

Double Decker Bus¹

Grade 1 Operations and Algebraic Thinking

Topic: Using the structure of 5 and 10

Task Background

The task builds on the structure of 5 and 10 to support students' ability to solve problems involving addition and subtraction within 20. Students are given different situations related to the double decker bus to represent and solve problems using the arithmetic rack or ten frames. The combination of a story context, tools to represent the context, and open task structure support students' ability to work fluently with numbers up to 20 including adding to, taking from, comparing, and breaking numbers apart. Example representations and/or tools could include include the physical arithmetic rack, *Number Rack* app, 10-frames, or the *Number Frames* app².

Content Standards

- » *Operations and Algebraic Thinking*
 - » Represent and solve problems involving addition and subtraction.
 - » Add and subtract within 20

Practice Standards

- » *Make sense of problems and persevere in solving them*
Students persevere to understand and solve the problem.
- » *Model with mathematics*
Students create a number sentence associated with the problem show or create representations associated with the problems.
- » *Use appropriate tools strategically*
Students show or create representations associated with the problems.

Materials

Students can use paper and writing tools, concrete and/or virtual manipulatives (Number Rack, Number Frames), and/or a screen-recording app.

¹ This task builds on the *Contexts for Learning Mathematics* series, *The Double-Decker Bus*, (Fosnot, Dolk, & Liu, 2007)

²Apps ©2005-2017 The Math Learning Center

Double Decker Bus Problem 1

My dad drives a double decker bus that has 10 seats on top and 10 seats on bottom.
12 people get on the bus. Some people are on the top level and some on bottom level.
What are two different ways they could sitting?

Pair up with a partner and talk about the problem.

Pick one of your math tools and each of you show a different way the people could be sitting.

Create a number sentence for each way you and your partner represent the problem.

How many seats are empty on the top?

How many seats are empty on the bottom?

Double Decker Bus Problem 2

My dad drives a double decker bus that has 10 seats on top and 10 seats on bottom.
14 people get on the bus. Some people are on the top level and some on bottom level.
What are two different ways they could sitting?

Pair up with a partner and talk about the problem.

Pick one of your math tools and each of you show a different way the people could be sitting.

Create a number sentence for each way you and your partner represent the problem.

How many seats are empty on the top?

How many seats are empty on the bottom?