

# Add and Subtract

## Summary

The students will be able to model addition and subtraction of two and threedigit whole numbers (sums and minuends to 1000) in a variety of ways.

## Main Core Tie

Mathematics Grade 1

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(1.NBT\) Standard 1.NBT.4](#)

## Additional Core Ties

Mathematics Grade 1

[Strand: NUMBER AND OPERATIONS IN BASE TEN \(1.NBT\) Standard 1.NBT.5](#)

## Materials

- [Word Problems Page](#) (pdf)  
Small objects (beans, counters, etc.)  
Book: *A Fair Bear Share*  
Math journals
- [Hundreds chart](#) (pdf)

### Books:

- *A Fair Bear Share*  
, by Stuart J. Murphy, ISBN: 9780064467148
- *10,000 Addition Problems Practice Workbook: Improve Your Math Fluency Series*  
(Volume 5), by Chris McMullen, Ph.D., ISBN: 9781448611041
- *Elevator Magic*  
, by Stuart J. Murphy, ISBN: 9780064467094
- *Math Potatoes*  
, by Greg Tang, ISBN: 9780439443906
- *The \$1.00 Word Riddle Book*  
, by Marilyn Burns, ISBN: 9780941355025
- *A Quarter from the Tooth Fairy*  
, by Caren Holtzman, ISBN: 9780590265980
- *Mall Mania*  
, by Stuart J. Murphy, ISBN: 9780060557775
- *Subtraction Action*  
, by Loreen Leedy, ISBN: 0439329647
- *The Grapes of Math*  
, by Greg Tang, ISBN: 0439210402

### Media:

Rock 'N Learn® DVD -- Addition & Subtraction Rock, Nasco, Item # TB23054T

## Intended Learning Outcomes

1. Demonstrate a positive learning attitude
5. Understand and use basic concepts and skills
6. Communicate clearly in oral, artistic, written, and nonverbal form

## Instructional Procedures

### Invitation to Learn:

Write the numbers from 1 to 20 up on the board. The numbers now act as a number line. Choose a number between 1 and 20 that the students will try to guess by adding two numbers together or taking two numbers away. For example, if you chose the number 13, students would try and guess by saying "Is it 5 plus 3?" "Is it 18 minus 4?" You can increase the numbers used in the number line by extending it up to 30 or 40. You may also want to start your number line at different numbers to expose students to higher numbers (start at 200 and go to 220).

You can also use various word problems to get students thinking about and using addition and subtraction strategies (see Word Problems).

### Instructional Procedures:

#### A Fair Bear Share

Place students in groups of three and give each group 100 small objects, such as beans or counters.

Read the book, *A Fair Bear Share* to the class.

When you get to the pages where the book shows how the bears regrouped their collections, stop reading.

Instead of showing these pages to the students, tell them the number of items each bear cub collected and have students show how they would sort the collection for easier counting. For example, they might group things in groups of twos or fives.

Show the students the way that the bears regroup their collection.

Ask: "How many groups of 10 can be made from 11? How many left over?"

When students have counted all of the collected items for that particular page, record the total on the board.

Continue reading the story, stopping at each regrouping page. Allow students time to practice their regrouping with their objects and ask them questions about what they have done.

Have students record in their math journals what they learned about making groups of 10 from listening to the story. (It is quicker to count by tens than to count things individually.)

Show students how this strategy can be used in other doubledigit addition problems. Students add the tens together and then add the ones. If there are more than 10 ones, they can make another group of ten. For example, in the problem  $39 + 33$ , add the tens ( $3 + 3$ ) to make 6 and add the ones ( $9 + 3$ ) to make 12. Since 12 is more than 10, we can make another ten and have two left over, thus giving us an answer of 72.

Ask: "What things in our classroom can we add together by making groups of tens?"

Have students practice regrouping using items from the classroom. For example: crayons, pencils, books, etc.

Students can record their work in their math journals.

Give students more doubledigit addition problems, such as  $42 + 57$ , and have them show how they would add these numbers together using groups of tens.

#### Hundreds Chart Addition/Subtraction

Review the idea of working with tens and how students can get to the nearest ten from any number. ( $17 + 3 = 20$ ;  $8 + 2 = 10$ ) Give each student a hundreds chart then write a doubledigit math problem on the board. For example,  $47 + 22$ .

Discuss with students how they would find the answer to the math problem using the hundreds chart. Example: Going down two rows to make 20 and then going to the right two to make 22.

Give students another doubledigit addition problem to solve.

Have students find the answer using the hundreds chart. Remind students that in addition to finding the correct answer, you are also looking for them to share how they got the answer.

Work through several other doubledigit addition problems with the students.

Follow the same procedures for having students practice doubledigit subtraction problems using the hundreds chart.

The Number Squares website allows you to create hundreds charts starting at different numbers so your students can practice more advanced problems.

### Subtraction

Group students into pairs and give each pair 56 objects. Unifix cubes work great because they will hook together, but any small object will work (beans, place value blocks, counters, etc.).

Ask the students to make as many tens as they can.

Now have one child give 28 cubes (items) to the other child.

Ask: "How many cubes (items) do you have left?"

Have children share how they separated 28 from 56 and then determined how many were left.

Additional problems can be given for further practice.

### Lesson and Activity Time Schedule:

Each lesson is 55 minutes.

Each activity is 30 minutes.

Total lesson and activity time is 85 minutes.

### Activity Connected to Lesson:

#### Target Sum

Review the basics of doubledigit addition with the students.

Group students into pairs. Give each student a set of digit cards (see *Digit Cards*) and a game board (see *Target Sum Game Board*).

Designate a target sum for the game. 100 is a great place to start.

On their turn, students will draw four (4) digit cards and place them on their Target Sum game board. Students may place the cards in any tens or ones spot on the board to make 2 twodigit numbers.

Students then add their two (2) twodigit numbers together to get their sum.

The students with a sum closest to the target sum in the winner of the round.

This game can also be played by making three digit numbers and trying to get closest to the sum of 1,000 (see *Three Digit Target Sum Game Board*).

#### Cover Up

This activity can be done with groups of 24 students.

Each group will need a Cover Up game board and a set of Cover Up cards.

Copy the Cover Up cards on a different color of paper than the Cover Up game board.

Turn Cover Up cards upside down beside the game board.

Each player chooses five (5) cards and holds them in his/her hands facing him/her, like in UNO.

The first player uses one of his/her cards to cover a space on the board. The cards must be the correct answer to the math problem on the board. For example, if a student has a card that says "15" then the student would find a math problem on the board like " $10 + 5$ " and cover it with the card.

The next player plays a card but it must join the previous card played by touching any side or any corner of the previous card played. If this cannot be done, the player draws another card instead.

Play continues until in this manner until one player lays down all of his/her cards.

### Activity Materials:

- [Target Sum Game Board](#) (pdf)
- [Digit Cards](#) (pdf)
- [Cover Up Game Board](#) (pdf)
- [Cover Up Cards](#) (pdf)

### Extensions

For English Language Learners , have students draw pictures to represent their work on various math problems.

For advanced learners, have students write their own word problems for addition and subtraction. Students should write 23 problems that can then be solved by other students.

- Movement activity

: Give students a number like 13 and have them show how they would group themselves together to make that number. This can be done with another class to include more students and make larger numbers.

Family Connections:

Together, create an inventory of your kitchen cabinets. Count the boxes, cans, and bottles and make a mark for each. Circle groups of tens. How many items have you collected/counted in all?

This same idea can be used while in the car, counting and making marks for cars, trucks and bicycles that you pass.

Assessment Plan

Have students record their answers to various problems on a piece of paper that can be turned in.

Assess student knowledge through observation during activities.

Student responses during class discussions.

Formative quizzes can be given to assess student knowledge. These can either be paper/pencil quizzes or having a student model how to solve a problem.

Bibliography

Isaacs, A., Carroll, W. (1999). "Strategies for basic fact instruction." *Teaching Children Mathematics*, 508514.

This article includes research about how facts should be taught, common strategies used by children to learn facts, the place of practice in learning basic facts, a sequence for teaching facts, and how fact knowledge should be assessed. (Research was conducted at the University of Chicago School Mathematics Project.)

Kamii, C., & Lewis, B. (1990). "Constructivism and First Grade Arithmetic." *Arithmetic Teacher*, 3637  
Games are traditionally used as a reward for pupils yet are very effective as an instructional tool. Students are more likely to remember math concepts as they construct strategies through playing games and exchanging points of view than when they write in workbooks to satisfy the teacher.

Authors

[JODI REES](#)