

Just the Facts

Grade Level or Special Area: Grade 2, Math

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Length of Unit: Five 45 minute lessons

I. ABSTRACT

- A. This unit targets mastery of timed addition and subtraction facts as described in the Core Knowledge sequence. This unit focuses on differentiating instruction in order to engage all students as active learners. The students will participate in literature activities; such as chants, songs, hand clapping rhymes, as well as paper-pencil drills, and journal writing. The culminating activity will involve all students in a Math Fact Bee.

II. OVERVIEW

- A. Concept Objectives
1. The student understands the effects of operations on numbers and the relationships among these operations, applies appropriate strategies, and computes for problem solving. (Mathematics Sunshine State Standard 3: Number Sense, Concepts and Operations)
 2. The student writes to communicate ideas and information effectively. (Language Arts Sunshine State Standard 2: Writing)
 3. The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (Mathematics Sunshine State Standard 2: Data Collection and Analysis)
- B. Content from the *Core Knowledge Sequence*
1. Achieve timed mastery of addition facts, p. 57
 2. Recognize what an addend is, p.57
 3. Achieve timed mastery of subtraction facts, p.57
 4. Understand the inverse relation between addition and subtraction facts, p. 57.
 5. Know addition and subtraction “fact families”, p.57
- C. Skill Objectives
1. The student will apply strategies to solve addition facts when adding zero, one, and two.
 2. The student will apply strategies to solve addition facts when adding doubles, doubles plus one, and doubles plus two.
 3. The student will apply strategies to solve addition facts when adding nine and ten.
 4. The student will apply strategies to solve subtraction facts when subtracting zero, subtracting a number from itself, subtracting “sames”, fact families with sums to ten, and counting backward one or two digits.
 5. The student will apply strategies to solve subtraction facts when subtracting nine and subtracting ten.
 6. The student will color a graph to show the number of correct answers.
 7. The student will use daily vocabulary to explain the strategies.

8. The student will illustrate to show their understanding of the strategy.

III. BACKGROUND KNOWLEDGE

A. For Teachers

1. Core Knowledge Teacher Handbook Series Grade 2. Charlottesville: Core Knowledge Foundation, 2005, 1-890517-74-7
2. Hirsch Jr., E. D. *What Your Second Grader Needs to Know*. New York, NY: Dell Publishing, 1999, 0-385-31843-X
3. Feldman, Jean. June 2004. 19 Apr. 2006
http://www.drjean.org/html/monthly_act/act_2004/06_june/06_2004a.html.
4. Hanlon, Bill. "Accelerating Math Achievement: A Guide for Principals and Teachers." Hanlon Math. 2003. 19 Apr. 2006 www.hanlonmath.com.

B. For Students

1. Know the meaning of the plus (+) sign, pg. 35
2. Know what a "sum" is, pg. 35
3. Know addition facts to 10 plus 10, pg. 35
4. Add in any order, pg. 35
5. Know what happens when you add zero, pg. 35
6. Understands subtraction as "taking away", pg. 36
7. Know the meaning of the minus (-) sign, pg. 36
8. Know what a "difference" is, pg. 36
9. Know subtraction facts corresponding to addition facts , pg. 36

IV. RESOURCES

- A. Hirsch Jr., E. D. *What Your Second Grader Needs to Know*. New York, NY: Dell Publishing, 1999, 0-385-31843-X
- B. Core Knowledge Teacher Handbook Series Grade 2. Charlottesville: Core Knowledge Foundation, 2005, 1-890517-74-7
- C. Leedy, Loreen. Mission Addition. New York: Scholastic Inc., 1997, 0-590-635-04-2
- D. Leedy, Loreen. Subtraction Action. New York: Scholastic Inc., 2000, 0-439-30037-1
- E. National Institute of Environmental Health Sciences, NIEHS Kid's Pages Web site: <http://www.niehs.nih.gov/kids/music.htm>

V. LESSONS

Lesson One: Adding Zero, One, and Two

A. Daily Objectives

1. Concept Objective
 - a. The student understands the effects of operations on numbers and the relationships among these operations, applies appropriate strategies, and computes for problem solving. (Mathematics Sunshine State Standard 3: Number Sense, Concepts and Operations)
 - b. The student writes to communicate ideas and information effectively. (Language Arts Sunshine State Standard 2: Writing)

- c. The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (Mathematics Sunshine State Standard 2: Data Collection and Analysis)
 - 2. Lesson Content
 - a. Achieve timed mastery of addition facts.
 - b. Recognize what an addend is.
 - 3. Skill Objective(s)
 - a. The student will apply strategies to solve addition facts when adding zero, one and two.
 - b. The student will fill in a graph to show the number of correct answers.
 - c. The student will use daily vocabulary to explain the strategies.
 - d. The student will illustrate to show their understanding of the strategy.
- B. *Materials*
 - 1. Fact Journal (Appendix A)
 - 2. Timer
 - 3. Red pens, pencils
 - 4. Lesson One Student Page (Appendix B)
 - 5. Lesson One Chants (Appendix C) *Make a chart or transparency.
 - 6. Book- *Mission Addition*
- C. *Key Vocabulary*
 - 1. Addends- When adding numbers together, the numbers added are called **addends**.
 - 2. Sum- When adding two numbers together, the answer is the **sum**.
 - 3. Equals (=)- This symbol means “is the same as”.
 - 4. Plus (+)- This symbol means “added to”.
- D. *Procedures/Activities*
 - 1. Introduction-
 - a. Tell students that they must be able to recall addition facts in two seconds in order to be successful in learning other math operations.
 - b. Have students complete the pre test on the student page (Appendix B). Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed.
 - c. Self-check- Have students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper. Fact Journal- Give the students their journals. Explain the Data Sheet inside their Fact Journals. Have students write the total number of correct answers next to Lesson 1 pre test. Then have the students fill in the graph with a red crayon to show the number of correct answers. (Appendix A)
 - 2. Daily Review- Count by ones, twos, threes, fives, and tens.
 - 3. Daily Objective- Tell the students today’s objective: To apply strategies to solve addition facts when adding zero, one, and two. Write the objective on the board and have students write it inside their Fact Journal.

4. Concept and Skill Development and Application-
 - a. Read aloud *Mission Addition* pg 4-8.
 - b. Introduce and discuss vocabulary.
 - c. Explain today's addition strategies: Zero plus a number, equals that number. Tell the students that the inverse is also true. A number plus zero, equals that number. Then chant with students and tap on desks. With one or two, keep counting on. Chant with students and tap on desks.
 - d. Read aloud the chants. Practice the chant. (Appendix C)
5. Guided/Independent/Group Practice-
 - a. Completed guided practice with a buddy. Students take turns being the "coach" and being the "student". The student reads a problem aloud, chants the strategy and writes the answer. The coach gives a hint, then if necessary, corrects the answer, then gives a compliment. They switch roles for each problem and complete all the problems.
 - b. Group check- The teacher chants the correct strategy for each problem on the guided practice sheet. The "examples" are the actual problems. Search the answers for number patterns.
 - c. Fact Journal- The students use today's vocabulary to explain the strategies they learned. Then illustrate to show their understanding of the strategy.

E. *Assessment/Evaluation*

1. The students complete the post test. Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed. Remind the students to chant silently as they solve the problems.(Appendix B)
2. Self-check- The students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
3. Fact Journal- The students write the total number of correct answers next to Lesson 1 post test. Then the students fill in the graph with a green crayon to show the number of correct answers. Place the paper in the Fact Journal. Allow students to celebrate their accomplishments with a cheer. Visit the Dr. Jean website for cheer ideas.(Appendix A)

Lesson Two: Doubles, Doubles Plus One and Two

A. *Daily Objectives*

1. Concept Objective
 - a. The student understands the effects of operations on numbers and the relationships among these operations, applies appropriate strategies, and computes for problem solving. (Mathematics Sunshine State Standard 3: Number Sense, Concepts and Operations)
 - b. The student writes to communicate ideas and information effectively. (Language Arts Sunshine State Standard 2: Writing)

- c. The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (Mathematics Sunshine State Standard 2: Data Collection and Analysis)
 - 2. Lesson Content
 - a. Achieve timed mastery of addition facts.
 - b. Recognize what an addend is.
 - 3. Skill Objective(s)
 - a. The student will apply strategies to solve addition facts when adding doubles, doubles plus one, and doubles plus two.
 - b. The student will fill in a graph to show the number of correct answers.
 - c. The student will use daily vocabulary to explain the strategies. The student will illustrate to show their understanding of the strategy
- B. Materials
 - 1. Fact Journal (Appendix A)
 - 2. Timer
 - 3. Red pens, pencils
 - 4. Lesson Two Student Page (Appendix D)
 - 5. Lesson Two Chant (Appendix E) *Make a chart or transparency.
 - 6. Book- *Mission Addition*
- C. *Key Vocabulary*
 - 1. Addends- When adding numbers together, the numbers you add are called **addends**.
 - 2. Double- When the addends are the same number, they are called **doubles**. $2+2$
- D. *Procedures/Activities*
 - 1. Introduction-
 - a. Tell students that they must be able to recall addition facts in two seconds in order to be successful in learning other math operations.
 - b. Have students complete the pre test on the student page (Appendix D). Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed.
 - c. Self-check- Have students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
 - d. Fact Journal- Give the students their journals. Explain the Data Sheet inside their Fact Journals. Have students write the total number of correct answers next to Lesson 2 pre test. Then have the students fill in the graph with a red crayon to show the number of correct answers.
 - 2. Daily Review- Review the strategy learned in the previous lesson.
 - 3. Daily Objective- Tell the students today's objective. To apply strategies to solve addition facts when adding doubles, doubles plus one and two. Write it on the board and have students write it inside their Fact Journal.
 - 4. Concept and Skill Development and Application-
 - a. Introduce and discuss vocabulary.

- b. Explain today's addition strategy: Look for addition facts with doubles and solve these first. Use the doubles to solve the others. A number that is one more, add one more. A number that is two more, add two more.
 - c. Read aloud the chant. Practice the chant.(Appendix E)
5. Guided/Independent/Group Practice-
- a. Complete practice section on the student page with a buddy. Students take turns being the "coach" and being the "student". The student reads a problem aloud, chants the strategy and writes the answer. The coach gives a hint, then if necessary, corrects the answer, then gives a compliment. They switch roles for each problem and complete all the problems.
 - b. Group check- The teacher chants the correct strategy for each problem on the guided practice sheet. Search the answers for number patterns.
 - c. Fact Journal- The students use today's vocabulary to explain the strategies they learned. Then illustrate to show their understanding of the strategy. (Appendix A)
- E. *Assessment/Evaluation*
- 1. The students complete the post test. Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed. Remind the students to chant silently as they solve the problems.(Appendix D)
 - 2. Self-check- The students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
 - 3. Fact Journal- The students write the total number of correct answers next to Lesson 2 post test. Then the students fill in the graph with a green crayon to show the number of correct answers. Place the paper in the Fact Journal. Allow students to celebrate their accomplishments with a cheer. Visit the Dr. Jean website for cheer ideas. (Appendix A)

Lesson Three: Adding Nine and Adding Ten

- A. *Daily Objectives*
- 1. Concept Objective
 - a. The student understands the effects of operations on numbers and the relationships among these operations, applies appropriate strategies, and computes for problem solving. (Mathematics Sunshine State Standard 3: Number Sense, Concepts and Operations)
 - b. The student writes to communicate ideas and information effectively. (Language Arts Sunshine State Standard 2: Writing)
 - c. The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (Mathematics Sunshine State Standard 2: Data Collection and Analysis)
 - 2. Lesson Content
 - a. Achieve timed mastery of addition facts.
 - b. Recognize what an addend is.

3. Skill Objective(s)
 - a. The student will apply strategies to solve addition facts when adding nine and ten.
 - b. The student will fill in a graph to show the number of correct answers.
 - c. The student will use daily vocabulary to explain the strategies.
 - d. The student will illustrate to show their understanding of the strategy.

- B. *Materials*
 1. Fact Journal (Appendix A)
 2. Timer
 3. Red pens, pencils
 4. Lesson Three Student Page (Appendix F)
 5. Lesson Three Chant (Appendix G) *Make a chart or transparency.

- C. *Key Vocabulary*
 1. Addends- When adding numbers together, the numbers added are called **addends**.
 2. Sum- When adding numbers together, the answer is the **sum**.
 3. Equals (=) - This symbol means “is the same as”.
 4. Plus (+) - This symbol means “added to”.
 5. And - The words **and** is a synonym for “plus”.

- D. *Procedures/Activities*
 1. Introduction-
 - a. Tell students that they must be able to recall addition facts in two seconds in order to be successful in learning other math operations.
 - b. Have students complete the pre test on the student page (Appendix F). Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed.
 - c. Self-check- Have students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper. Place the paper inside the Fact Journal.
 - a. Fact Journal- Give the students their journals. Explain the Data Sheet inside their Fact Journals. Have students write the total number of correct answers next to Lesson 3 pre test. Then have the students fill in the graph with a red crayon to show the number of correct answers. (Appendix A)
 2. Daily Review- Review the strategy learned in the previous lesson.
 3. Daily Objective- Tell the students today’s objective. To apply strategies to solve addition facts when adding nine and ten. Write it on the board and have students write it inside their Fact Journal.
 4. Concept and Skill Development and Application-
 - a. Introduce and discuss vocabulary.
 - b. Explain today’s addition strategies: When adding ten to any number, the ones digit stays the same. When adding nine to any number, the ones digit in the sum will be one less than the other addend.
 - c. Read aloud and practice the chant.(Appendix G)

5. Guided/Independent/Group Practice-
 - a. Complete practice section on the student page with a buddy. Students take turns being the “coach” and being the “student”. The student reads a problem aloud, chants the strategy and writes the answer. The coach gives a hint, then if necessary, corrects the answer, then gives a compliment. They switch roles for each problem and complete all the problems.
 - b. Group check- The teacher chants the correct strategy for each problem on the guided practice sheet. Search the answers for number patterns.
 - c. Fact Journal- The students use today’s vocabulary to explain the strategies they learned. Then illustrate to show their understanding of the strategy.
- E. *Assessment/Evaluation*
 1. The students complete the post test. Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed. Remind the students to chant silently as they solve the problems.(Appendix F)
 2. Self-check- The students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
 3. Fact Journal- The students write the total number of correct answers next to Lesson 3 post test. Then the students fill in the graph with a green crayon to show the number of correct answers. Place the paper in the Fact Journal. Allow students to celebrate their accomplishments with a cheer. Visit the Dr. Jean website for cheer ideas.(Appendix A)

Lesson Four: Subtracting zero, subtracting a number from itself, “sames” , fact families with sums to ten, counting backward one or two digits.

A. *Daily Objectives*

1. Concept Objective
 - a. The student understands the effects of operations on numbers and the relationships among these operations, applies appropriate strategies, and computes for problem solving. (Mathematics Sunshine State Standard 3: Number Sense, Concepts and Operations)
 - b. The student writes to communicate ideas and information effectively. (Language Arts Sunshine State Standard 2: Writing)
 - c. The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (Mathematics Sunshine State Standard 2: Data Collection and Analysis)
2. Lesson Content
 - a. Achieve timed mastery of subtraction facts.
 - b. Understand the inverse relation between addition and subtraction facts.
 - c. Know addition and subtraction “fact families”.
3. Skill Objective(s)
 - a. The student will apply strategies to solve subtraction facts when subtracting zero, subtracting a number from itself, subtracting “sames”, fact families with sums to ten, and counting backward one or two digits.
 - b. The student will fill in a graph to show the number of correct answers.
 - c. The student will use daily vocabulary to explain the strategies.
 - d. The student will illustrate to show their understanding of the strategy.

B. *Materials*

1. Fact Journal (Appendix A)
2. Timer
3. Red pens, pencils
4. Lesson Four Student Page (Appendix H)
5. Lesson Four Chants (Appendix I)
6. Book- *Subtraction Action*

C. *Key Vocabulary*

1. Digit- A number symbol. The symbols 0,1,2,3,4,5,6,7,8,9 are single or one **digit** numbers. When we used two symbols, they are called two digit numbers.
2. Subtraction- **Subtraction** means to take away.
3. Minus (-) - This symbol means “taken away from”.
4. Difference-The answer you get when you subtract is the **difference**.
5. Fact family- A group of three numbers that work together to form addition and subtraction equations is a **fact family**.

D. *Procedures/Activities*

1. Introduction-

- a. Tell students that they must be able to recall subtraction facts in two seconds in order to be successful in learning other math operations.
 - b. Have students complete the pre test on the student page (Appendix H). Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed.
 - c. Self-check- Have students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
 - d. Fact Journal- Give the students their journals. Explain the Data Sheet inside their Fact Journals. Have students write the total number of correct answers next to Lesson 4 pre test. Then have the students fill in the graph with a red crayon to show the number of correct answers. (Appendix A)
2. Daily Review- Review the strategy learned in the previous lesson.
 3. Daily Objective- Tell the students today's objective. To apply strategies to solve subtraction facts. Write it on the board and have students write it inside their Fact Journal.
 4. Concept and Skill Development and Application-
 - a. Read aloud *Subtraction Action* pg 4-9 and 20-24.
 - b. Introduce and discuss vocabulary.
 - c. Explain today's subtraction strategies. Read and practice the chants. (Appendix I)
 5. Guided/Independent/Group Practice-
 - a. Complete practice section on the student page with a buddy. Students take turns being the "coach" and being the "student". The student reads a problem aloud, chants the strategy and writes the answer. The coach gives a hint, then if necessary, corrects the answer, then gives a compliment. They switch roles for each problem and complete all the problems.
 - b. Group check- The teacher chants the correct strategy for each problem on the guided practice sheet. Search the answers for number patterns.
 - c. Fact Journal- The students use today's vocabulary to explain the strategies they learned. Then illustrate to show their understanding of the strategy.
- E. *Assessment/Evaluation*
1. The students complete the post test. Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed. Remind the students to chant silently as they solve the problems.
 2. Self-check- The students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper. Place the paper inside the Fact Journal.
 3. Fact Journal- The students write the total number of correct answers next to Lesson 4 post test. Then the students fill in the graph with a green crayon to show the number of correct answers. Place the paper in the

Fact Journal. Allow students to celebrate their accomplishments with a cheer. Visit the Dr. Jean website for cheer ideas.(Appendix A)

Lesson Five: Subtracting Nine and Subtracting Ten.

A. *Daily Objectives*

1. Concept Objective
 - a. The student understands the effects of operations on numbers and the relationships among these operations, applies appropriate strategies, and computes for problem solving. (Mathematics Sunshine State Standard 3: Number Sense, Concepts and Operations)
 - b. The student writes to communicate ideas and information effectively. (Language Arts Sunshine State Standard 2: Writing)
 - c. The student uses expressions, equations, inequalities, graphs, and formulas to represent and interpret situations. (Mathematics Sunshine State Standard 2: Data Collection and Analysis)
2. Lesson Content
 - a. Achieve timed mastery of subtraction facts.
 - b. Understand the inverse relation between addition and subtraction facts.
 - c. Know addition and subtraction “fact families”.
3. Skill Objective(s)
 - a. The student will apply strategies to solve subtraction facts when subtracting nine and subtracting ten.
 - b. The student will fill in a graph to show the number of correct answers.
 - c. The student will use daily vocabulary to explain the strategies.
 - d. The student will illustrate to show their understanding of the strategy.

B. *Materials*

1. Fact Journal (Appendix A)
2. Timer
3. Red pens, pencils
4. Lesson Five Student Page (Appendix J)
5. Lesson Five Chants (Appendix K)
6. Book *Subtraction Action*

C. *Key Vocabulary*

1. Subtraction- **Subtraction** means to take away.
2. Minus (-) - This symbol means “taken away from”.
3. Minuend- The larger number subtracting from is the **minuend**.
4. Subtrahend- The smaller number which is being taken away is the **subtrahend**.

D. *Procedures/Activities*

1. Introduction-
 - a. Tell students that they must be able to recall addition facts in two seconds in order to be successful in learning other math operations.
 - b. Have students complete the pre test on the student page (Appendix J). Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed.

- c. Self-check- Have students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
 - d. Fact Journal- Give the students their journals. Explain the Data Sheet inside their Fact Journals. Have students write the total number of correct answers next to Lesson 5 pre test. Then have the students fill in the graph with a red crayon to show the number of correct answers. (Appendix A)
 - 2. Daily Review- Review the strategy learned in the previous lesson.
 - 3. Daily Objective- Tell the students today's objective. To apply strategies to solve subtraction facts. Write it on the board and have students write it inside their Fact Journal.
 - 4. Concept and Skill Development and Application-
 - a. Introduce and discuss vocabulary.
 - b. Explain today's subtraction strategies:
 - c. Read aloud and practice the chants.(Appendix K)
 - 5. Guided/Independent/Group Practice-
 - a. Complete practice section on the student page with a buddy. Students take turns being the "coach" and being the "student". The student reads a problem aloud, chants the strategy and writes the answer. The coach gives a hint, then if necessary, corrects the answer, then gives a compliment. They switch roles for each problem and complete all the problems.
 - b. Group check- The teacher chants the correct strategy for each problem on the guided practice sheet. Search the answers for number patterns.
 - c. Fact Journal- The students use today's vocabulary to explain the strategies they learned. Then illustrate to show their understanding of the strategy.
- E. *Assessment/Evaluation*
 - 1. The students complete the post test. Set the timer for one minute. Have students stop after one minute and circle the last addition fact they completed. Remind the students to chant silently as they solve the problems. (Appendix J)
 - 2. Self-check- The students use a red pen to place a check mark next to the facts they answered correctly. Count the number of correct answers. Write the total on the top of their paper.
 - 3. Fact Journal- The students write the total number of correct answers next to Lesson 5 post test. Then the students fill in the graph with a green crayon to show the number of correct answers. Place the paper in the Fact Journal. Allow students to celebrate their accomplishments with a cheer. Visit the Dr. Jean website for cheer ideas. (Appendix A)

VI. CULMINATING ACTIVITY

- A. The Math Fact Bee is an optional activity. Follow these steps to plan and successfully hold your math challenge.
 - 1. Meet with the other second grade teachers. Choose one week after teaching the unit to hold the challenges. Choose 100 math facts to use in the challenge. Give each teacher the same list of math facts.

2. Each classroom teacher holds a Math Fact Bee challenge in their own classroom. Choose students randomly by placing all the students' names in a hat or paper bag. Draw two names. These two students come to the front of the class. The teacher reads the math fact. The student that answers correctly stays in front of the class. The teacher draws another name from the hat or paper bag. Continue this process until all students have participated in the challenge.
3. The top three winners from each individual classroom are invited to the Math Fact Bee.
4. Make name tags for the winners.
5. Arrange to have the Math Bee in the Media Center or in a room large enough for all the second grade students as the audience. You can invite parents to attend as well.
6. Choose the principal or other staff member to be the Master of Ceremony for the Math Fact Bee.
7. Use the same list of math facts for the challenge. Follow the same procedures from the classroom math challenge. Give awards to the top three winners.

VII. HANDOUTS/WORKSHEETS

- A. Appendix A: Fact Journal (All pages should be copied and bound together in a booklet.)
- B. Appendix B: Lesson 1 Student Page
- C. Appendix C: Lesson 1 Chants
- D. Appendix D: Lesson 2 Student Page
- E. Appendix E: Lesson 2 Chant
- F. Appendix F: Lesson 3 Student Page
- G. Appendix G: Lesson 3 Chant
- H. Appendix H: Lesson 4 Student Page
- I. Appendix I: Lesson 4 Chants
- J. Appendix J: Lesson 5 Student Page
- K. Appendix K: Lesson 5 Chants

VIII. BIBLIOGRAPHY

- A. Hirsch Jr., E. D. *What Your Second Grader Needs to Know*. New York, NY: Dell Publishing, 1999, 0-385-31843-X
- B. Core Knowledge Teacher Handbook Series Grade 2. Charlottesville: Core Knowledge Foundation, 2005, 1-890517-74-7
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- D. Leedy, Loreen. Subtraction Action. New York: Scholastic Inc., 2000, 0-439-30037-1
- E. National Institute of Environmental Health Sciences, NIEHS Kid's Pages Web site: <http://www.niehs.nih.gov/kids/music.htm>

(Appendix A)

Math Facts

A Journal Created by:

(Appendix A)
Data Sheet

30										
29										
28										
27										
26										
25										
24										
23										
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9										
8										
7										
6										
5										
4										
3										
2										
1										
	<i>pre test score</i>	<i>post test score</i>								
	Lesson 1		Lesson 2		Lesson 3		Lesson 4		Lesson 5	

Lesson 1 Objective

Vocabulary- Use the vocabulary words to tell about the strategy you learned today.

addends sum equals plus

Draw a picture about to tell about the strategy you learned today.

(Appendix A)

Lesson 2 Objective

Vocabulary- Use the vocabulary words to tell about the strategy you learned today.

addends double

Draw a picture about to tell about the strategy you learned today.

Lesson 3 Objective

Vocabulary- Use the vocabulary words to tell about the strategy you learned today.

addends sum equals plus and

Draw a picture about to tell about the strategy you learned today.

Lesson 4 Objective

Vocabulary- Use the vocabulary words to tell about the strategy you learned today.

digit fact family subtraction
minus difference

Draw a picture about to tell about the strategy you learned today.

Lesson 5 Objective

Vocabulary- Use the vocabulary words to tell about the strategy you learned today.

subtraction minus minuend
subtrahend

Draw a picture about to tell about the strategy you learned today.

Name _____

Pre Test 1

$0+1=$ $1+2=$ $3+1=$ $0+4=$ $6+1=$

$6+0=$ $4+2=$ $0+2=$ $0+3=$ $8+0=$

$9+2=$ $0+2=$ $7+1=$ $1+1=$ $6+2=$

$2+2=$ $2+1=$ $7+0=$ $7+2=$ $5+1=$

$4+1=$ $8+1=$ $3+2=$ $0+3=$ $8+2=$

$0+4=$ $0+5=$ $9+1=$ $5+2=$ $9+0=$

Total correct= My goal=

Practice 1

Use the strategies to help you solve the problems.

Zero plus a number, equals that number. A number plus zero, equals that number. With one and two, keep counting on.

$0+0=$ $0+1=$ $0+2=$ $0+3=$ $0+4=$

$0+5=$ $6+0=$ $7+0=$ $8+0=$ $9+0=$

$1+1=$ $2+1=$ $3+1=$ $4+1=$ $5+1=$

$6+1=$ $7+1=$ $8+1=$ $9+1=$ $10+1=$

$1+2=$ $2+2=$ $3+2=$ $4+2=$ $5+2=$

$6+2=$ $7+2=$ $8+2=$ $9+2=$ $10+2=$

Post Test 1

$0+1=$ $1+2=$ $3+1=$ $0+1=$ $1+2=$

$6+0=$ $4+2=$ $0+2=$ $6+0=$ $4+2=$

$9+2=$ $0+2=$ $7+1=$ $9+2=$ $0+2=$

$2+2=$ $2+1=$ $7+0=$ $2+2=$ $2+1=$

$4+1=$ $8+1=$ $3+2=$ $4+1=$ $8+1=$

$0+4=$ $0+5=$ $9+1=$ $0+4=$ $0+5=$

Did I reach my goal?

Lesson 1 Chant (Appendix C)



Zero Plus a Number

Written by : Ivette Orama & Heather Daniels

Teacher Directions: Get enthusiastic and chant. Tap desks for each word.

Teacher chants and taps for each word:	Zero plus a number, equals that number. Zero plus a number, equals that number.
Students shout and tap for each syllable:	Ex-am-ple!
Teacher chants:	1+0
Students shout:	=1
Teacher chants and taps for each word:	Zero plus a number, equals that number. Zero plus a number, equals that number.
Students shout and tap for each syllable:	Ex-am-ple!
Teacher chants:	2+0
Students shout:	=two
Continue to chant for sums up to $10+0=$	



Counting on with 1 and 2 Class Chant

“With 1
or 2

Keep counting on.”

Students shout:

Teacher:

Students:

Tap with left index finger 1 beat.

Tap with right index and middle fingers 1 beat.

Tap with all 3 fingers 3 beats.

Example!

Gives problem including answer ($1+1=2$)

Repeat problem



Counting on with 1 and 2 Desk Chant

“With 1
or 2

Keep counting on.”

Repeat 3 times

Tap with left index finger 1 beat.

Tap with right index and middle fingers 1 beat.

Tap with all 3 fingers 3 beats.

Name _____

Pre Test 1

$2+2=$ $1+2=$ $6+6=$ $7+7=$ $2+3=$

$1+1=$ $3+3=$ $4+4=$ $4+6=$ $4+4=$

$4+5=$ $8+8=$ $3+5=$ $5+6=$ $5+7=$

$9+10=$ $6+7=$ $8+9=$ $6+8=$ $7+8=$

$8+9=$ $2+4=$ $6+6=$ $8+10=$ $9+9=$

$5+5=$ $9+11=$ $3+4=$ $1+3=$ $6+6=$

Total correct= My goal=

Practice 1

Use the strategies to help you solve the problems.

Remember the chants.

$1+1=$ $1+2=$ $1+3=$ $2+2=$ $2+3=$

$2+4=$ $3+3=$ $3+4=$ $3+5=$ $4+4=$

$4+5=$ $4+6=$ $5+5=$ $5+6=$ $5+7=$

$6+6=$ $6+7=$ $6+8=$ $7+7=$ $7+8=$

$8+9=$ $8+8=$ $8+9=$ $8+10=$ $9+9=$

$9+10=$ $9+11=$ $4+4=$ $2+2=$ $6+6=$

Post Test 1

$4+6=$ $8+8=$ $8+9=$ $1+1=$ $6-1=$

$3+4=$ $1+3=$ $6+6=$ $5+5=$ $4-2=$

$8+8=$ $8+10=$ $9+10=$ $3+3=$ $2-0=$

$6+7=$ $5+6=$ $7+7=$ $9+11=$ $2-1=$

$1+2=$ $3+3=$ $8+9=$ $2+2=$ $8-0=$

$4+5=$ $6+8=$ $2+4=$ $3+5=$ $5-0=$

Did I reach my goal?

Lesson 2 Chant (Appendix E)



Double, Double

Written by : Ivette Orama & Heather Daniels

Teacher Directions: To do this hand-rhyme you will need two volunteers.

Tap fists together twice as you chant. Double, double



Clap hands together twice as you chant. one, one



Tap fists together twice as you chant. equals, equals



Tap back of hands together. two, two



Tap fists together twice as you chant. double one



Clap hands together twice as you chant. equals two



Continue the same pattern up to five. Double, double two, two
Equals, equals four, four
Double two
Equals four
Double, double two four

Name _____

Pre Test 3

$9+7=$	$2+10=$	$5+10=$	$8+10=$	$10+9=$
$1+10=$	$8+9=$	$3+10=$	$6+9=$	$9+10=$
$4+9=$	$4+10=$	$5+9=$	$1+9=$	$7+9=$
$0+10=$	$2+9=$	$10+5=$	$7+10=$	$3+9=$
$9+10=$	$10+6=$	$10+8=$	$0+9=$	$9+9=$
$9+2=$	$10+4=$	$10+10=$	$10+10=$	$6+10=$

Total correct= My goal=

Practice 3

Use the strategies to help you solve the problems.

Remember the chants.

$0+9=$	$1+9=$	$2+9=$	$3+9=$	$4+9=$
$5+9=$	$6+9=$	$7+9=$	$8+9=$	$9+9=$
$10+9=$	$0+10=$	$1+10=$	$2+10=$	$3+10=$
$4+10=$	$5+10=$	$6+10=$	$7+10=$	$8+10=$
$9+10=$	$10+10=$	$9+2=$	$9+7=$	$9+10=$
$10+4=$	$10+5=$	$10+6=$	$10+8=$	$10+10=$

Post Test 3

$8+10=$	$1+10=$	$6+9=$	$4+9=$	$8+9=$
$4+10=$	$7+9=$	$5+9=$	$9+9=$	$0+10=$
$0+9=$	$2+9=$	$6+10=$	$10+4=$	$10+10=$
$10+4=$	$10+6=$	$9+7=$	$1+9=$	$5+10=$
$2+10=$	$10+5=$	$9+2=$	$7+10=$	$10+8=$
$9+10=$	$3+10=$	$3+9=$	$10+9=$	$1+9=$

Did I reach my goal?

Lesson 3 Chant (Appendix G)



Adding Nine and Adding Ten

Written by : Ivette Orama & Heather Daniels

Teacher Directions: Sing to the tune of Yankee Doodle
When adding nine to any number,
Our digits play a trick
The addends give a special clue
The sum will come to you

Check the ones
They are one less
Than the other addend

Check the ones
They are one less
Than the other addend

When adding ten to any number
The ones digit stays the same.
Remember to check the ones
So you can play our game.

Check the ones
They are the same
Than the other addend

Check the ones
They are the same
Than the other addend

Name _____

Pre Test 4

1-0= 2-1= 6-2= 9-9= 2+4=

5-0= 6-1= 9-2= 7-7= 4+2=

8-8= 7-1= 4-2= 6-6= 4+5=

10-10= 9-1= 8-2= 5-5= 5+4=

4+6= 10-4= 5+2= 7-2= 9-4=

6+4= 10-6= 2+5= 7-5= 9-5=

Total correct= My goal=

Practice 4

Use the strategies to help you solve the problems.

Remember the chants!

2-0= 7-1= 8-2= 5-5= 3+2=

9-0= 8-1= 3-2= 1-1= 2+3=

7-7= 2-1= 10-2= 4-4= 3+6=

3-3= 5-1= 9-2= 3-3= 6+3=

7+3= 10-3= 5+3= 8-3= 9-3=

3+7= 10-7= 3+5= 8-5= 9-6=

Post Test 4

5-0= 2-1= 2-2= 4-4= 6+1=

8-0= 4-1= 5-2= 0-0= 1+6

5-5= 9-1= 8-2= 7-7= 7+3=

9-9= 8-1= 3-2= 6-6= 3+7=

1+2= 3-2= 4+6= 10-4= 10-7=

2+1= 3-1= 6+4= 10-6= 10-3=

Did I reach my goal?

Lesson 4 Chants (Appendix I)



Subtraction Can Be Fun

Written by : Ivette Orama & Heather Daniels

Teacher Directions: Sing to the tune of The Farmer in the Dell

Subtraction can be fun
We'll show you how it's done
We know how to take away
Subtraction can be fun

Take away a zero
Take away a zero
The number always stay the same
When we take away a zero

When digits are the same
When digits are the same
Take away the "sames"
The difference is a zero

Take away a ten
Take away a ten
The ones digit stays the same
When we take away a ten

Subtraction can be fun
We'll show you how it's done
We know how to take away
Subtraction can be fun



Counting Back

Written by : Ivette Orama & Heather Daniels

Teacher Directions: This is a jump rope rhyme. Have the students jump rope outside or pretend to jump rope inside the classroom.

Engine, engine number nine chant

Running on Subtraction line.

If the train should jump the track

You will get your twenty back.

20,19,18,17,16,15,14,13,12,11,10,9,

Chant and jump for each number.

8,7,6,5,4,3,2,1

Lesson 4 Chants (Appendix I Continued)



Miss Fact Family

Written by : Ivette Orama & Heather Daniels

Teacher Directions: Clap to the tune of Miss Mary Mack. Repeat this pattern.

cross arms over chest	tap your lap	clap own hands	clap your right hand to your partners right hand followed by a quick clap of your own hands together (this clap does not match the syllable count)	clap your left hand to your partners left hand followed by a quick clap of your own hands together (this clap does not match the syllable count)	clap your right hand to your partners right hand
I	have	a	fact	fact	fact
That	you	must	add	add	add
And	then	sub-	tract	tract	tract
They're	in	a	family	family	family
Use	all	numbers	once	once	once
And	then	you'll	have	have	have
It's	time	to	add	add	add
What	e-	quals	ten	ten	ten
Six plus	four	is	ten	ten	ten
Four	plus	six is	ten	ten	ten
Let	us	use	that	that	that
To	help	sub-	tract	tract	tract
Ten minus	six	is	four	four	four
Use your	brain	to	add	add	add
When	you	sub-	tract	tract	tract
You'll	be	so	smart	smart	smart!

Name _____

Pre Test 4

11-9=	14-9=	10-10=	12-10=	15-10=
15-9=	18-9=	11-10=	14-10=	19-10=
19-9=	12-9=	13-10=	16-10=	13-10=
17-9=	15-9=	17-10=	18-10=	11-10=
13-9=	11-9=	15-10=	11-10=	17-10=
16-9=	18-9=	19-10=	10-10	14-10=

Total correct= My goal=

Practice 4

Use the strategies to help you solve the problems.

Remember the chant!

15-10=	11-9=	12-10=	10-10=	14-9=
19-10=	15-9=	14-10=	11-10=	18-9=
13-10=	19-9=	16-10=	13-10=	12-9=
11-10=	17-9=	18-10=	17-10=	15-9=
17-10=	13-9=	11-10=	15-10=	11-9=
14-10=	16-9=	10-10	19-10=	18-9=

Post Test 4

10-10=	12-10=	11-9=	14-9=	15-10=
11-10=	14-10=	15-9=	18-9=	19-10=
13-10=	16-10=	19-9=	12-9=	13-10=
17-10=	18-10=	17-9=	15-9=	11-10=
15-10=	11-10=	13-9=	11-9=	17-10=
19-10=	10-10	16-9=	18-9=	14-10=

Did I reach my goal?

Lesson 5 Chants (Appendix K)



Take Nine Away

Written by : Ivette Orama & Heather Daniels

Teacher Directions: Clap to the beat of B. I. N. G. O.

The minuend is larger, larger, larger
The subtrahend is smaller
Take it away!

The minuend grows by one, grows by one, grows by one
The minuend grows by one
When you subtract nine!



Take Ten Away

Written by : Ivette Orama & Heather Daniels

Teacher Directions: Sing and clap to the tune of B. I. N. G. O.

Take, take ten away
Take, take ten away
Take, take ten away
The ones stay the same-O