Adding With Regrouping

Learning Objectives

Students will explain how “carrying a ten” works when adding with regrouping using the algorithm.

Grade Levels

Grade 2

Common Core Standard

CCSS.MATH.CONTENT.2.NBT.B.9

Explain why addition and subtraction strategies work, using place value and the properties of operations.[1]

[1] Explanations may be supported by drawings or objects.

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Materials Needed

- Place value mats (enough for each student or student pair)
- Word Problem Sheet
- Base Ten blocks or other base ten manipulatives

Lesson

Introduction

- Students should be fluent with adding and subtracting to "make 10" at this point. See previous lessons ***Ten More Ten Less, Making Ten Fluently***
- Remind students how to use the base ten blocks (or other base ten manipulative). Students need plenty of time to explore with manipulatives before being asked to use them in a proscribed manner. During math instructional time students need to be able to follow the expectation that blocks are for modeling numbers, not for building or playing. Students are more successful with this expectation when they are allowed other times to play and explore with the blocks.
- Give each student or student pair a set of base ten blocks and a place value mat.

Explicit Instruction/Teacher Modeling

- Give students a real world situation like the following: Jasmin has 17 crayons and then Marcus gives her 5 more. How can we show how many crayons Jasmin has now?
- Guide students to model 7 ones cubes in the Ones Place and one tens stick in the Tens Place. Then students count 5 more in their hand (or another separate place on the table, so they don't get mixed with Jasmin's original 17). Students should then place the 5 new ones cubes in the Ones Place.
- Prompt students to count how many cubes are in the Ones Place now. When students get to 10, ask if they noticed something wrong.
- Prompt students to count out ten ones cubes and then trade them in for a tens stick.
- *Identifying a group of ten individual things as "a ten" is a huge developmental step for children. Most children need lots of practice regrouping with hands-on items, and visualizing how ten ones are the exact same amount as one ten, before they are ready to move to pencil and paper regrouping alone.*

Independent Work

- Students should use the base ten blocks to model the situations in the word problem sheet. The word problems on the sheet are examples of Join: Result Unknown, Join: Change Unknown, Join: Start Unknown, Separate: Result Unknown, Separate: Change Unknown, and Separate: Start Unknown from Van de Walle (see References). Problems 1, 2 and 3 increase in difficulty level, as do problems 4, 5 and 6.
- Students who are new to regrouping often have trouble adding the new amount of cubes to the place value mat. They get confused between what was already there and what is the new amount added to the original. One way to help students add the correct amount of cubes is to have them count out the additional cubes in their hand or on the table, NOT on the mat, and then add them to the ones place. Then they can regroup a ten if necessary.

Review and Closing

- Ask students to explain their thinking and show how they solved each problem.

References

Van de Walle, J., Karp, K., & Bay-Williams, J.M. (2013). *Elementary and Middle School Mathematics: Teaching Developmentally.* NY, NY: Pearson.