



MISSISSIPPI

EXEMPLAR

Units & Lessons

MATHEMATICS

Kindergarten

Grant funded by:



Lesson 6: Math REALLY Satisfies

Focus Standard(s): K.OA.2

Additional Standard(s): K.OA.1 (embedded); K.OA.3 and K.OA.4 (prerequisites), K.CC.4a, K.CC.4b

Standards for Mathematical Practice: SMP.2, SMP.4, SMP.5, SMP.6, SMP.8

Resources and Materials:

- Floor Number Line
- Linking Cubes
- Painter's Tape
- Pencils
- Handout 6.1: Real World Subtraction Problems
- Flocabulary Video ["I Wanna Know About 10"](#)

Learning Center Materials:

- Art Paper
- Construction Paper Circles
- Fruit
- Glue
- Markers
- Music
- Paint
- Paint Brushes
- Story Props for *The Very Hungry Caterpillar*
- Student Journals
- Vegetables

Lesson Target(s):

- Students take part away from a whole and identify the remaining amount.
- Students deconstruct subtraction word problems.

Guiding Question(s):

- What differentiates addition and subtraction?
- When have you had to use subtraction?

Vocabulary

Academic Vocabulary:

- decrease
- deduct
- difference
- how many more
- left
- less than
- minus
- remain
- subtract
- subtraction
- take away

Instructional Strategies for Academic Vocabulary:

- Introduce words with student-friendly definitions and pictures
- Model how to use the words in discussion
- Discuss the meaning of word in a mathematical context
- Create pictures/symbols to represent words
- Write/discuss using the words
- Act out the words or attach movements to the words

Symbol

Type of Text and Interpretation of Symbol



Instructional support and/or extension suggestions for students who are EL, have disabilities, or perform well below the grade level and/or for students who perform well above grade level

✓

Assessment (Pre-assessment, Formative, Self, or Summative)

Instructional Plan

Understanding Lesson Purpose and Student Outcomes: Students will comprehend and act out a subtraction word problem using the classroom as the setting. Students will use manipulatives to understand subtracting within 10.

Anticipatory Set/Introduction to the Lesson (Whole Group): Making 10

Show "[I Wanna Know About 10](#)" Flocabulary video several times getting the students to dance and sing along.

Note: Teacher Guidance

1. Struggling students are placed near the presenter or assistant, who occasionally redirects the students' attention during whole group and small group activities.
2. **Whole Group should last about 15-20 minutes maximum.** If this time frame is too long for students, the Whole Group activities may be divided into two sessions. **Small Group should last about 15 minutes.** Using the pre-assessment results, the teacher will design the formation of small groups to reflect student capability and to drive the instruction throughout every lesson.
3. **Movement:** The teacher will conduct a movement/physical activity with the students between the anticipatory set and activity 1 to make sure students are not sitting still for too long.

For students who are EL, have disabilities, or perform well below grade level:

- Provide small group instruction, one-on-one assistance, and peer tutoring.
- Provide word problems with smaller numbers or use numbers only.
- Re-watch the video in the media center to strengthen understanding of the content.
- Have students draw simple pictures to solve the word problems with teacher guidance.

Extensions for students with high interest or working above grade level:

- Create additional word problems, including those with real-world point of view. Encourage use of larger numbers.
- Offer peer tutoring to classmates.
- Have students create and solve their own word problems.

Activity 1 (Whole Group): Acting Out Word Problems

Note: Before class, make a life-sized 10-frame and a life-sized number line on the floor with painter's tape.

Ask the students the following questions (possible student responses provided)

T: What happens when we add? (We get more. It gets bigger. ...plus.)

What happened to the caterpillar when it ate too much food? (It grew. He got fat. It got bigger.)

What happens when we subtract, which means to take away? (Things get smaller. It gets less.)

(Be prepared to re-direct incorrect responses with real-world examples.)

Read the following word problem aloud:

- There are 7 students in the classroom. Two students left the classroom. How many students are in the classroom now?

Use a random method to select students to act out the problem by having 7 students stand in the front of the classroom and have 2 of them walk away. Ask students how many students are left? (5)

Review the symbol for subtraction. Ask students to remind you what it means to subtract. Ask students if they know any strategies that will help them to be able to subtract. Possible answers might be: fold your fingers down, cross out pictures of objects, or take objects away (SMP.8).

Write the number sentence for the problem above: $7 - 2 = 5$.

Use a life-sized 10-frame mat to demonstrate the previous problem using students (SMP.4).

Write the following word problem putting 6 pencils in the 10-frame and having a student remove 2 pencils to see that there are 4 pencils left.

- Lee has 4 pencils. He gives 2 pencils to Ray. How many pencils does Lee have left?

Use the life-sized number line and pencils. Ask students what number sentence goes with the problem. $4 - 2 = 2$

Show the following word problem and use a number line to show how to move to the left when we are subtracting:

- 8 students are in line. 3 students walked away to sit at the blue table. How many students are still in line?

Write a number sentence to represent the problem: $8 - 3 = 5$ (SMP.2).

Draw examples on the board (or display on smartboard). Say, “Joy has 4 cookies. Joy shared 2 cookies with Dan. How many cookies does Joy have left?”

Solve the problem on the board along with students ($4-2=2$). Clear up any misconceptions. When cookies are taken away draw one line through it. If time allows demonstrate one more subtraction problem of your choice with a difference of 10 or less.

Note: Do not tell students that when we subtract, we always put the biggest or largest number first. Refer to the value of numbers not the size. In later grades, they will subtract numbers of greater value from numbers of lesser value and get negatives. Plant that seed even as early as Kindergarten.

Activity 2 (Teacher-led small group): Decomposing Word Problems Using Linking Cubes

Distribute linking cubes. Display real-world word problems one at a time. Solve the word problems together.

- Five cars are in the parking lot at McDonald’s. Two cars leave the parking lot. How many cars are in the parking lot now?

Have students determine how many linking cubes they need to represent the total number of cars in the parking lot. (5)

Have students determine how many linking cubes they need to take away to represent number of cars that left the parking lot. Have students count the number of cars (linking cubes) left in the parking lot.

Distribute **Handout 6.1: Real World Subtraction Problems** and have students solve using linking cubes (SMP.5). Read the problems aloud to the students and assist them in solving each problem

- Eight chickens were in the yard. Four chickens left when they saw a snake. How many chickens are in the yard now?
- Ten cats were in the tree. Two cats jumped out of the tree. How many cats are in the tree now?
- Ashley had 8 crayons in her box. She lost 2 crayons. How many crayons does he have in her box now?

Learning Centers

Note: Learning Centers are designed to be developmentally appropriate for all students. The teacher and assistant move about to observe and offer support, as needed. Learning centers will operate in conjunction with small group.

- ✓ **Dramatic Play Center/Music/Listening-** Students will make props for the story of the Very Hungry Caterpillar and act out the story. Students will listen to music and pretend to be a butterfly or some other type of insect.
- ✓ **Math Center-** Cut out 5 circles using construction paper of various colors. Count by 5's to 25 writing one number on each circle and then connecting the circles with glue. Students will also count by 10's to 50 and 20's to 100. Students will add an extra circle to make a head for each set of circles to make a caterpillar (SMP.6).
- ✓ **Computer** - Students will play math and reading games. The teacher will choose the website(s).
- ✓ **Reading Center/Writing Center-** Students will read and picture read fiction and non-fiction books. Students will write and illustrate their own stories about addition, subtraction, foods, insects, animals, etc. Students will reference the word wall, available books, charts and pictures in the classroom for assistance with words.
- ✓ **Science Center-** Provide a variety of fruits and vegetable. Throughout the unit, the students will observe the texture of the fruits and the vegetables. Decide which are alike and which are different and record their observations in their journal. Students will also smell the fruits and vegetables. Students will draw the fruit and or vegetable he or she likes best and write a sentence to explain why he or she likes it.
- ✓ **Art Center** – Provide a variety of art materials. Students will paint a picture of their choice or create their own work.

Reflection and Closing:

Read the following word problem:

Mom has 5 children. They were watching a movie. 2 of them fell asleep. How many children are still awake?

- ✓ Randomly select students who will solve the word problem by implementing a subtraction strategy they learned today: act it out, use manipulatives or use a pictorial representation and cross out the items being taken away.

Reflect on ways to help students grasp a better understanding of subtracting.

Homework

Students interview their parents to find out how they use subtraction at home or work. Students will share their findings in class the next day.

Handout 6.1: Subtraction Word Problems

8 chickens were in the yard. 4 chickens left when they saw a snake. How many chickens are in the yard now? _____



10 cats were in the tree. 2 cats jumped out of the tree. How many cats are in the tree now?



Ashley had 8 crayons in her box. She lost 2 crayons. How many crayons does he have in her box now? _____



For training or questions regarding this unit,
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