**Grade 1 Quarter 1 Day 32**

**1.OA.5-** Relate counting to addition and

subtraction (eg. by counting on 2 to add 2.)

**1.OA.6-** Add and subtract within 20, demon-

strating fluency for addition and subtraction

within 10. Use strategies such as counting on;

making ten (eg. 8+6=10+4=14); decomposing

a number leading to a ten (eg. 13-4 = 13-3-1=

10-1=9); using the relationship between

addition and subtraction (eg. knowing that 8+

4=12; 12-4=8); and creating equivalent but

easier or known sums (eg. adding 6+7=

6+6+1=13).

**Materials Needed:**

* Math Expressions Volume 2
  + TE pp. 928-903
  + SAB pp. 371-372

Vocabulary

* Add
* Subtract

###### Math Expressions Lesson

***Extension Lesson #2***

**Activity 1**

1. Place a large number line labeled 0-12 on the floor. Ask for ideas about why the line is called a number line. Write 6+4 on the board. Have a child start at 0 and take 6 steps to 6. Ask what should happen next. (Take four more steps). Ask children for the sum and have a child write 10 on the board.
2. Invite children to suggest how they could record what just happened. Draw a number line on the board, then draw an arrow to represent the walk from 0-6 and another to show 4 more steps to 10. Have children take turns providing other addition problems and telling classmates how to walk the number line to find the sums. Have them record the answer using a number line and arrows. (Use number lines from Days 11 & 12)

**Activity 2**

1. Have children use SAB p. 371 to show their sums. When children complete the page invite them to discuss when it’s easier to count on rather that use a number line to add. (Counting on is easier when the number being added is 1, 2, or 3.

**Activity 3**

1. Draw a number line on the board and write 9 – 3 below it. Ask children if they have ideas about how they can use arrows to represent subtraction on the number line. Ask a child to start at 0 and draw an arrow to 9. Then suggest drawing an arrow back towards 0 a distance of 3 units. Ask what that number is. (6). Discuss how the arrows show 9 – 3 = 6. Have children turn to SAB p. 372 and look at the number line and subtraction problem. Review how to draw the arrows as children solve exercise 1-4.

**Additional Teacher Notes:**

* Use number lines from Days 11 &12 to solve problems.

Assessment

Draw a 0-10 number line. Show how to find the sum for 6 + 2 using the number line and arrows.

Use a number line to solve 9 + 3 – 6. Explain your thinking. *Taken from Math Writing Prompts TE p. 931*

**Homework**

Homework p. 309

**Grade 1 Quarter 1 Day 33**

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| **1.OA.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2)  **1.OA.6-** Add and subtract within 20,  demonstrating fluency for addition and sub-  traction within 10. Use strategies such as  counting on; making ten ( eg. 8+6= 8+2+4=  14); decomposing a number leading to a ten  (eg. 13-4= 13-3-1=10-1=9); using the relation-  Ship between addition and subtraction (eg.  knowing that 8+4=12, 12-4=8); and creating  equivalent but easier problems (eg. 6+7=6+6  +1=13)  **1.OA.8-** Determine the unknown whole num-  ber in an addition or subtraction equation re-  lating 3 whole numbers.  *For example, deter-*  *mine the unknown number that makes the equation*  *True in each of these: 8+?=11; 5=\_\_-3; 6+6=\_* |
| **Materials Needed:**   * Math Expressions Volume 1   + TE pages 215-222   + SAB page 81   + MathBoard materials   Vocabulary  Math Mountain  Unknown Partner Math Expressions LessonUnit 3 Lesson 1: Explore Unknowns **Activity 1**  1. Introduce the Math Mountain. On the board, draw the  figure on TE page 216. Point to the numbers as you  explain the format. Explain the structure by saying, “Pretend  there are 5 stones on top of this mountain. The mountain  shakes, 2 stones roll down one side and 3 roll down the other  side.”  2. Have children draw the figure at their desks using their  Math Boards. Ask them to identify the partners and the  total. Remind students that the total is always at the top  of the mountain.  3. Remind children that the order of the partners does not  matter and when partners are switched, the total is still the  same.  4. Draw a math mountain with 8 and 2 at the bottom as the  partners and the total missing. Ask children what number  belongs on the top of the mountain. Ask students to  explain how they know that the answer is 10. Continue  giving several examples with unknown totals and have  students explain how they solved for the total.  5. Next, draw a Math Mountain with one unknown partner.  Have students identify the total and the known partner.  Explain that one way to find the unknown partner is to  count on. Encourage children to use mental math by  keeping the known partner in their mind and drawing one  circle for each number they count on (See TE page 217  for a visual of this example).  6. Continue giving examples of Math Mountains with  missing partners and have children explain how they  found the unknown partner.  **Activity 2**  1. Using SAB page 81, explain that children will be finding the  unknown partner on each Math Mountain. Remind children  that this is called the *unknown partner*.  2. Have children complete the first row by counting on with  circles. Children will draw one circle for each number as  they count on and write the number of circles they drew.  3. Challenge children to solve the next row without drawing  circles and instead count on with their fingers. Show  them how to start with the known partner and count on to  the total, raising a finger for each number spoken.  **Additional Teacher Notes:**   * Finding a rock slide video on YouTube can help students make connections to Math Mountains.   As children are solving example problems, have them identify which number is the total and which numbers are the partners and how they know. Have them explain their thinking while solving for the missing partner or total.  **Homework**  Homework page 69-70  **Grade 1 Quarter 1 Day 34**  **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.  **1.OA.5** Relate counting to addition and  subtraction (e.g., by counting on 2 to add 2)  **Materials Needed:**   * Math Expressions Volume 1   + TE pages 223-228   + SAB page 85   + MathBoard materials   Vocabulary  Story problem  Unknown partner  Label Math Expressions LessonUnit 3 Lesson 2: Stories with Unknown Partners **Activity 1**  1. Introduce an unknown partner by presenting the story problem:  **I see 6 butterflies. 4 are yellow. The rest are white.**  **How many butterflies are white?**  2. Ask children to find the answer any way they can on their  MathBoards. Examples of questions to encourage the use  of Math Talk would be, *“Can you tell me the butterfly*  *story in your own words?” “How can you find the*  *number of white butterflies?” “Can anyone suggest*  *another method?”*  3. Encourage questions from the class. Ask children at their  desks which method they used to solve. Some methods  used may be a Math Mountain or using a Circle Drawing.  4. Continue presenting problems for children to solve.  children take turns demonstrating and explaining their  work at the board, while others solve the problems on  MathBoards. Some examples include:  *“There are 8 rolls on the tray. 5 rolls are round. The rest*  *are long. How many rolls are long?” and “I bought 5*  *pencils yesterday. Today I bought more pencils. Now I*  *have 7 pencils in all. How many pencils did I buy*  *today?”*  5. The second example problem about pencils presents the  numbers in a different order. You may need to help  children decide which number is the total and which  number is the partner.  **Activity 2**  1. Introduce SAB page 85 and read the first exercise together as a  class. Ask the children to solve the problem in the space  provided on the page. You may need to help children identify  the total and the known partner before they start. Remind  children they are looking for the unknown partner to solve the  problem.  2. Remind children to label the answer as *fish*. Help them find the  word *fish* in the story and then write it on the line together.  3. Allow students to solve exercises 2 and 3 independently and  discuss exercise 4 together as a class.  **Additional Teacher Notes:**   * If time allows have students explore more story problems   using a variety of the problem types.  **Homework**   * Homework page 71-72 |

**Grade 1 Quarter 1 Day 35**

## Common Core State Standard(s)

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| **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.  **1.OA.5** Relate counting to addition and  subtraction (e.g., by counting on 2 to add 2) |

**Materials Needed:**

* Math Expressions Volume 1
  + TE pages 229-234
  + SAB page 87
  + MathBoard materials

Vocabulary

* Unknown partner
* Equation

###### Math Expressions Lesson

###### Unit 3 Lesson 3: Solve Equations with Unknown Partners

**Activity 1**

1. Write the equation and Math Mountain for 4 + \_\_ = 9 on the

board. See TE page 230 for a model of the Math

Mountain.

2. Ask volunteers what kind of equation and Math Mountain

this is (unknown partner) and to read the equation out

loud (4 plus how many equals 9 or 4 and how many more

equals 9).

3. Invite children to give story problems for this equation

and Math Mountain. Ask for different ways to solve this

problem and discuss children’s solutions (counting on

from 4 with fingers or circles, drawing 9 circles or raising

9 fingers and then taking away 4, or knowing that 4 and 5

are partners of 9).

4. If counting on with fingers was not discussed, review it

now by reminding children to start with the known partner

and count on to the total, raising a finger for each number

they say. When they reach the total, they look at their

fingers to see the unknown partner.

**Activity 2**

1. Introduce SAB page 87 and have children complete Exercises

1-6 independently. Remind children that they may draw

circles to count on. Be sure children understand that they

are counting on to find the unknown partner and not

counting on to find the total.

**Activity 3**

1. Direct children to Exercise 7 on SAB page 87. Discuss ways to

find the number of letters in the mailbox. Help children

see that they know the total and one partner and they need

to find the unknown partner.

2. Ask a volunteer to write the problem as an equation on the

board (4+ \_\_\_ = 6).

3. Be sure to link the equation to Math Mountains. Ask a

volunteer to write the problem as a Math Mountain.

4. Have children solve exercises 8 and 9 independently then

discuss their answers and solution methods.

\*To prepare for homework, do exercise 10 together on homework

page 73. Explain that the work they just did in class is a model

for numbers 10-13.

Assessment

* While children are working, ask questions such as, “How do you know which number in a problem is the total?” and “How do you know which number to count on from to find the unknown partner?”

**Homework**

* Homework page 73-74

**Grade 1 Quarter 1 Day 36**

**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.

**1.OA.5** Relate counting to addition and

subtraction (e.g., by counting on 2 to add 2)

**1.OA.8-** Determine the unknown whole

number in an addition or subtraction

equation relating three whole numbers. *For*

*example, determine the unknown number that*

*makes the equation true in each of these*

*equations: 8+?=11; 5=\_\_-3; 6+6=\_\_*

**Materials Needed:**

* Math Expressions Volume 1
  + TE pages 235-240
  + SAB page 91
  + SAB page 93 (Going Further)
  + 10 paper plates

###### Math Expressions Lesson

###### Unit 3 Lesson 4: Addition Game: Unknown Partners

**Activity 1**

1. In this activity, a variation of the Pancake Breakfast scenario

(see Unit 2 Lesson 8) will be used to find unknown

addends (partners).

2. Place 10 paper plates (pancakes) in a stack at the front of

the room. Two children come up and pretend to make

pancakes.

3. One child takes some plates from the stack and tells the

class how many pancakes he or she made. Another child

also takes plates but keeps the number secret

(representing the unknown addend).

4. Next, children combine the plates on the ledge of the

board to show the total. The class records this as an

unknown partner equation at their desk and then solves to

find out how many pancakes the second student made.

Example: First child states, “I made 4 pancakes.” Second

child states, “I made some pancakes too!” First child

states, “Together we made 6 pancakes.” Second child

asks, “How many pancakes did I make?” The equation

4+ \_\_ = 6 represents this scenario. See TE page 236 for a

visual representation of this scenario.

**Activity 2**

1. In this lesson, children will use the Yellow Count-On Cards

and Number Quilt 2 on SAB page 91 to find unknown

partners (See Unit 2, Lesson 9 for The Number Quilt

Game).

2. Give each child a set of Yellow Count-On Cards. One side

shows an equation with an unknown partner and the other side

shows the partner with a counting-on drawing.

3. Have children stack the cards so they are facing the same way

so that the side with the unknown partner is showing.

4. See Unit 2, Lesson 9 for a complete description of how to play

the Number Quilt game. The goal of the game is to place each

card in its correct space on the quilt.

5. The child draws a card and finds the unknown partner. Place

the card on the corresponding number on the quilt. The game

ends when all of the cards have been placed correctly on the

quilt.

**Additional Teacher Notes:**

Going further section (SAB page 93) would be appropriate for students ready for abstract thinking.

Assessment

* As children are playing the Number Quilt game, observe if they are using counting on strategies confidently to find the unknown partner.

**Homework**

* Homework page 75-76