GO Math 1st Grade

Chapter 3: Extending strategies for solving addition and subtraction problems	**Days in Unit:14** **Oct 31-Nov16**

Envision Math Alignment:

1.OA.1: Topic 1 – Lessons 1, 2, 3, 4, 5, 6, and 8, Topic 2 – Lessons 4, 5, 6, 7, 8, and 11, Topic 4 – Lessons 6, and 10, Topic 5 – Lessons 1, 2, 3, and 4, Topic 6 – Lessons 1, 2, and 7
1.OA.6: Topic 2 – Lesson 1, 2, 3, 4, 6, 7, 8, 9, and 11, Topic 3 – Lesson 3, 4, and 5, Topic 4 – Lesson 1, 2, 3, 4, 5, 6, 8, 9, and 10, Topic 5 – Lesson 1, 2, 3, 5, 6, and 7, Topic 6 – Lesson 1, 2, 3, 4, 5, and 6
1.OA.7: Topic 1 – Lessons 5 and 8, Topic 2 – Lesson 10, Topic 4 – Lesson 1
1.MD.4: Topic 14 – Lessons 1, 2, 3, 4, 5, 6, and 7

Unit Summary:

In this unit data provides an authentic context for students to develop appropriate strategies to reason about and solve addition and subtraction problems. In particular, this unit introduces "compare" problems. Because compare problems are relatively difficult for students to master, **this unit should provide students time to grapple with the misleading language and difficult contexts involved in these problem types.**

Focus Standards and *Specific Guidance for this Unit *(The MCCR Standard is listed along with specific guidance on what part of the standard to teach in this unit)*

0perations and Algebraic Thinking — 1.OA

A. Represent and solve problems involving addition and subtraction.

1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Teacher Notes: **1.OA.1** is addressed in its entirety in this unit to include "compare" problems (the most difficult problem type). The other problem types should also be revisited during this unit. Students will have the opportunity to discuss how this problem type relates to the previous ones they have encountered.

1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.3. Apply properties of operations as strategies to add and subtract. Ex. If 8+3=11 is known , then 3+8=11 is also known. (Commutative property of addition.) To add 2+6+4, the second two numbers can be added to make a ten, so 2+6+4 = 2+10=12. (Associative property of addition.)

C. Add and subtract within 20.

1.OA.6. Add and subtract within 20, ~~demonstrating fluency for addition and subtraction within 10~~. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); ~~and creating equivalent but easier~~

~~or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).~~

Teacher Notes: **1.OA.6** will be addressed in its entirety in unit 18 in which students are expected to demonstrate fluency.

D. Work with addition and subtraction equations.

1.OA.7. Understand the meaning of the equal sign, ~~and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*~~

Teacher Notes: **1.OA.7** is repeated in full in unit 13 to provide the opportunity for students to reason about equality and expressions.

Measurement and Data – 1.MD

C. Represent and interpret data.

1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

Teacher Notes: **1.MD.4** is a useful context for practicing compare problem types and Level 3 strategies and provides opportunity for students to construct arguments about the context and strategies involved.

LEARNING OUTCOMES:

- Develop appropriate strategies to solve addition and subtraction problems to include "compare" problems.
- Understand the meaning of the equal sign.
- Organize, represent and interpret data.

LEARNING TARGETS:

- **1.OA.1.1** Define clue words
- **1.OA.1.2** Locate clue words to solve problems.
- **1.OA.1.3** Match clue words to operation symbols in a word problem.
- **1.OA.1.4** Name and match the operation to its symbol.
- **1.OA.1.5** Solve addition word problems with unknowns in all positions.
- **1.OA.1.6** Solve subtraction word problems with unknowns in all positions.
- **1.OA.1.7** Solve addition word problems within 20.
- **1.OA.1.8** Solve subtraction word problems within 20.
- **1.OA.1.9** Model/Show/Draw/Write addition of numbers less than 20 with manipulatives.
- **1.OA.1.10** Model/Show/Draw/Write subtraction numbers less than 20 with manipulatives.
- **1.OA.6.2** Solve addition problems by identifying the greater number and counting on.
- **1.OA.6.3** Solve addition facts to 10 within a given time frame to build fluency.
- **1.OA.6.4** Solve addition problems by making 10 and then counting on. 8+2=10 plus 4 more 8+6=___
- **1.OA.6.5** Add and subtract using fact families in various ways. 7+3=___, 3+___=10
- **1.OA.6.6** Add using doubles and doubles plus or minus 1. 8+7=___, 1+7+7=___
- **1.OA.6.7** Solve subtraction facts to 10 within a given time frame to build fluency.
- **1.OA.6.8** Solve mixed addition and subtraction problems within 20.

- **1.OA.7.1** Decide if addition or subtraction number sentences are equal.
- **1.MD.4.1** Identify the parts of a bar graph (title, numbers, categories).
- **1.MD.4.2** Identify the parts of a pictograph.
- **1.MD.4.3** Collect data by using tally marks.
- **1.MD.4.4** Collect data from up to three categories.
- **1.MD.4.5** Organize and represent collected data.
- **1.MD.4.6** Create a graph using information I have collected.
- **1.MD.4.7** Compare results to answer questions.
- **1.MD.4.8** Answer questions about collected data.
- **1.MD.4.9.** Ask questions about collected data.

Unit Vocabulary:

- Add
- Addition
- Adding To
- Putting Together
- Counting On
- Making Ten
- Subtract
- Subtraction
- Taking From
- Taking Apart
- Decomposing
- Comparing
- Word Problems
- Solve
- Equations
- Symbol
- Unknown Number
- Represent
- Relationship
- Clue Words
- Operation
- Model
- Greater Number
- Fluency
- Fact families
- Doubles
- Equal Sign
- Organize
- Interpret Data
- Categories
- Data Points
- Bar Graph
- Pictograph
- Tally Marks
- Collect Data

Essential Questions:

- How do I use clue words to help me understand a word problem?
- What manipulatives can I use to help me do addition and subtraction?
- What different strategies can I use to check my answer for addition and subtraction?
- What does the equal sign mean?
- How can I determine if two sides of an equation are equal?
- What strategies can I use to add and subtract quickly?
- How can I organize data using tally marks?
- What is a bar graph?
- What do the parts of the bar graph represent?
- What is a pictograph?
- What do the parts of the pictograph represent?
- How do I create a graph using data I have collected?
- How can I find out how many more or less objects are in one category versus another? What questions can I ask and answer about the data I've collected?

Unit 7: Extending strategies for solving addition and subtraction problems
Suggested Instruction Time: 15 days

ONLINE INSTRUCTIONAL VIDEOS:

- First grade word problem instructional video

https://www.youtube.com/watch?v=q7mi24ClSMw

- Subtraction word problem instructional video

https://www.youtube.com/watch?v=9Z2gpbYiEXo

- Equal sign balance instructional video

https://www.youtube.com/watch?v=12xkKtNTAYQ

- Equal Means the Same, video with song

https://www.youtube.com/watch?v=CKrL4K4GGMM&list=RDCKrL4K4GGMM#t=5

INTERACTIVE SMARTBOARD ACTIVITIES
(Use to introduce lessons daily and/or for technology centers):

Note: The students can take turns answering the questions and the teacher can also allow the student to maneuver the mouse and actually host the game.

- Pirate Word Problem Game

http://www.math4childrenplus.com/addition-word-problems-classroom-pirate-game/

Additional Online Games/Activities-

http://www.mathblaster.com/parents/math-activities/1st-grade-math-activities

http://www.mathplayground.com/common_core_state_standards_for_mathematics_grade_1.html

http://www.sheppardsoftware.com/mathgames/Add%20Like%20Mad%20Math/AddLikeMad_easy.htm

http://www.abcya.com/subtraction_game.htm

http://www.abcya.com/first_grade_computers.htm#numbers-cat

http://gregtangmath.com/breakapart

http://www.adrianbruce.com/maths/

http://www.education.com/games/math/first-grade/

http://www.math-play.com/1st-grade-math-games.html

http://eduscapes.com/sessions/experience/first.html

http://oswego.org/ocsd-web/games/mathmagician/maths1.html

http://www.mathplayground.com/wordproblems.html

http://mathsframe.co.uk/en/resources/resource/49/number_bonds

http://www.aaamath.com/B/g18c_sx1.htm#section2

http://www.crickweb.co.uk/ks2numeracy-calculation.html#ncmenu

http://www.gameclassroom.com/skill/3173/addition-subtraction-and-equal-signs

http://www.softschools.com/math/data_analysis/bar_graph/activities/vegetables_bar_chart/

http://mrnussbaum.com/graphmaster-2/

http://www.turtlediary.com/math-games/graph-and-tally.html

https://www.ixl.com/math/grade-1/interpret-bar-graphs

http://www.beaconlearningcenter.com/WebLessons/PlayBall/default.htm

WHOLE GROUP ACTIVITIES:
(Instructional strategies, guided practice, independent practice)

Note about word problems: In this unit students will practice addition and subtraction strategies to solve word problems. TTW continue to model reading word problems, finding clue words, determining if problem is addition or subtraction, write equation, determine strategy and solve. Teacher will choose one or more of the following activities daily.

Note about the equal sign: The equal sign in mathematics means that the quantity on the left hand side is the same as the quantity on the right hand side. Students need to understand that quantities can be represented in many different ways. This highlights the importance of students understanding that numbers can be decomposed into many different representations. Students need to see that 6 = 4 + 2, 6 = 5 + 1, etc. So when students are asked to make a statement such as 4 + 2 = 5 +?,true, they have an understanding of the various representations of 6.

Act out Math Story-
Have students sit in a big semi-circle facing front. The teacher will be using students to act out math stories. Begin the lesson with add to story problems.
TTW say: Good morning, boys and girls. Welcome to Math Stories Theater! You will be watching some math stories and have a hand at solving them. First, close your eyes. When I tap you on the shoulder, quietly come up to the front.
TSW: (Close eyes.)
TTW: (Tap 5 students to come up. Have 1 of the students hide behind the bookcase.)
TTW say: Open your eyes. How many students do you see?
TSW say: 4 students.
TTW say: There are 4 students dancing at a party. After a little while, along came their dancing friend, [name of the hiding student]. How many students are dancing at the dance party now?

TSW say: 5 students.
TTW say: How many students were dancing at first?
TSW say: 4 students.
TTW: Write on board and then ask - How many more students came over to dance?
TSW say: 1 more student.
TTW: Write answer on board and say - Think about the math story you just watched. Turn and tell your partner the number sentence that tells how many students were dancing in all.
TSW: (Turn and talk.)
TTW say: Say the number sentence.
TSW say: 4 + 1 = 5.
TTW: Write on the board and say - What is the total?
TSW say: 5.
TTW say: What does 5 equal? What are the 2 parts that make 5?
TSW say: 4 and 1.

Solve the Story Problems-
Materials Needed: Solve the Story Problems worksheet (top half)
http://www.education.com/download/worksheet/114368/solving-story-problems.pdf
- Reached limit for month

Students use clue words to determine addition or subtraction equation and then solve problems. Students are encouraged to draw pictures or use manipulatives if needed.

Pizza Party-
Materials Needed:
- Pizza Party Worksheet

http://www.education.com/download/worksheet/114967/pizza-math.pdf
- Reached limit for month

- Counting cubes (for students that need them)
- White boards, one per student (can use cardstock in sheet protectors)

TTW say: Quinn is celebrating his birthday with a pizza party! Help him order the correct amount of pizza by solving the word problems. You will need to either add or subtract to find a solution. Each pizza is = 8 slices. Students will complete the Pizza Party worksheet.
TTW allow students to work with a partner or alone to complete the activity. Students are encouraged to use manipulatives or draw pictures to help them solve problems.

If/Then-
There is an inverse relationship between addition and subtraction. Example: Since 3 + 7 = 10 then the following are also true:

10 - 3 = 7 10 - 7 = 3

Similar relationships exist for subtraction.

Example: Since 10 - 3 = 7 then the following are also true:

3 + 7 = 10 7 + 3 = 10

An equation is balanced or the same on either side of the equals (=) sign. If exactly the same thing is done to both sides of the equation, it will still be balanced or equal.

In the example above we start with the equation 3 + 7 = 10:

Subtract the same number from both sides 3 + 7 – 3 = 10 – 3

On the left side the 3 and -3 produce 0 which leaves 7 = 10 – 3

Turning the equation around to be in more normal form 10 – 3 = 7

Give students the following problems to solve on their white boards or own paper as time allows:

If 10 – 9 =1 Then 1+_____=10
If 2 – 1 =1 Then 1+_____=2
If 9 – 2 =7 Then 7+_____=9
If 8 – 7 =1 Then 1+_____=8
If 7 – 3 =4 Then 4+_____=7

Students work with a partner while teacher circulates. When students finish, teacher calls on partners to come up and put the problems on the board and explain answers to the class.

Math By Myself-
Materials Needed: Word problems worksheet
http://www.education.com/worksheets/word-problems/

- Reached limit for month

Each student will complete the worksheet of word problems to include circling the clue words, determining addition or subtraction, drawing a picture and an equation for each problem.

Writing In Math-
Materials Needed: Pencil and paper
Students will complete the activity individually and then work with a partner to check each other's work. Students will create a picture story and then an equation. Finally students will write a sentence to explain the answer. Students should compare picture stories and strategies used to solve the equations. When finished teacher will call on students to share with the class. Teacher should differentiate as needed.

Word Problems Practice-
Materials Needed: Word Problems Practice worksheet (page 1-3 of document)
http://www.lakeshore.wnyric.org/Page/3492

TTW model reading a word problem, find clue words, determine addition or subtraction, write equation, determine strategy and solve.
Students work with a partner or individually to complete the Word Problems Practice Worksheet. Students are encouraged to draw pictures or use manipulatives if needed.

Valid Equalities-
Students decide if the equations are true or false and explain their answers.

1. 2+5=6
2. 3+4=2+5
3. 8=4+4
4. 3+4+2=4+5
5. 5+3=8+1
6. 1+2=12
7. 12=10+2
8. 3+2=2+3
9. 32=23

The purpose of this task is to help broaden and deepen students understanding of the equals sign and equality. For some students, an equals sign means "compute" because they only see equations of the form 4+3=7. In this task, students must attend to the meaning of the equal sign by determining whether or not the left-hand expression and the right hand expression are equal.

Solutions: While the question asks for simple "true" or "false" answers, complete solutions include some valid explanation. There are many possible explanations, so we give a variety of kinds of explanations in these solutions.

1. False. 2+5 equals 7 and not 6 .
2. True. Both sides equal 7 .
3. True. Since 4+4=8 , 8=4+4 .
4. True. We can combine the three and the two on the left to get 5 , and then after

reordering both sides are 4+5 .

5. False. 3+5 is 8 but 8+1 is 9.
6. False. 1+2=3 , which is less than 12 .
7. True. If you count up two from 10 you get 12 . (Alternately, 12 means one ten and two ones.)
8. True. You can always change the order of numbers being added.
9. False. 32 is 3 tens and 2 ones. 23 is 2 tens and 3 ones.

Equality Number Sentences-
Materials Needed: Equality Number Sentences
https://www.illustrativemathematics.org/content-standards/tasks/475

Compare the number of circles in each box. If they are equal, write a number sentence. For example:

4+3=5+1+1
If they are not equal, write "not equal."
Students complete the problems a. through f. on the attached resource.

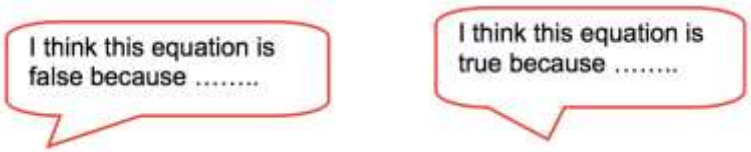
Note: The purpose of this instructional task is to help students understand the meaning of the equal sign and to use it appropriately. The idea is that students should be comparing the number of circles in each of the rectangles and to write an equation that reflects the fact there are an equal number in each of the boxes (when this is the case). The teacher may need to provide additional explanation to help students understand exactly how the number sentences are intended to represent the pictures. For example, if the groupings indicate an equality such as "2 + 5 = 3 + 4", then the answers "7" or "7 + 7 = 14" are not representing this equality.

True or False-
Materials needed: True or False equation cards and boards
https://www.pinterest.com/pin/549580579269444422/

1. Work with a partner. Take turns to turn over a card and decide whether the equation is true or false.
2. Place the card on the board. Explain why you think the equation is true or false.

Example:

True	False
6 = 4 + 2	5 + 2 = 8



3. Keep taking turns until you have placed all the cards on the board.

Basketball-

Materials Needed: Basketball game cards and recording sheets
http://betterlesson.com/lesson/resource/2645766/basketball-cards_recording-sheet-pdf?from=resource_title
*Must have a username and password

TTW explain the game. After that, we will practice the game all together.

- Both partners pull a basketball card.
- Partners record their number sentences.
- Each partner figures out how many points he/she got.
- Partners decide: Did we tie? Are the number sentences equal?

TTW play the game with another student, having that student work out their side on chart paper while teacher does hers. Throughout this lesson, we are requiring work for each number sentence as evidence of student thinking.
Example:
Step 1: Both partners pull a card.

TTW say: My card says 3+4. ____'s card says 8 - 1.

Step 2: Partners record their number sentences

Step 3: Each partner figures out how many points he/she got.

TTW reinforce the importance of proving your answer and both the student and teacher will draw their strategy.

Step 4: Partners decide: Did we tie? Are the number sentences equal?

TTW count on for her card aloud: 3, 4, 5, 6, 7. So 3+4 is the same as 7.(Highlight child's strategy)-Is 3 + 4 the same as 8 – 1?
TTW model writing the number sentence and thinking out loud, "3 + 4 is the same as 8-1, so I can write 3+4=8-1"
TTW model another round with a different student, this time making sure they are not equal.

We're Tied-
Materials Needed: We're Tied recording sheet
http://betterlesson.com/lesson/resource/2645661/weretiedrecordingsheet-pdf
*Must have a username and password

You are going to play Double Compare to help you practice determining if two number sentences are equal.

Game Rules: Each player draws 2 cards. Each card has a number on it. Each player adds their own numbers together.

- Ask the question: Are we tied? Are we equal?
- Record on the recording sheet.

For the recording sheet, I'll have students circle >, < or =. This is a great way to extend their understanding of "Greater Gator". The standard (1.NBT.3) focuses only on 2 digit numbers, however this lesson allows students to expand how they are able to use these inequality symbols to other mathematical statements. I'll have students practice a couple of rounds and I'll model recording. See Game Rules Chart for example!
http://betterlesson.com/lesson/resource/2639263/game-rules-chart

*Must have a username and password

Increasing Rigor Questions-
1. Sally said 1+4=5+3. Sam says she is wrong. Who is correct? Use numbers, pictures and/or words to show your thinking.
2. Consider this problem: 3+7=10. What does the equal sign mean?
3. Trisha said 11=13 - 4 is not true. How could Trisha fix this problem to make it true?

Weather Graph-
Materials Needed: Weather data collection worksheet
https://www.teachervision.com/graphs-and-charts/printable/45104.html

http://www.education.com/worksheet/article/weather-graph/
*Reached the limit for the month

The purpose of this task is for students to represent and interpret weather data, as well as answer questions about the data they have recorded. Teachers could modify this task to include the most common weather in their local area. Students collect data throughout the week and discuss results after a set amount of days' data is collected.

What's in Our Trash-
Materials Needed: Graphing Trash Material Activity Sheet
http://r-board.org/wp-content/uploads/2011/06/Graphing-Trash.pdf

Most students discard items in the classroom without thinking about what kinds of materials they are throwing away. This activity increases student awareness of the number and kinds of materials they discard. It also encourages them to think about taking action by reusing and recycling some of these items.
1. Let students work in groups of two or three. Have each group save materials they would ordinarily throw away. They can use previously discarded classroom items such as papers, and select clean, safe items.
2. Have each group pick ten trash items at random. Lead a discussion on the kinds of materials the students have selected. Paper and plastic items will be common, but Styrofoam, wood, cloth, metal, and items made of two or more materials, paper and plastic packaging for pencils, for example, may also be found.
3. Distribute a copy of the Graphing Trash Material Activity Sheet to each group. Read the title and captions. Help students decide on, and write names for, the remaining categories on the graph. You might want to title one of these categories as "Other".
4. Have the students predict how many items will be in each category. Students can record their predictions on the sheet.
5. Help students count their trash materials and fill in the appropriate number of spaces for each category. Have each group report its results to another group and compare their findings.
6. As they work, circulate and see what kinds of things they are discussing. Prompt them as necessary to notice categories with no items, categories with equal numbers of items, and so on.
6. Lay the graphs on the floor or on a table. Have students gather around them as you or a group of member finish counting the number of items in each category. Compare the totals with the predictions.
7. Discuss some of the trash items that could be reused or recycled. Let each group draw pictures on the activity sheet of items that could be reused or recycled.
8. Have a representative of each group show and tell what the group has decided. Use some of the students' ideas for reusing and recycling materials, if possible.

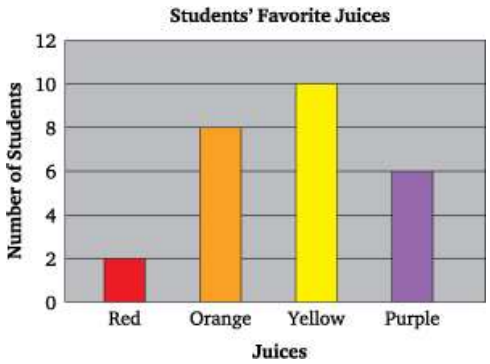
Pet Bar Graph Activity-
Materials needed: Pet Bar Graph Activity worksheet
https://www.superteacherworksheets.com/graphing/bar-graph-simple-6_TWNBN.pdf
Students read the graph and answer the questions. Teacher may choose to let students work with a partner.

Favorite Juice-
Materials Needed: Snap cubes if needed, Graph worksheet, one per student
http://www.math-aids.com/Graph/

During this lesson, students apply what they know about comparison subtraction by constructing bar graphs and using the graphs to answer questions.
Have the students indicate their favorite juice by choosing a like-colored connecting cube, for example, red for tomato juice, orange for orange juice, yellow for apple juice, and purple for

grape juice. Record this data on the chalkboard.

Then ask four volunteers to each collect all the cubes of one color and snap them together. Place the connected cubes side by side to form a bar graph. Then ask such questions as "How many more children liked orange juice best than liked grape juice best?" Encourage children to pose related questions and call on classmates to answer them. Then model for the students how to translate the cube graph to a graph on paper. You may wish to model the bar graph on the overhead projector.
The example below shows the following results: tomato juice (2), orange juice (8), apple juice (10), and grape juice (6). Encourage students to draw the bar graph on their own graph paper.



Students should record, on paper, some questions that they answered from the bar graph.

Roll the Dice Graph-
Materials Needed: Roll the Dice Graph worksheet
https://www.pinterest.com/pin/218213544417737325/
Students work with a partner or alone. Students roll the dice (amount of times determined by teacher) and make a bar graph to represent their data. Students compare their graph to another person or group in the class. Teacher can make a graph on the board to represent the data collected by the whole class. For example: How many times each number was rolled, the most and the least, etc.

Additional Graphing Activities Found Here:
http://www.mathsisfun.com/activity/dice-experiment-2.html
*ONLINE ACTIVITY
http://www.beaconlearningcenter.com/WebLessons/KidsHavePets/default.htm
*ONLINE ACTIVITY

http://teachers.cr.k12.de.us/~galgano/1linkstemp.htm

Additional Optional Activities Found Here:
http://www.education.com/worksheets/word-problems/
*REACHED THE LIMIT FOR THE MONTH

http://achievethecore.org/content/upload/Grade%201%20EngageNY%20lesson%20-%20addition%20math%20stories%20final06.24.14.pdf
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https://docs.google.com/file/d/0B9F6LRS2dNVzU2twZWdud1JYbWc/edit

http://betterlesson.com/lesson/resource/2807803/student-whiteboard-strategies

http://www.helpingwithmath.com/by_subject/word_problems/word_problems.htm

MINI LESSONS/CLOSURE ACTIVITIES:

Skip Counting-
Skip count by 2s, 5s and 10s. Students must practice regularly to ensure that they retain and achieve fluency.

Word Problems-
TTW give students one or more of the following word problems to solve. TTW allow students to work with a partner (optional). TTW call on students to come up to the board, circle the clue words, write the equation, determine strategy and solve. Students can draw pictures if needed.
1. (Join) There were 5 mice playing in a field. 10 more mice came and started playing too. How many mice were in the field altogether?
2. (Separate) 12 mice were nibbling on a piece of cheese. 7 mice got full and stopped eating. How many mice were still eating?
3. (Compare) 9 mice were eating cheese. 6 mice were eating bread crumbs. How many more mice were eating cheese than were eating bread crumbs?
4. (Part-Part-Whole) There were 5 mice sleeping in the attic and 8 mice sleeping in the basement. How many mice were sleeping in the house?
5. (Join) 8 ladybugs were crawling around in the garden. 2 more ladybugs joined them. How many ladybugs were in the garden altogether?
6. (Separate) There were 10 ants collecting food for the colony. 3 ants found food and went back to the anthill. How many ants were still looking for food?
7. (Compare) A brown grasshopper jumped 10 feet. A green grasshopper jumped 9 feet. How much farther did the brown grasshopper jump than the green grasshopper?
8. (Part-Part-Whole) A spider caught 4 flies in its web. It also caught 3 beetles. How many insects did the spider catch altogether?

Vocabulary word "Equal" –
Discuss vocabulary word "Equal" - Emphasize the meaning of the equal sign as a balance. It is important for students to learn that both sides of the equal sign are equivalent. Write problems that have the answer to the left of the equal sign such as 8 = 3 + 5. Include problems that ask students to show number relationships.

True or False?

Write several equations on the board such as: 5 + 3 = 7, 4 + 4 = 8, 6 - 3 = 3, 2 + 8 = 11. The student task is to decide which of the equations are true and which are false. As the school year progresses, try using more difficult equations such as 8 - 3 = 4 + 3.

Journal Prompts-

- Draw two sets that are equal. Now draw two sets where one set is greater than the other. Explain your drawings.
- Cassandra wrote 3 + 7 = 10 in her notebook. What does the "=" mean?

Equation Practice-

Teacher will put problem on the board and call on students to come up to the board to solve it:
http://www.math-aids.com/Mixed_Problems/Equality_Equations.html

Exit Tickets-

Students are given a number sentence and choose the number sentence that is equal
http://betterlesson.com/lesson/resource/3180018/equality-exit-ticket-pdf?from=resource_title

http://betterlesson.com/community/document/2782163/vertical-bar-graph-exit-ticket-docx

- **NEED A USERNAME AND PASSWORD FOR THIS SITE**

Graph Practice-

TTW will use one of the following questions to make a simple pictograph, bar graph or graph with tally marks to sum up the lesson each day.

- What's your favorite pizza topping?
- What is your favorite kind of animal?
- Would you rather go to the beach or the mountains if you could?
- What is your favorite kind of candy?
- Would you rather write in pen or pencil?
- Would you rather eat chips or pretzels?
- Do you like to play in the rain?
- Would you rather go to the mall or go to the movies?
- What is your favorite kind of ice cream?
- Would you rather color with crayons, colored pencils or markers?

Extend if time allows to discuss data collected.

40 Ways to Leave a Lesson-

https://docs.google.com/file/d/0B-0npvI9xzTBMGs1SUUzeEN3RU0/edit
www.mathworksheetisland.com

SMALL GROUP/CENTER ACTIVITIES:

https://www.pinterest.com/explore/word-problems/

http://www.smartfirstgraders.com/addition-games.html

http://www.softschools.com/math/word_problems/worksheets/

http://www.firstgradegarden.com/2011/09/math-stations-set-1.html

http://www.brighthubeducation.com/lesson-plans-grades-1-2/68538-counting-to-100-math-activities-for-first-graders/

http://www.thecurriculumcorner.com/thecurriculumcorner123/2014/03/25/domino-math-addition-subtraction/

http://mrsjohnsonsfirstgrade.blogspot.com/2011/05/math-center-games.html

SUMMATIVE ASSESSMENT RESOURCES:

https://hcpss.instructure.com/courses/9414/pages/1-dot-oa-dot-a-1-assessment-tasks

https://hcpss.instructure.com/courses/9414/pages/1-dot-oa-dot-c-6-assessment-tasks

https://hcpss.instructure.com/courses/9414/pages/1-dot-oa-dot-d-7-assessment-tasks

https://hcpss.instructure.com/courses/9414/pages/1-dot-md-dot-c-4-assessment-tasks

http://www.crickweb.co.uk/ks2numeracy-properties-and-ordering.html#number_pairs

http://www.math-salamanders.com/1st-grade-math.html

http://illuminations.nctm.org/Activity.aspx?id=3566

https://www.orglib.com/1.oa.6-worksheet-as-assessment-viewTestQuestions_0d1520c2bb_8521a3a648b6468f8e96c9d0f0e9af01_265.html

http://www.internet4classrooms.com/grade_level_help/test_taking_assistance_first_1st_grade.htm

FORMATIVE ASSESSMENTS:

http://www.ehow.com/about_5419008_types-formative-assessment.html

http://www.edutopia.org/resource/checking-understanding-download

http://wvde.state.wv.us/teach21/ExamplesofFormativeAssessment.html

ADDITIONAL ONLINE RESOURCES (Bellwork):

Worksheets-

www.mathworksheetisland.com * Link does not work

http://mathworksheetwizard.com/firstgrade-math.html

http://www.mathworksheets4kids.com/activities/1st-grade.php

http://www.tlsbooks.com/mathworksheets.htm

Optional add/subtract word problem worksheets:
http://www.k5learning.com/free-math-worksheets/first-grade-1/word-problems

http://www.mathworksheetsland.com/1/addsubunder20/

http://www.worksheetworks.com/math/basic-operations/addition-up-to-20.html

*Create a worksheet online

http://www.worksheetworks.com/math/basic-operations/drills/subtraction-drill.html
*Create a worksheet online

Optional equality problem worksheets:
http://www.worksheetsplus.com/EqualityWorksheet.html

- LINK DOES NOT WORK

Optional data worksheets:
http://www.education.com/worksheets/first-grade/graphing-data/
*Needs a username

http://www.math-salamanders.com/bar-graphs-first-grade.html

http://www.theteachersguide.com/bargraphworksheets.htm

Free printable number cards:
http://www.activityvillage.co.uk/number-flash-cards-1-30

Free printable ten frames:
http://www.mathwire.com/templates/tenframemat.pdf

Free printable dominoes:
http://www.dltk-cards.com/dominos/

Free printable spinners:
http://cte.sfasu.edu/wp-content/uploads/2012/09/Templates-for-Spinners.pdf

Free printable hundreds charts:
https://www.superteacherworksheets.com/hundreds-chart.html

Virtual manipulatives can be found here:
https://grade1commoncoremath.wikispaces.hcpss.org/file/view/Directions%20for%20Virtual%20Manipulatives%201.NBT.2.pdf/519489918/Directions%20for%20Virtual%20Manipulatives%201.NBT.2.pdf

Practice for Math Fact Fluency Activities:
http://www.interventioncentral.org/teacher-resources/math-work-sheet-generator

http://www.abcya.com/math_facts_game.htm

http://www.playkidsgames.com/games/mathfact/mathFact.htm

http://www.factmonster.com/math/flashcards.html

http://www.fun4thebrain.com/addition.html

http://www.mathplayground.com/index_addition_subtraction.html

http://www.math-drills.com/addition.shtml

http://mrshillsallstars.weebly.com/addition-without-regrouping.html

https://www.pinterest.com/janwray/double-digit-addition-subtraction/

http://www.theteachersguide.com/twodigitadditionworksheets.htm

DIFFERENTIATING RESOURCES:
http://www.internet4classrooms.com/common_core

http://www.k-5mathteachingresources.com

http://schoolwires.henry.k12.ga.us/cms/lib08/GA01000549/Centricity/Domain/45/Dare%20to%20Differentiate.pdf

http://www.internet4classrooms.com/common_core/count_120_starting_at_any_number_number_operations_in_base_ten_first_1st_grade_math_mathematics.htm

http://www.internet4classrooms.com/common_core/use_addition_subtraction_within_20_solve_operations_algebraic_thinking_first_1st_grade_math_mathematics.htm

http://www.senteacher.org/worksheet/86/Math-Follow-Me-Cards.html