

SIOP[®] Lesson Plan Template 3

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Topic: Number, operation, and quantitative reasoning	Class: 2 nd Grade Mathematics	Date: November 20, 2012
Content Objectives: TSW learn addition and subtraction facts to 18. TSW be able to solve two-digit addition and subtraction problems. TSW be able to create fact families. TSW be able to form number sentences. TSW create story problems.		Language Objectives: TSW listen to a verbal problem and be able to translate it into an addition and subtraction sentence. TSW be able to write story problems using the key vocabulary terms.
Key Vocabulary: Add Sum Plus More than All together Greater than Total Amount Equals Subtract Minus Less than Fewer than Remain Difference Take away Fact families "+, -, =, <, >"	Materials (including supplementary and adapted): Chart paper Mathematical symbols written in construction paper Mini white boards Big dry-erase board Dry-erase markers Pencil Paper Unifix Cubes Addition and Subtraction Problems Worksheet "Subtraction Action" book by Loreen Leedy "Addition Annie" book by David Gisler	
Higher Order Questions: What are the key phrases in a math problem? How can you tell if the problem is asking you to add or subtract? What are the different strategies that can help you figure out the math problem?		

Time:	Activities
20 minutes	<p>Building Background Is the following:</p> <p>Links to Experience: To link the experience to the students, the students will do a hook activity. I will begin the lesson by refereshing the concepts of addition and subtraction. I will first read the "Addition Annie" book by David Gisler. I will then ask the students to raise their hand and tell me the key vocabulary terms that are present in the addition problems mentioned in the book. I will write these vocabulary terms down in a big piece of chart paper. The chart paper will have two columns, one labeled "Addition" and the other labeled "Subtraction". I will write down the the key vocabulary terms that the students mentioned in the addition column. Then I will read the "Subtraction Action" book by Loreen Leedy. I will then ask the students to raise their hand and tell me the key vocabulary terms that are present in the subtraction problems mentioned in the book. I will write these key vocabulary terms in the corresponding "Subtraction" column. As a whole class, we will read all of the vocabulary terms and then come up with any additional terms that we might think of. I will help the students define these words and help them determine the corresponding symbol (+, -, =, <, >). Each mathematical symbol will be written on a piece of construction paper and posted on the board (big enough for the students to see).</p> <p>Links to Learning: I will write down a math problem on the big dry-erase board and then read it out loud to the students. I will ask the students if the problem is an addition or subtraction problem. I will have students raise their hand to answer the question and I will ask them how they knew that the problem was asking them to add or subtract; the students will have to link the key vocabulary terms in the problem.</p> <p>Key Vocabulary: Add Sum Plus More than All together Greater than Total Amount Equals Subtract Minus Less than Fewer than Remain Difference Take away Fact families "+, -, =, <, >"</p>

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40 minutes	<p>Activities:</p> <ol style="list-style-type: none">1. First, I will do the hook activity mentioned above.2. Then I will pass out mini a mini white board and a dry-erase marker to each student.3. I will I will then present the students with the following addition and subtraction facts to 18: Addition Properties: The zero property states that zero added to any number is the same as the original number. The commutative (or order) property states that the order of addends does not matter: $3 + 4 = 4 + 3$. Subtraction Rules: There are two rules for using zero in subtraction. Zero subtracted from any number is the original number (this is the counterpart of the zero property of addition), and any number subtracted from itself equals zero. Counting on and counting back: For facts such as $9+1$ or $7+2$, you can count on from the greater number. Similarly, for facts such as $6 - 1$, you can count back. (Counting back is often harder to master than counting on.) Doubles and near doubles: If you have two groups of 8 objects, you have double 8, or 16, objects. Doubles facts are usually easy to remember, and can be used to learn other facts. Since $8 + 8 = 16$, and 9 is one more than 8, $8 + 9$ will be one more than 16, or 17. Using 10 to add 9: The place-value system makes adding 10 to a number easy – just increase the digit in the tens place by 1. You can use this to help add 9 to a number. Just add 10 to the number, then subtract 1. Fact families: A fact family is a group of related facts using the same numbers. One example would be $4 + 3 = 7$, $3 + 4 = 7$, $7 - 3 = 4$, and $7 - 4 = 3$. Fact families are a very powerful tool for mastering facts; once you know one fact in a family, you can work out the other facts in the same family. Fact families are also useful for solving problems with missing addends, such as $4 + \underline{\quad} = 7$. <ol style="list-style-type: none">4. I will write these facts down (along with an example) on the big dry-erase board for the students to see with clarity.5. The students will write down the names of these addition and subtraction facts in the mini white boards.6. I will write down an addition and subtraction math problem on the big dry-erase board.7. As a whole class, we will solve these problems by using the fact strategies that we just learned.8. I will leave this example up on the board.9. I will then have the students form small groups of three.10. I will pass out the Addition and Subtraction Problems Worksheet to each student.11. I will also pass out 18 unifix cubes per small group.12. I will tell the students that they are to solve all 48 problems with their group members. The students will be able to use their mini white boards for reference (addition and subtraction facts to 18 are written on them), and they are also able to use the unifix cubes in order to solve the problems. The students will have approximately 20 minutes to finish this activity.13. To conclude the lesson, I will have each group of students to develop one math problem.14. The students will write down this problem in their journal.15. I will have each team member make a contribution in solving that problem (the
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students are able to use unifix cubes to solve the problem).

Preparation:

- Clearly defined content objectives for students are posted on the dry-erase board
- Clearly defined language objectives for students are posted on the dry-erase board
- Content concepts appropriate for age and educational background
- Supplementary materials used to a high degree, making the lesson clear and meaningful (e.g., Chart paper, mathematical symbols written in construction paper, Mini white boards, Big dry-erase board, Dry-erase markers, Pencil, Paper, Unifix Cubes, "Subtraction Action" book by Loreen Leedy, "Addition Annie" book by David Gisler, and Addition and Subtraction Problems Worksheet)
- Adaptation of content to all levels of student proficiency (posting up all the key vocabulary terms on the big dry-erase board)
- Meaningful activities that integrate lesson concepts (e.g., whole class discussion, small groups, listening to me read the addition and subtraction books, the addition and subtraction worksheet) with language practice opportunities for reading, writing, listening, and speaking

Comprehensible Input:

- Speech appropriate for students' proficiency level (e.g., I will have to occasionally rephrase, repeat, or slow down my speech. This will be done at the student's request as well.) I will make sure that I give verbal cues when talking about the key vocabulary.
- Clear explanation of academic tasks are provided. I will repeat the instructions of the activity to make sure that the students know what is to be done. Also, when I say that something "is added" I will explain to the students that you combine or put together two numbers, and when I say that something "is subtracted" I will say that you take something away.
- A variety of techniques used to make content concepts clear (e.g., modeling, visuals, manipulatives, hands-on activities, demonstrations, gestures, body language).

Strategies:

- Ample opportunities for students to use the addition and subtraction fact families to 18.
- Consistent use of scaffolding techniques throughout lesson, assisting and supporting student understanding. I will scaffold the lesson by having the key words written on the board as a visual cue for the students. I will allow for the students to receive support and assistance from peers during group configurations (the grouping will be heterogeneous).
- A variety of question types used, including those that promote higher-order thinking skills throughout the lesson (e.g., comprehension, application, and evaluation questions)

Interaction:

- Frequent opportunities for interactions and/or discussion between teacher/student and among students that encourage elaborated responses about lesson concepts
- Grouping configurations support language and content objectives of the lesson
- Sufficient wait time for student response when I ask a question in class
- Ample opportunities for students to clarify key concepts and vocabulary by referring to the big chart paper that has the key vocabulary terms and corresponding mathematical symbols listed on it

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Practive/Application:

- Hands-on materials and/or manipulatives for students to practice using new content knowledge (the use of unifix cubes, mini white boards, and dry-erase markers)
- Activities for student to apply content and language knowledge in the classroom
- Activities that integrate all language skills (reading, writing, listening, and speaking)

Lesson Delivery:

- Content objectives clearly supported by lesson delivery
- Language objectives clearly supported by lesson delivery
- Students engaged approximately 90-100% of the period
- Pacing of the lesson appropriate to the students' ability level. The students are English language learners that are in the advanced level.

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<p>Time: n</p> <p>10 minutes</p> <p>10 minutes</p>	<p>Student Activities (Check all that apply for activities throughout lesson):</p> <p><i>Scaffolding:</i> <input checked="" type="checkbox"/> Modeling <input checked="" type="checkbox"/> Guided <input checked="" type="checkbox"/> Independent</p> <p><i>Grouping:</i> <input checked="" type="checkbox"/> Whole Class <input checked="" type="checkbox"/> Small Group <input type="checkbox"/> Partners <input checked="" type="checkbox"/> Independent</p> <p><i>Processes:</i> <input checked="" type="checkbox"/> Reading <input checked="" type="checkbox"/> Writing <input checked="" type="checkbox"/> Listening <input checked="" type="checkbox"/> Speaking</p> <p><i>Strategies:</i> <input checked="" type="checkbox"/> Hands-on <input checked="" type="checkbox"/> Meaningful <input checked="" type="checkbox"/> Links to Objectives</p> <p>Review and Assessment (Check all that apply):</p> <p>Individual <input checked="" type="checkbox"/> Group <input checked="" type="checkbox"/> Written <input checked="" type="checkbox"/> Oral <input checked="" type="checkbox"/></p> <p><i>Review Key Vocabulary:</i> I will go around and observe the students as responses are occurring. I will note any student who is having difficulty or is not responding. I will clarify the pronunciation of the key terms to the individual students if needed. I will observe the cube trains and number sentences that the students have done throughout the activity. I will have each group of students share one problem that they wrote in their group, and each team member will make a contribution in solving that problem (the students are able to use unifix cubes to solve the problem).</p> <p><i>Review Key Content Concepts:</i> I will write several more example problems on the big dry-erase board. I will have the students raise their hands and tell me the related number family facts.</p> <p>Assessment I will then have the students create and solve their own addition and subtraction story problems (the students are able to use unifix cubes to solve the problems). I will then ask them to write down the related number family facts for both of the story problems that they created. The students will not be rushed in any of their work because if they are rushed then they will not be able to grasp the content.</p>
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