Curriculum Sampler

Whole Number Foundations Level 1 Curriculum Sampler

moving up!

CTL Center on Teaching & Learning Marketplace

Moving Up! Mathematics™
Whole Number Foundations Level 1™
Curriculum Sampler
Lessons 14 and 47

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Lesson 14

Activity	Strand	Objective
Warm Up	NC	Flashcard game: Plus and minus 0 facts
1	PV	Write numbers 1-15: "Lining Up" place value columns
2	PV	Model and decompose numbers 15-19
3	PV	Identify number before/after 1-10
4	PV	Count by 1s and 10s
Wrap Up	NC	Math facts timed practice: Plus 1 facts

Teacher Materials:

- Whiteboard, marker
- + and – 0 flashcards
- 19 connecting cubes
- Place value number card 10
- Number cards 1-10
- Hundreds chart

Student Materials:

- Place value (PV) chart, markers
- Fact Worksheet #1 (Plus 1), pencils

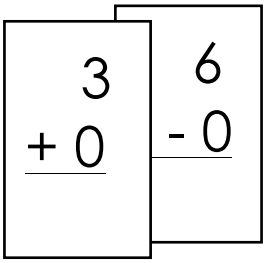
Vocabulary:

Addition, subtraction, identity law, tens, ones, more, before, after

Warm Up — Flashcard game — *5 minutes*

Materials: + and – 0 flashcards
Vocabulary: Addition, subtraction, identity law

- Play the flashcard game.
  - **Today we're going to play the flashcard game with problems that add and subtract 0.**
    - **Think about the strategy we learned for ***addition*** and ***subtraction*** problems with zero. Tell your partner the rule about how to solve these problems.**



- Monitor as students share with their partner that when you add or subtract zero, the number stays the same. Have a student share her answer with the group.
  - **Yes, the ***identity law*** tells us that when you add or subtract zero, the number stays the same.**
  - **I'll show each of you a card, and you have 3 seconds to answer. If you don't say the correct answer in time, I'll call on another student who has a hand raised.**

- Show a flashcard to the first student. If the student answers within 3 seconds, give it to the student to hold.
- If student doesn't answer in 3 seconds or gives an incorrect answer, ask the others in the group to raise their hand if they have the answer. Confirm and provide correction to the student who missed the problem and return that card to the pile for another turn.
- Continue giving turns to students until all the flashcards have been correctly identified or 5 minutes have passed.
- If time permits, have students count and report the number of facts correctly answered.

Activity 1 — Write numbers 1-15: "Lining Up" place value columns

Materials: Place value (PV) chart and markers for students
Vocabulary: Tens, ones

- Give each student a PV chart and marker. Review names and values

  - **What is this called?** (place value chart) **What column is this?** (ones) **What column is this?** (tens)
  - **Today I'm going to tell you some numbers to write on your place value chart. You'll have to listen carefully and figure out how many *tens* and *ones* there are and write the numbers in the correct place value columns. Write the first number at the top, then write the next numbers below.**
  - **The first number is 8. What number?** (8)
  - **Does 8 have any tens?** (no) **If there are zero tens it means you leave the tens column blank. How many ones are in 8?** (8) **Yes, 8. So you should write 8 in the ones column.**
  - **Write 8 in the ones column of your PV chart.**

tens	ones
	8

- Monitor and assist as needed. You may have to show students how to write the number at the top of the chart so there is room to write more numbers. If needed, have students erase and rewrite their number at the top.

  - **What number did you write?** (8) **How many tens are in 8?** (0) **How many ones are in 8?** (8) **Right! 8 is 0 tens and 8 ones.**
  - **Don't erase your number. Are you ready for the next one?**

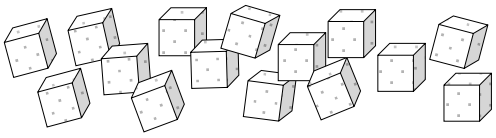
CORRECT RESPONSE	⚠ STUDENT ERROR
Great! You wrote 13. Thirteen is 1 ten and 3 ones.	**Thirteen is 1 ten and 3 ones.** **How many tens should you write in the tens column?** (1) **Do that.** **How many ones should you write in the ones column?** (3) **Do that.** **What number did you write?** (13)

- Repeat with 12, 9, and 10 using the wording below.
  - **The next number is #. What number** (#) **Write it.**
  - **What number did you write?** (#) **How many tens are in #?** (#) **How many ones are in #?** (#) **Right! # is # tens and # ones.**
  - **Don't erase your number. Are you ready for the next one?**

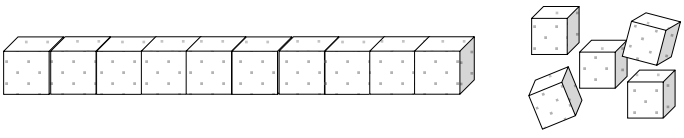
Activity 2 Model and decompose numbers 15-19

Materials: 19 connecting cubes, place value number card 10; number cards 5-9, whiteboard, marker

- Place 15 cubes in a pile in the center of the table.

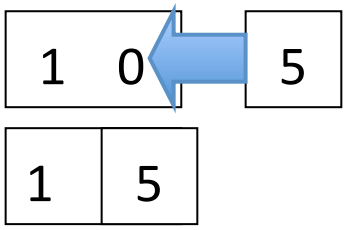


  - **Today we're going to make a group of 10 and then add on to make larger numbers like 16, 17, 18, and 19. Help me make a group of 10.**
- As you connect the cubes have the students count along.



  - **This is 10. How many?** (10)
  - **Let's count on to see how many altogether. How many in this group?** (10)
  - **Start with 10 and count.** (10, 11, 12, 13, 14, 15)
  - **How many?** (15) **Yes, 15.**

- Place the PV 10 card on the table and place the number 5 card on top to make 15 as you say the following.
  - **Yes, fifteen is 10 and 5 *more*.**
  - **What number?** (15) **Yes, 15.**



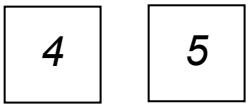
- Repeat for 16, 17, 18, and 19 using the following wording.
- Add another cube.
  - **Let's count on starting with 10 to see how many there are altogether.**
  - **How many in this group?** (10)
  - **Start with 10 and count.** (10, 11, 12, 13, 14, 15, 16)
  - **How many?** (16)
- Place the PV 10 card on the table and call on a student to place the number 6 card on top to make 16.
  - **Yes, sixteen is 10 and 6 more.**
  - **What number?** (16) **Yes, 16.**
- Repeat, adding a cube for 17, 18, and 19.
- Give each student an individual turn to count on for models of 15-19, tell what number, and use the PV tens and ones cards to make the correct number.

Activity 3 — Identify the number before and after 1-10

Materials: Number cards 1-10
Vocabulary: Before, after

- **I'm going to show you a number and you're going to figure out the number that comes *before* and *after*.**
- Place the number card for 5 on the table.

  - **What number?** (5)
  - **What number comes before 5?** Provide think time. **What number?** (4) **Yes, 4 comes before 5. If you were counting, you would say 4, 5.**



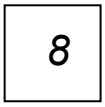
- Place the card for 4 in front of 5.
  - **What number comes after 5?** Provide think time.

- **What number?** (6) **Yes, 6 comes after 5. If you were counting, you would say 4, 5, 6.**

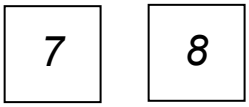
- Place the card for 6 after 5.

  - **What number comes before 5?** (4)
  - **What number comes after 5?** (6)

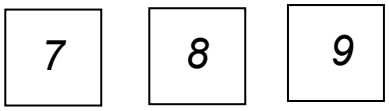
- Repeat starting with 8, then starting with 2 using the following wording.
  - **Let's try another one.**
- Place the number card for 8 on the table.



  - **What number?** (8)
  - **What number comes before 8?** Provide think time. **What number?** (7) **Yes, 7 comes before 8. If you were counting, you would say 7, 8.**



- Place the card for 7 in front of 8.
  - **What number comes after 8?** Provide think time. **What number?** (9) **Yes, 9 comes after 8. If you were counting, you would say 7, 8, 9.**
- Place the card for 9 after 8.



  - **What number comes before 8?** (7)
  - **What number comes after 8?** (9)

Activity 4 Count by 1s and 10s

Materials: Hundreds chart (corrective feedback)

Today, you're going to count by 10s to 100. Get ready. (10, 20, 30…100)

- Give each student an individual turn. Listen carefully that students are saying tens numbers and not teen numbers (e.g., sixty, not sixteen).
  - **Great job counting by 10s. Now count by 1s to 30, starting with 1. Get ready.** Signal so students stay together.
- Give each student an individual turn to count to 30 starting with a number between 15 and 20.

CORRECT RESPONSE	STUDENT ERRORS
Great job counting by 10s! or **Super! You counted to 30!**	**Stop.** Place the hundreds chart in front of the students. Touch a short sequence of numbers including the number missed. **My turn. 40, 50**, **60** (or 16, 17, 18, 19). **Say it with me.** Touch and say the numbers with the students. **By yourselves.** Touch the numbers as students say them. Remove the hundreds chart. **Count by (1s or 10s), starting with (1 or 10).**

Wrap Up — Math facts +1 timed practice

Materials: Fact Worksheet #1 (Plus 1), pencils

- Pass out Fact Worksheet #1 with plus 1 problems.
    - **Today you're going to write the answer to problems that add 1. Who can tell me how to add 1 to a number?**

Call on a student to tell how to first trust the big number and then say the next number.

- Pass out pencils and give the following directions.
    - **Today you're going to write the answers to +1 math facts using your thinking strategy. Remember to trust the big number to solve these problems. You will have one minute to answer as many problems as you can. Try your best.**
- Tell students to begin and set a timer for 1 minute. Monitor that students aren't using their fingers. After 1 minute, stop the students and collect their papers.
- Note: if students only complete 1 or 2 rows, you may mark the last problem completed and use the same worksheet for the next timing. Students will gain speed over the coming lessons as they engage in fact timings for the lesson wrap up.
- After the lesson, correct the fact timings. Record how many problems each student completed correctly in 1 minute on the facts data sheet. Note if students are making errors using one of the strategies and precorrect in future lessons as needed.

Lesson 47

Activity	Strand	Objectives
Warm Up	NC	Flashcard game (number family 10, 4, 6 and review)
1	PS	**Change problem solving***
2	NC	Number family 10, 3, 7 addition and subtraction facts
3	MD	Add 10 to a number
Wrap Up	NC	Math facts timed practice number family 10, 4, 6

***New Activity**

Teacher Materials:

- Flashcards 4+6=10, 6+4=10, 10-6=4, 10-4=6 and teacher's choice review flashcards
- Whiteboard, marker
- 3 cubes (2 colors)
- Lesson 47 story problem
- Flashcards 3+7=10, 7+3=10, 10-7=3, 10-3=7
- Place value whiteboard
- 3 ten sticks, 5 cubes
- Hundreds chart

Student Materials:

- Fact Worksheet #12 (Number family 10, 4, 6) and #13 (Number family 10, 4, 6 cumulative review)
- Pencil

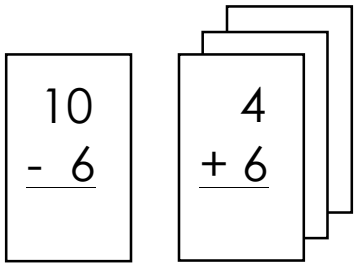
Vocabulary:

Addition, subtraction, change, more, less, equation, plus, equal, minus, tens, ones

Warm Up — Flashcard game — *5 minutes*

Materials: Flashcards 4+6=10, 6+4=10, 10-6=4, 10-4=6 and teacher's choice review flashcards
Vocabulary: Addition, subtraction

- **We're going to practice facts for number family 10, 6 and 4. Some of these problems are *addition* and some are *subtraction*.**
- **I'm going to show you flashcards for this number family. Use the number family strategy to remember the answers.**



- Show flashcards to the group. Allow think time then have students tell the answer. Repeat until firm.
- Play the flashcard game mixing these facts in with review facts:
  - Allow each student 3 seconds per fact.
  - If correct, give card to the student.

- If incorrect call on another student to provide the correct answer, then review the strategy (see below), and return the card to the pile for another turn.

- If time permits, have students count and report the number of facts correctly answered.

 Strategy corrections:

- 1 + 6 (*trust the big number, then say the next number*)
- 8 + 0 (*when we add 0, the number stays the same*)
- 7 - 0 (*when we subtract 0, the number stays the same)*
- 6 - 1 (*say the number that comes before it*)
- 2 + 5 (*trust the big number and count 2 more*)
- Doubles facts (*teacher tells the correct answer, then asks, "What does # + # =?")*
- 7, 3, 4 number family facts *(this is a number family for 7, 3, and 4)*
- 10, 4, 6 number family facts *(this is a number family for 10, 4, and 6)*

Activity 1 — Change Problem Solving — NEW!

Materials: Teacher whiteboard, marker, story problem, 3 cubes (2 colors)
Vocabulary: Change, more, less, addition, subtraction, equation, plus, equal, minus

- **Today we're going to learn how to solve ***change*** problems. What kind of problems?** (change problems)
- **They're called change problems because they start with an amount and then something changes. One type of change problem is about getting ***more*** of something. The other is about getting ***less*** of something.**
- **What are two ways a problem can change?** (getting more of something or getting less of something)
- **I'll tell you a story that is a change problem. Listen carefully. See if the change is about getting more or getting less.**

Lesson 47 story problem:

There was 1 frog on a log. Two frogs joined him. How many frogs are on the log now?

- **What is this story about?** (frogs)
- **Raise your hand if you can tell this story in your own words.**

- Call on a student to retell the story and assist as needed. Be sure to call on different students each time a new story problem is presented.
  - **How many frogs did the story start with?** (1)
  - **Yes, the story started with 1 frog. Then what happened?** (two frogs joined him)

- **So this story started with 1 frog. If 2 frogs joined him, is this change about more frogs or less frogs?** (more frogs)
- **Right, this change is about more frogs.**
- **I'm going to show you this story using cubes. First, I'll use 1 cube to show the story started with 1 frog on a log.** Place a cube in front of you.

- **Then I'll add 2 more cubes for the 2 frogs that join him.** Place 2 more cubes of a different color and connect the cubes.

- **How can I find out how many frogs are on the log now?**

- Call on students to offer the idea that you can count the cubes and get the total (3), or you can write an addition equation. If students do not offer the idea of writing an addition equation, prompt them to think about what kind of equation they could write for "getting more" problems.
  - **Yes, I can count the cubes to see how many frogs are now on the log. Let's see, there was 1 frog on a log** (point to the first cube) **and 2 frogs joined him,** (point to the 2 additional cubes)**. Now there are 3 frogs.** Point to each cube as you count. **One, two, three.**
  - **Or I can write an *addition equation*: 1 + 2 = 3.**
- Write on the board: 1 + 2 = 3
  - **Now I'm going to show you how to use a strip diagram like we used for group problems to solve this change problem.**
  - **The story started with 1 frog, so I'll draw a box and label it for 1 frog.**

F
1

  - **Then, 2 frogs joined him. This problem is about getting more so I'll make another box and label it to show how 2 more frogs joined him.**

F	F
1	2

- **Now I want to find out how many are in the larger group. That's how many frogs are on the log now, so I'll write "= F" next to the boxes. We don't know how many frogs are on the log now. That's what we have to solve for. When we don't know how many, we have to write the letter x. What do we write when we don't know how many?** (x)

F	F	= F
1	2	x

- **Now we can solve this the same way we solved group problems. Since I know the two smaller groups, I add to find the larger group or total.**
- **Raise your hand if you can tell me an addition equation to write to solve the problem.**

- Call on a student to offer the addition equation and write the equation under the boxes.

F	F	= F
1	2	x

1 + 2 =

- **What does 1 + 2 equal?** (3)

- Finish the equation on the board: 1 + 2 = 3
  - **One frog plus two frogs equals three frogs. I also need to label my answer "F" for frogs because that is what the problem is asking about** (write "F" next to 3).

F	F	= F
1	2	x

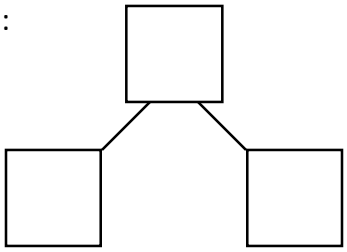
1 + 2 = 3 F

- **Great job today! We'll do some change problems in our next lesson, but remember, change problems start with an amount and then something changes. Sometimes the change is about getting more and sometimes it is about getting less.**
- **What are two ways the problem can change?** (getting more or getting less)

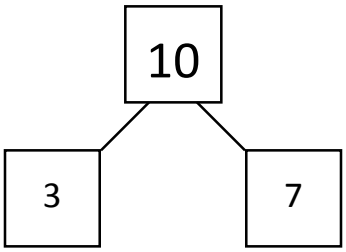
Activity 2 — Number family 10, 3, 7 addition and subtraction facts

Materials: Teacher whiteboard, marker, flashcards for 3+7=10, 7+3=10, 10-7=3, 10-3=7
Vocabulary: Addition, subtraction

- Write the following on the board:



  - **Raise your hand if you remember the three numbers in our number family.**
- Call on individual students to recall the other numbers 10, 3, and 7. Write these numbers into the boxes.



  - **Everyone, what numbers are in this number family?** (10, 3, 7)
  - **You learned how to make *addition* and *subtraction* facts for this family. Tell your partner one fact for this family, then your partner can tell you the other fact for this family.**
- Monitor students and confirm that there are addition and subtraction facts.
  - **Everyone, tell me the addition fact that begins with 3.** (3 + 7 = 10)
  - **Everyone, tell me the addition fact that begins with 7.** (7 + 3 = 10)
  - **Now tell me the fact that subtracts 3.** (10 – 3 = 7)
  - **Now tell me the fact that subtracts 7.** (10 – 7 = 3)
  - **I'm going to show you some flashcards for this number family. Try and use the number family strategy to remember the answers.**
- Show flashcards to the group. Allow think time, then have students tell the answer.

CORRECT RESPONSE	STUDENT ERRORS
Yes, 3. Say the whole fact. (3 + 7 = 10) Place the fact card on the table.	**This is a number family for 10, 3, and 7. So 3 + 7 = 10. What is 3 + 7?** (10) **Yes, 10. Say the whole fact.** (3 + 7 = 10). Keep the card for another turn.

- After all four facts have been correctly identified, play a lightning round that provides each student with an opportunity to answer all 4 facts on their own.

Activity 3 — Add 10 to a number

Materials: Teacher place value whiteboard, 3 ten sticks and 5 cubes, hundreds chart
Vocabulary: Tens, ones

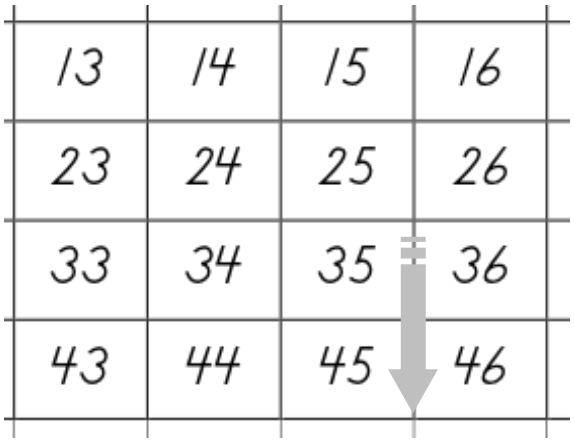
- **We're going to learn a fast way to add 10 to a number.**

- Write on the place value whiteboard: 25
  - **Everyone, what number?** (25)
  - **I'll use ten sticks and cubes to show 25.**
- Put out ten sticks and cubes for 25.
  - **Now I'll add 10 to 25.**
- Add another ten stick.
  - **Tell your partner what number I have now.**
  - **Everyone, what number do I have now?** (35)

Tens	Ones
2	5
+ 1	0
3	5

- Write + 10 below 25 to make the addition problem: 25 + 10. Have students help you solve the problem and write the answer (35).
  - **25 + 10 = 35. Notice that when we add 10, we add 1 more to the tens column but the ones column stays the same.**
  - **We can use the hundreds chart to check our answer. We'll start at 25 and count 10 more.**
- Put your finger on 25 and count 1, 2, 3, etc. as you touch each number ending on 35.
  - **Since each row is made up of ten, we don't have to count by ones. Instead we can just start at 25 and count one row forward to end up at 35. It is just like adding ten. Does 25 + 10 equal 35?** (yes)

- Point to 25 and then move 1 row down to 35 on the hundreds chart.
- Touch the hundreds chart as you say the following:
  - **If I start with 25 and add 10, I get 35. If I add 10 more, I get 45. If I add 10 more, what number do I get?** (55)



- Repeat with 72, 60, and 44, using the wording below:
- Write the number on the board.
  - **Everyone, what number?** (##)
  - **Now add ten to ## the fast way. Think about the hundreds chart.**
  - **Tell your partner what number you have now.**
  - **What number do we have now?** (##)
  - **Let's check our answer.**
- Write on the board: +10 and finish the problem.

```
 # #
+1 0
 # #
```

  - **## + ## = ##**
- Call on a student to point to the original number on the hundreds chart and add 10 by moving 1 row forward to check the answer.
  - **Does ## + ## = ##?**

Wrap Up

Math facts number family 10, 4, 6 timed practice

Materials: Fact Worksheet #12 (Number family 10, 4, 6) and #13 (Number family 10, 4, 6 cumulative review), pencils
Vocabulary: Addition, subtraction

- Give number family worksheet #12 to students who did not meet criteria in the previous lesson, or number family cumulative worksheet #13 to students who did meet the criteria.
- Pass out pencils and give the following directions.

- **Look at the problems on your worksheet. Some problems are ***addition*** and others are ***subtraction*****. Remember to use your thinking strategies to solve each problem.**

- If time allows you may review the strategy for each type of problem and/or have students orally solve a few problems in the first row on their worksheet.
    - **Today you're going to write the answers to these problems. You will have one minute to answer as many problems as you can. Try your best.**
- Tell students to begin and set a timer for 1 minute. Monitor that students aren't using their fingers. After 1 minute, stop the students and collect their papers.
- Note: If students only complete 1 or 2 rows, you may mark the last problem completed and use the same worksheet for the next timing.
- After the lesson, correct the fact timings. Record how many problems each student completed correctly in 1 minute on the facts data sheet. Note if students are making errors using one of the strategies and precorrect in future lessons as needed.
- Students who successfully complete at least 16 problems with no more than 2 errors can move on to the cumulative worksheet in the next lesson. Students who do not meet the criteria should repeat this worksheet in the next lesson.

There was 1 frog on a log. 2 frogs joined him. How many frogs are on the log now?