

## **October Numeracy: Basic Number Sense**

### **Recognizing Patterns, Completely Number lines using addition, subtraction, multiplication and division**

#### **Materials include:**

1. General explanation of unit
2. Terms for curriculum for all levels
3. Goals for each level
4. Suggested Schedule for numeracy\*
5. Content for teacher's "mini-lesson" per level
6. Worksheets per level
7. Instructions for class activity per level

#### **1. General Explanation:**

This month's numeracy lessons provide a different way to use and practice basic operations (addition, subtraction, multiplication, and division). This month will be the only month to focus solely on these operations, but like September's basic number sense of identifying numbers, students should continue to practice these skills in the classroom at math time throughout the year.

Again, there may be a wide spectrum of ability in your classroom. The levels are not intended to match to language levels, but are just rather levels of numeracy skill. Offer the appropriate levels to your students. Choose and target your mini-lessons to the level of the majority of the class OR feel free to divide the class into two sections (or more) and offer two mini-lessons if there is a need to do so.

**Operation Boxes:** I recommend that as a program you create four file boxes that contain practice worksheets for each of the functions (addition, subtraction, multiplication, division). It is best to offer a wide range of choices starting at very beginning levels and ending with more advanced worksheets. Students can then self-pace and work their way through the boxes during the year. Worksheets can come from websites offering free printables or workbooks. It will work more efficiently to make sure you have plenty copies of each version of a worksheet.

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## **2. Terms for Curriculum for All Levels**

### **Basic Numeracy Schedule:**

The schedule is designed as a four week unit. The teacher is responsible for configuring schedule to the current month and year. Reviews, computer slots, and worksheet days are merely a suggestion. Adjust accordingly to meet the needs of your class.

#### **Terms:**

*mini-lesson*: (ml) : Provided lesson plans for a short introduction to the material.

*worksheet*: (ws): Provided material for students; 3 per month.

*Operation box*: (ob): VSS worksheets in addition, subtraction, multiplication, and division

*10 minute review*: Teacher picks a regular time every class for ten minutes of numeracy review. It is meant to be a quick practice of numeracy, primarily focused on receptive and expressive language. Teacher/student reads numbers or problems. Students transcribe. Class checks together.

The beginning of class or the end of class can be effective times. The teacher can have students turn to a clean notebook page, use their “math” notebook, or can have pre-cut papers ready to hand out.

*Teacher reads*: T reads and the class transcribes numbers

*Student reads*: S reads and the class transcribes (gives students practice speaking)

*Checking Review Work*: Students check their work. This can be a simple or creative process depending on time availability. Written answers are necessary in checking since the focus of the review is receptive/expressive language. This is also a time for practice with pronunciation or memorization of numbers/concept.

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**Level 1**

**L1 Goals:** Be able to add single digit numbers together. Be able to complete a number line using simple addition. Recognize number patterns.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	10 min review: T reads 3 single digit addition problems. Students write the problem and solve.	Computer	10 min review: operations box worksheet	ml 1, ws 1	10 min review: T reads 3 single digit addition problems. Students write the problem and solve.
Week 2	10 min review: T reads 3 single digit addition problems. Students write the problem and solve.	Computer	10 min review: operations box worksheet	ml 2; ws 2	10 min review: T reads 3 single digit addition problems. Students write the problem and solve.
Week 3	10 min review: S reads 4 single digit addition problems. Students write the problem and solve.	Computer	10 min review: operations box worksheet	ml 3; ws 3	10 min review: S reads 4 single digit addition problems. Students write the problem and solve..
Week 4	10 min review: S reads 5 single digit addition problems. Students write the problem and solve.	Computer	10 min review: operations box worksheet	ml 4: class race	10 min review: S reads 5 single digit addition problems. Students write the problem and solve.

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### **Level 1: Mini lesson 1**

#### **Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

#### **Materials Needed:**

Counting cards 1-10 –laminated if possible

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

#### **Mini-lesson Content:**

1. Let's Count to 10 together
  - Using the counting cards, tape one number up at a time in order on the board and say the name of the number together.
2. Value of Numbers
  - For each number count out the corresponding number of counters (and tape to the board if applicable).
3. How much do you add?
  - Introduce the word “add”
  - Write “add” on the board. Model it: Ask a student to come up to the board. Then “add 1 more” and have another student come up. “Add 2 more” and have two students come up.
  - Show the class that you are adding one more number (or whatever you're using as a counter) for the number line.
  - Recount with counters if needed.

Name \_\_\_\_\_

**Number Line 1**

Write missing numbers. Use counters to help.

1 \_\_\_\_\_ 3 \_\_\_\_\_ 5      6

Add \_\_\_\_\_

---

5    6      \_\_\_\_\_    8      \_\_\_\_\_      \_\_\_\_\_

Add \_\_\_\_\_

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2      4      6      \_\_\_\_\_      10      \_\_\_\_\_

Add \_\_\_\_\_

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**Level 1: Mini lesson 2**

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

**Mini-lesson Content:**

1. Let's Count to 20 together by 2s
  - Use a marker and ask the class to count to 20—write 1-20 on the board.
  - Go back and erase the odd numbers so you are left with even numbers 2-20.
  - Count by 2s together.
2. Value of Numbers
  - For each number count out the corresponding number of counters (and tape to the board if applicable).
3. How much do you add?
  - Write the word “add” on the board and ask “How much do you add?”
  - Show the class that you are adding two more numbers (or whatever you're using as a counter) for the number line.
  - Erase one of the numbers and show students how you would know to add in the number by counting by 2.
  - Write Add 2.

Name \_\_\_\_\_

**Number Line 2**

Write missing numbers. Use counters to help.

2    4    \_\_\_\_\_    \_\_\_\_\_    10    12

Add \_\_\_\_\_

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5    8    \_\_\_\_\_    14    \_\_\_\_\_    20

Add \_\_\_\_\_

---

3    \_\_\_\_\_    7    \_\_\_\_\_    11

Add \_\_\_\_\_

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### Level 1: Mini lesson 3

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

**Mini-lesson Content:**

1. Let's Count to 20 together by 3s
  - Use a marker and ask the class to count to 20—write 1-20 on the board.
  - Go back and erase numbers so you are left with 1-20 by 3s.
  - Count by 3s together.
2. Value of Numbers
  - Erase a few of the numbers and replace with blank lines.
  - For each number count out the corresponding number of counters (and tape to the board if applicable).
  - Show students how you would know to add in the number by counting by 3.
3. How much do you add?
  - Write the word “add” on the board and ask “How much do you add?”
  - Show the class that you are adding 3 more numbers (or whatever you're using as a counter) for the number line.
  - Write Add 3.



Name \_\_\_\_\_

**Number Line 3**

Write missing numbers. Use counters to help.

3 \_\_\_\_\_ 5 \_\_\_\_\_ 7 \_\_\_\_\_ 8 \_\_\_\_\_

Add \_\_\_\_\_

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4    6    \_\_\_\_\_    10    \_\_\_\_\_    14

Add \_\_\_\_\_

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2    \_\_\_\_\_    8    11    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

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October: Basic Numbers

### **Level 1: Culminating Group Activity**

**Plan:**

10 minutes for warm up and directions (teacher led instruction)

10-15 minutes for race (student only)

5-10 minutes for review (class, groups, pairs)\*

\*This is the culmination activity, so review can focus on problem areas demonstrated in the activity or just a whole review of the concept. In this case, the class might count together in creative ways.

**Materials Needed:**

Enough copies of the Culminating Worksheet for 1 per team.

**Activity Goal:** Students will be required to show their cumulative numeracy skills from the lesson: They will have to work together to fill in number lines and the “add” line for each problem.

**Activity Description:** Students will form teams (2-4 students per team). They will work together to complete the worksheet as a team. They can use counters to help solve. The first team to win stands up. They have to read their number line to the class (teacher may transcribe on the board for extra support to rest of class). If they are correct, they win. If not, the game continues.

Name \_\_\_\_\_

**Level 1: Team Activity**

Write missing numbers. Use counters to help.

6 \_\_\_\_\_ 10 \_\_\_\_\_ 14 16 \_\_\_\_\_

Add \_\_\_\_\_

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12 13 \_\_\_\_\_ 15 \_\_\_\_\_ 17

Add \_\_\_\_\_

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7 \_\_\_\_\_ 11 \_\_\_\_\_ 15 \_\_\_\_\_

Add \_\_\_\_\_

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3 \_\_\_\_\_ 9 \_\_\_\_\_ 15 \_\_\_\_\_

Add \_\_\_\_\_

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**Level 2**

**L2 Goals:** Be able to add single and double digit numbers together. Be able to complete a number line using addition. Recognize number patterns.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	10 min review: T reads 3 single digit addition problems. Students write the problem and solve.	10 min review: operations box worksheet	computer	ml 1, ws1	10 min review: T reads 3 single digit addition problems. Students write the problem and solve.
Week 2	10 min review: S reads 3 single digit addition problems. Students write the problem and solve.	10 min review: operations box worksheet	computer	ml 2; ws 2	10 min review: S reads 3 single digit addition problems. Students write the problem and solve.
Week 3	10 min review: T reads 3 double digit addition problems. Students write the problem and solve.	10 min review: operations box worksheet	computer	ml 3; ws 3	10 min review: T reads 3 double digit addition problems. Students write the problem and solve.
Week 4	10 min review: S reads 3 double digit addition problems. Students write the problem and solve.	10 min review: operations box worksheet	computer	ml 4: class race	10 min review: S reads 3 double digit addition problems. Students write the problem and solve.

**Level 2: Mini lesson 1**

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

**Mini-lesson Content:**

1. Let's Count to 20 together by 2s
  - Use a marker and ask the class to count to 20—write 1-20 on the board.
  - Go back and erase the odd numbers so you are left with even numbers 2-20.
  - Count by 2s together.
2. Value of Numbers
  - For each number count out the corresponding number of counters (and tape to the board if applicable).
3. How much do you add?
  - Write the word “add” on the board and ask “How much do you add?”
  - Show the class that you are adding two more numbers (or whatever you're using as a counter) for the number line.
  - Erase one of the numbers on the number line and show students how you would know to add in the number by counting by 2.
  - Write Add 2.
4. Demonstrate Add
  - Have a volunteer model “add” with paperclips (or another counter)
  - Ask the student to “add 1/2/3/4” etc. to a bowl (or board or table).

Name \_\_\_\_\_

**Number Line 1**

Write missing numbers. Use counters to help.

12    14    \_\_\_\_\_    \_\_\_\_\_    20    22

Add \_\_\_\_\_

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6    9    \_\_\_\_\_    15    \_\_\_\_\_    21

Add \_\_\_\_\_

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13    \_\_\_\_\_    17    \_\_\_\_\_    21    \_\_\_\_\_

Add \_\_\_\_\_

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**Level 2: Mini lesson 2**

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

**Mini-lesson Content:**

1. Let's Count to 50 together by 10s
  - Use a marker to write 0-50 on the board by 10s as the class counts.
  - Show students how you can “add 10” to any of the 10s to get the next number (ex:  $10 + 10 = 20$ ,  $20 + 10 = 30$ )
2. Let's Count to 50 together by 5s
  - Count by 5s together and write numbers on the board.
  - Show students how you can “add 5” to any of the 10s to get the next number (ex:  $10 + 5 = 15$ ,  $15 + 5 = 20$ )

Name \_\_\_\_\_

**Number Line 2**

Write missing numbers. Use counters to help.

0    \_\_\_\_\_    20    \_\_\_\_\_    \_\_\_\_\_    50

Add \_\_\_\_\_

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25    30    \_\_\_\_\_    40    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

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12    17    \_\_\_\_\_    27    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

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### **Level 2: Mini lesson 3**

#### **Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

#### **Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

#### **Mini-lesson Content:**

1. What's the pattern?
  - Write the pattern on the board: 12, 23, 34, 45, and underneath it Add \_\_\_\_
  - Ask for a volunteer to write the number you add to get the next number.
  - If there is a volunteer, ask how they got the number. If not, go to the next step.
2. Using counters to figure out the problem.
  - Using paperclips (or other counters) start with number 12 in the example. Count out one counter add a time until you reach 23 (ex. Put a counter down and say "13," put another counter down and say "14")
  - Then when you are finished, go back and count the counters—Write "Add 11" on the board if it's not already there.

Name \_\_\_\_\_

**Number Line 3**

How much do you add? Use counters to help.

4 13 22 31 40

Add \_\_\_\_\_

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9 22 35 48 61

Add \_\_\_\_\_

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16 23 30 37 44

Add \_\_\_\_\_

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6 18 30 42 54

Add \_\_\_\_\_

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### **Level 2: Culminating Group Activity**

**Plan:**

10 minutes for warm up and directions (teacher led instruction)

10-15 minutes for race (student only)

5-10 minutes for review (class, groups, pairs)\*

\*This is the culmination activity, so review can focus on problem areas demonstrated in the activity or just a whole review of the concept. In this case, the class might count together in creative ways.

**Materials Needed:**

Enough copies of the Culminating Worksheet for 1 per team.

**Activity Goal:** Students will be required to show their cumulative numeracy skills from the lesson: They will have to work together to fill in number lines and the “add” line for each problem.

**Activity Description:** Students will form teams (2-4 students per team). They will work together to complete the worksheet as a team. They can use counters to help solve. The first team to win stands up. They have to read their number line to the class and their “adds” (teacher may transcribe on the board for extra support to rest of class). If they are correct, they win. If not, the game continues.

Name \_\_\_\_\_

**Level 2: Team Activity**

How much do you add? Use counters to help.

2 13 24 \_\_\_\_\_

Add \_\_\_\_\_

---

19 22 25 \_\_\_\_\_

Add \_\_\_\_\_

---

6 19 32 \_\_\_\_\_

Add \_\_\_\_\_

---

2 14 \_\_\_\_\_

Add \_\_\_\_\_

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**Level 3**

**L3 Goals:** Be able to add single and double digit numbers together. Be able to subtract double digit numbers. Use addition and subtraction to complete a number line. Recognize number patterns.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	computer	10 min review: T reads 5 single digit addition problems. Students write the problem and solve.	10 min review: operations box worksheet	ml 1, ws1	10 min review: T reads 3 double digit addition problems. Students write the problem and solve.
Week 2	computer	10 min review: S reads 3 double digit addition problems. Students write the problem and solve.	10 min review: operations box worksheet	ml 2; ws 2	10 min review: S reads 5 double digit addition problems. Students write the problem and solve.
Week 3	computer	10 min review: T reads 3 single digit subtraction problems. Students write the problem and solve.	10 min review: operations box worksheet	ml 3; ws 3	10 min review: T reads 3 double digit subtraction problems. Students write the problem and solve.
Week 4	computer	10 min review: T reads 4 double digit subtraction problems. Students write the problem and solve.	10 min review: operations box worksheet	ml 4: class race	10 min review: S reads 4 double digit subtraction problems. Students write the problem and solve.

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**Level 3: Mini lesson 1**

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

**Mini-lesson Content:**

1. What's the pattern?
  - Write on the board 6, 9, 12, \_\_\_\_\_
  - Ask for a volunteer to fill in the next number. See if they can explain the concept of counting by 3s (or adding three to the last number to get the next number).
2. Try another pattern.
  - Write on the board 5, 11, 17, \_\_\_\_\_, \_\_\_\_\_  
Add \_\_\_\_\_
  - Ask for another volunteer to fill in the blanks.
  - Ask the class what the "rule" is—the rule for this pattern is to "Add 6"
3. For extra support OR to make it harder
  - Model how to use "counters" to figure out how much to add (start at the current number and add one counter until you reach the new number, then go back and count the counters)
  - Model how to add single digits together (ex:  $5+6 = 11$ )
  - For students who need a bigger challenge, show them how you can use subtraction to figure out how much to add to get the next number.

Name \_\_\_\_\_

**Number Line 1**

Fill in the missing numbers. Write the rule.

12    16    \_\_\_\_\_    \_\_\_\_\_    28    \_\_\_\_\_

Add \_\_\_\_\_

\_\_\_\_\_

16    24    \_\_\_\_\_    40    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

\_\_\_\_\_

13    \_\_\_\_\_    17    \_\_\_\_\_    21    \_\_\_\_\_

Add \_\_\_\_\_

\_\_\_\_\_

4    9    \_\_\_\_\_    \_\_\_\_\_    24    \_\_\_\_\_

Add \_\_\_\_\_

\_\_\_\_\_

23    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    27

Add \_\_\_\_\_

\_\_\_\_\_

33    \_\_\_\_\_    39    42    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

\_\_\_\_\_

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### **Level 3: Mini lesson 2**

#### **Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

#### **Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

#### **Mini-lesson Content:**

1. What's the pattern?

- Write on the board 26, 35, 44, 53, \_\_\_\_\_, \_\_\_\_\_  
Add \_\_\_\_\_
- Ask for a volunteer to fill in the next number. See if they can explain the concept of the pattern of adding 9 to the last number to get the next number.
- Show students they can perform 2 math problems to solve the number line:
- 1. Subtraction: Subtract the **bigger** number from the **smaller** number. Make sure to emphasize this rather than saying the number to the “right” goes on top of the number to the “left.” That will not always be true. (Ex:  $35-26 = 9$ ). Be sure to clearly explain the concept of “borrowing.”
- 2. Addition: Take the answer to the subtraction problem and add it to the last number you know to get the number you do not know.
- Fill in the Add line.
- Practice the subtraction from the number line if students need more practice with borrowing. Model AND ask for volunteers.



Name \_\_\_\_\_

**Number Line 2**

Use subtraction and addition to fill in the missing numbers. Write the rule.

35    43    \_\_\_\_\_    \_\_\_\_\_    67    \_\_\_\_\_

Add \_\_\_\_\_

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13    20    \_\_\_\_\_    34    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

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58    61    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Add \_\_\_\_\_

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25    36    \_\_\_\_\_    \_\_\_\_\_    69    \_\_\_\_\_

Add \_\_\_\_\_

---

\_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    54    64

Add \_\_\_\_\_

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1    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    76    91

Add \_\_\_\_\_

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**Level 3: Mini lesson 3**

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:**

Counters for board AND students (magnets, paperclips, paper strips, M&Ms, etc.)

Tape

**Mini-lesson Content:**

1. What's the pattern?

- Write on the board 54, 49, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
- Ask for a volunteer to fill in the next numbers. See if he/she can explain the concept of the pattern subtracting 5 from the last number to get the next number.
- Show students they can perform 2 math problems to solve the number line: 1. Subtraction: Subtract the **bigger** number from the **smaller** number. (Ex:  $54 - 49 = 5$ ). Be sure to clearly explain the concept of "borrowing."  
2. Subtraction: Take the answer to the subtraction problem and subtract it from the last number you know to get the number you do not know.
- Complete the number line as a class.

2. What's the rule?

- Ask the class what the rule is to get the next number.
- Show them you do not need "add," but instead "subtract."
- Fill in Subtract 5 under the number line.

Name \_\_\_\_\_

**Number Line 3**

Use subtraction to fill in the missing numbers. Write the rule.

62    49    \_\_\_\_\_    \_\_\_\_\_    10

Subtract \_\_\_\_\_

\_\_\_\_\_

73    65    \_\_\_\_\_    49    \_\_\_\_\_    \_\_\_\_\_

Subtract \_\_\_\_\_

\_\_\_\_\_

80    64    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    0

Subtract \_\_\_\_\_

\_\_\_\_\_

99    85    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Subtract \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    33    23

Subtract \_\_\_\_\_

\_\_\_\_\_

100    79    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Subtract \_\_\_\_\_

\_\_\_\_\_

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### **Level 3: Culminating Group Activity**

**Plan:**

10 minutes for warm up and directions (teacher led instruction)

10-15 minutes for race (student only)

5-10 minutes for review (class, groups, pairs)\*

\*This is the culmination activity, so review can focus on problem areas demonstrated in the activity or just a whole review of the concept.

**Materials Needed:**

Enough copies of the Culminating Worksheet for 1 per team.

**Activity Goal:** Students will be required to show their cumulative numeracy skills from the lesson: They will have to work together to fill in number lines and the “rule” line for each problem.

**Activity Description:** Students will form teams (2-4 students per team). They will work together to complete the worksheet as a team. The first team to win stands up. They have to read their number line to the class and their “rules” (teacher may transcribe on the board for extra support to rest of class). If they are correct, they win. If not, the game continues.

Name \_\_\_\_\_

**Level 3: Team Activity**

Use addition and subtraction to fill in the missing numbers. Circle “add” or “subtract” and write the rule.

94    78    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    34

Add    Subtract    \_\_\_\_\_

\_\_\_\_\_

73    79    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Add    Subtract    \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_    \_\_\_\_\_    46    61    \_\_\_\_\_

Add    Subtract    \_\_\_\_\_

\_\_\_\_\_

100    78    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Add    Subtract    \_\_\_\_\_

\_\_\_\_\_

45    \_\_\_\_\_    55    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Add    Subtract    \_\_\_\_\_

\_\_\_\_\_

100    79    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Add    Subtract    \_\_\_\_\_

\_\_\_\_\_

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**Level 4**

**L4 Goals:** Be able comfortable adding and subtracting to complete number lines. Learn how to use multiplication and division to complete number lines. Recognize number patterns.

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	10 min review: S reads 4 triple digit addition problems. Students write the problem and solve.	ml 1, ws1	10 min review: operations box worksheet	computer	10 min review: S reads 4 double triple subtraction problems. Students write the problem and solve.
Week 2	10 min review: S reads 5 single digit multiplication problems. Students write the problem and solve.	ml 2; ws 2	10 min review: operations box worksheet	Computer	10 min review: S reads 5 single digit multiplication problems. Students write the problem and solve.
Week 3	10 min review: S reads 5 double digit multiplication problems. Students write the problem and solve.	ml 3; ws 3	10 min review: operations box worksheet	Computer	10 min review: S reads 5 double digit multiplication problems. Students write the problem and solve.
Week 4	10 min review: S reads 5 easy division problems. Students write the problem and solve.	ml 4: class race	10 min review: operations box worksheet	Computer	10 min review: S reads 5 easy division problems. Students write the problem and solve.

### Level 4: Mini lesson 1

**Plan:**

10 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

10 minutes for review (class, groups, pairs)

**Materials Needed:** Whiteboard marker

**Mini-lesson Content:**

1. What's the pattern?
  - Write on the board 54, 49, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_
  - Ask for a volunteer to fill in the next numbers. See if he/she can explain the concept of the pattern subtracting 5 from the last number to get the next number. Talk about reading the number line from the left to the right.
  - Show students they can perform 2 math problems to solve the number line: 1. Subtraction: Subtract the **bigger** number from the **smaller** number. 2. Subtraction: Take the answer to the subtraction problem and subtract it from the last number you know to get the number you do not know.
  - Underneath the number line, write the rule: "Rule: Subtract 5"
2. What's the next pattern?
  - Write on the board 26, 35, 44, 53, \_\_\_\_\_, \_\_\_\_\_
  - Ask for a volunteer to fill in the next number. See if they can explain the concept of the pattern of adding 9 to the last number to get the next number.
  - Show students they can perform 2 math problems to solve the number line: 1. Subtraction: Subtract the **bigger** number from the **smaller** number. 2. Addition: Take the answer to the subtraction problem and add it to the last number you know to get the number you do not know.
  - Underneath the number line, write the rule: "Rule: Add 9"

Name \_\_\_\_\_

**Number Line 1**

Use addition and subtraction to fill in the missing numbers. Write the rule under each number line.

194    178    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_    134

Rule: \_\_\_\_\_  
\_\_\_\_\_

703    768    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Rule: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_    \_\_\_\_\_    546    661    \_\_\_\_\_

Rule: \_\_\_\_\_  
\_\_\_\_\_

1000    778    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Rule: \_\_\_\_\_  
\_\_\_\_\_

455    349    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Rule: \_\_\_\_\_  
\_\_\_\_\_

968    709    \_\_\_\_\_    \_\_\_\_\_    \_\_\_\_\_

Rule: \_\_\_\_\_  
\_\_\_\_\_



**Level 4: Mini lesson 2**

**Plan:**

5 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

15 minutes for review (class, groups, pairs)

**Materials Needed:**

White board marker

**Mini-lesson Content:**

1. Multiplication families

Show the 10s fact family:

- Count by 10s, show how  $10 \times \text{any number} = \text{part of the fact family}$

2. What is the pattern using multiplication families

- Write the pattern on the board: \_\_\_\_\_ 6 \_\_\_\_\_ 12 \_\_\_\_\_ \_\_\_\_\_

Multiplication Family: (3)

Rule: (Add 3)

- Ask for a volunteer to complete the number line using a multiplication family—and write the multiplication family underneath (3s).
- Look at the whole number line with the class. Discuss patterns they see: numbers getting bigger, adding 3 to the previous number.
- Show them physically how they can draw a number line and look for numbers in the middle if they are not sure.

(Ex 6 7 8 9 10 11 12—and count in from 6 and 12)

- Show the students how they can effectively use the numbers they are given to find the multiplication family:

- Ex: \_\_\_\_\_ 6 \_\_\_\_\_ 12 \_\_\_\_\_ \_\_\_\_\_  
1<sup>st</sup> 2<sup>nd</sup> 3<sup>rd</sup> 4<sup>th</sup> 5<sup>th</sup> 6<sup>th</sup>

$$2 \times \underline{\quad} = 6 \text{ OR } 4 \times \underline{\quad} = 12$$

Name \_\_\_\_\_

**Number line 2**

Use multiplication families to fill in the missing numbers. Write the multiplication family and the rule under each number line.

\_\_\_\_\_ 15 \_\_\_\_\_ 25

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

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\_\_\_\_\_ 24 \_\_\_\_\_ 40

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

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\_\_\_\_\_ 14 \_\_\_\_\_ 35

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

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\_\_\_\_\_ 18 \_\_\_\_\_ 32

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

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\_\_\_\_\_ 8 \_\_\_\_\_ 16 \_\_\_\_\_

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

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\_\_\_\_\_ 27 \_\_\_\_\_ 45

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

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**Level 4: Mini lesson 3**

**Plan:**

5 minutes for mini lesson (teacher led instruction)

10 minutes for individual work (student only)

15 minutes for review (class, groups, pairs)

**Materials Needed:**

White board marker

**Mini-lesson Content:**

1. Multiplication and Division Patterns

What is the pattern?

- Write the pattern on the board: 4 8 16 32 \_\_\_\_ 128  
Rule: (Multiply the number to the left by 2 OR  
Divide the number to the right by 2)
- Ask for a volunteer to complete the number line using a multiplication and/or division—and write or explain the rule if possible.
- Look at the whole number line with the class. Discuss patterns they see: numbers getting bigger, the numbers doubling each time, multiplying by 2 to the right or dividing by 2 to the left.
- Show the students how they can multiply and divide step by step. Also write both rules down together.

Name \_\_\_\_\_

**Number line 3**

Use multiplication and division to fill in the missing numbers. Write the rules under each number line.

4 16 64 \_\_\_\_\_

Rules: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5 15 75 \_\_\_\_\_

Rules: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10 20 40 80 \_\_\_\_\_

Rules: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7 35 175 \_\_\_\_\_

Rules: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2 16 \_\_\_\_\_ 768

Rules: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ 18 162

Rules: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

October: Basic Numbers

### **Level 4: Culminating Group Activity**

**Plan:**

10 minutes for warm up and directions (teacher led instruction)

10-15 minutes for race (student only)

5-10 minutes for review (class, groups, pairs)\*

\*This is the culmination activity, so review can focus on problem areas demonstrated in the activity or just a whole review of the concept.

**Materials Needed:**

Enough copies of the Culminating Worksheet for 1 per team.

**Activity Goal:** Students will be required to show their cumulative numeracy skills from the lesson: They will have to work together to fill in number lines and the “rule” line for each problem.

**Activity Description:** Students will form teams (2-4 students per team). They will work together to complete the worksheet as a team. The first team to win stands up. They have to read their number line to the class and their “rules” (teacher may transcribe on the board for extra support to rest of class). If they are correct, they win. If not, the game continues.

Name \_\_\_\_\_

**Level 4: Team Activity**

Use addition, subtraction, multiplication, and division to fill in the missing numbers. Write the rule or rules below each number line.

\_\_\_\_\_ 546 488 \_\_\_\_\_ \_\_\_\_\_ 256

Rule: \_\_\_\_\_

\_\_\_\_\_ \_\_\_\_\_ 48 \_\_\_\_\_ 72

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

\_\_\_\_\_ \_\_\_\_\_ 21 \_\_\_\_\_ \_\_\_\_\_ 42

Multiplication family: \_\_\_\_\_

Rule: \_\_\_\_\_

803 830 \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_

Rule: \_\_\_\_\_

\_\_\_\_\_ 64 256 1024

Rules: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ 15 \_\_\_\_\_ 135 405

Rules: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_