During the lesson):** Can he correctly figure out how many LEGOs of the second color he needs? Can he accurately count the toys inside and outside the hula hoop? Use gentle questions to guide him if he struggles.
- **Summative (End of lesson):** Does his final drawing and explanation correctly represent a pair of numbers that make 10? This shows he can apply the concept creatively.

Differentiation and Extension

For Extra Support

- **Simplify the Goal:** Start with number bonds to 5 instead of 10. Use fewer objects to make it less overwhelming.
- **Use a Ten-Frame:** Draw a ten-frame (a 2x5 grid) and use counters. Fill some squares with one color and ask, "How many empty squares are left to make 10?" This provides a strong visual structure.

For an Extra Challenge

- **Introduce Equations:** As he builds the LEGO towers, show him how to write the matching number sentence (e.g., "7 + 3 = 10").
- **Number Bonds to 20:** If he masters 10 quickly, challenge him to find number bonds to 20.
- **Beat the Clock:** Turn the hula hoop game into a timed challenge. "You have 30 seconds to show me a number bond for 10! Go!"