## KINDERGARTEN SUPPLEMENT

Set A1 Number \& Operations: Counting on the Number Line

## Includes

Activity 1: The Rainbow Number Line
A1.1
Activity 2: Kid Count Number Line A1.7
Activity 3: Capture the Number
A1.9

## Skills \& Concepts

$\star$ locate numbers from 1 to at least 31 on a number line
$\star$ count by ones forward from 1 to 100

* count backward from 10
* read aloud numerals from 0 to at least 31
* identify ordinal positions through the 31st
$\star$ locate numbers on a number line
* count by ones and read numerals
$\star$ order numerals from 1 to at least 10
* rote count backward from any number in the range of 1 to at least 10
* identify ordinal positions
* locate numbers from 0 to at least 20 on a number line
* read numerals from 0 to at least 20
$\star$ rote count by ones forward from 0 to 39
* count objects in a set of up to at least 20 objects
$\star$ describe numbers from 1 to 9 using 5 as a benchmark number

The MATH LEARNINGCENTER Salem, Oregon

## Bridges in Mathematics Kindergarten Supplement

Set A1 Numbers \& Operations: Counting on the Number Line

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Bridges in Mathematics is a standards-based $\mathrm{K}-5$ curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

The Math Learning Center is a nonprofit organization serving the education community.
Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based professional development, curriculum, materials, and resources to support learning and teaching. To find out more, visit us at www.mathlearningcenter.ors.

## Set A1 $\star$ Activity 1

## ACTIVITY

## The Rainbow Number Line

## Overview

The teacher works with input from students to record one number each school day on a colored sentence strip posted on the classroom wall. New sentence strips are added as needed, and the number line that results can be used for many different counting and numeral recosnition activities through the year.

## Skills \& Concepts

* locate numbers from 1 to at least 31 on a number line
* count by ones forward from 1 to 100
* count backward from 10
* read aloud numerals from 0 to at least 31
$\star$ identify ordinal positions through the 31st


## You'll need

Ł 11 rainbow sentence strips in 5 different colors (see Advance Preparation)
$\star$ a yardstick

* wide-tipped black felt marker
* red and blue dry wipe or overhead markers
* Coin and Bill cards (optional, pases A1.4-A1.6, run one copy of each on cardstock)

Advance Preparation You'll need 3 of one color strip, and 2 each of the other four colors. Write a 0 at the far left side of one of the 3 identically colored strips, but leave the rest of the strip unmarked otherwise. Laminate all 11 strips so you can reuse them in future years and also mark on them with an overhead or dry wipe marker this year. Post just the first strip before school starts. Place it near your Number Corner display board where all the students can see it easily.


## Instructions for The Rainbow Number Line

1. On the first day of school, call children's attention to the single sentence strip you've posted. Explain that this is a number line, and you'll be writing a number on it for each school day that passes. Read the numeral 0 with the class, and explain that you wrote this number on the line yesterday, before school even started. Ask them what number you'll need to write for today, and then use a black wide-tipped marker to record the numeral 1 on the line. Gauge the amount of space you leave between the 0 and the 1 knowing that you'll only be writing the numerals up through 9 before you switch to another strip.
2. The following day during Number Corner, record the numeral 2 on the line for the second day of school. Continue each day in this fashion through the ninth day of school. Then attach a second strip to the first, and add a new number to the strip each day until you've reached the 19th. Attach a third strip for the numerals 20-29, a fourth for the numerals $30-39$, and so on. Use a different color strip each time, so each decade appears on a new color. When you've used all 5 colors, start over. Repeat the same sequence of colors so children can anticipate what you'll post next.
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## Activity 1 The Rainbow Number Line (cont.)

Starting on about the 10th day of school, you can use the line for a variety of counting exercises and activities, including the ones listed below.

- Point to each numeral as students count forward with you. When you get to the last recorded numeral, ask students to predict what number you'll be writing on the line the following day.
- Start at any number 10 or less and point to each numeral as students count backward with you to 0 . Have them practice counting from different numbers below 10 backwards to 0 on a regular basis.
- Have students take turns pointing on the line to specific numerals you name. You might also have them point to numerals that correspond to events in your classroom (e.g., someone's age, birth date, the number of cans the class collected for the annual food drive, the number of muffins someone brought to school for a special treat today, and so on).
- Have students practice counting by 2 s to 10 . Point to the numbers, or underline them in red or blue, as the students count along with you.
- Cover up the zero with a post-it note, and have students name the ordinal position of each numeral on the line, first, second, third, fourth, and so on. (If you cover the zero, the ordinal numbers will correspond to the cardinal numbers. That is, the 1 will be the first number on the line. The 2 will be the second number, 3 will be the third number, and so on.)
- Cover up the zero with a post-it note and give different students a turn to point with the yardstick to the first numeral on the line, the second, the third, the fifth, the tenth, and so on.

3. Have students practice counting by 1s through 100 during the spring months. You can also continue to have students practice counting backwards from 10 or other numbers less than 10 . Once you reach 50 or 60 , you might have students practice counting by 5 s or 10 s along the line. Point to the numbers or circle them in red or blue as students count with you.

## Extensions

- Prepare a collection of coin cards by running 1 copy each of the Coin and Bill Cards on cardstock. Color the coins and the dollar bill, cut the cards apart, and laminate if desired. Post a penny card below the number line for each day of school through the tenth. After that, post a dime card below each multiple of 10 through 100, and a quarter card when under the numerals $25,50,75$, and 100 . When you reach Day 100, post the dollar bill below the numeral 100. Reinforce the name and value of the coins on a regular basis, and point to the dimes as students count by tens on the line.
- Use the fact that the sentence strips change color with every new decade to introduce and reinforce the tens place, and the special role it plays in our number system. Several months into school, as you're starting into the 40 s or 50 s, you might introduce the idea that the 4 in 42 means 4 tens, while the 2 means 2 ones, that is, 42 means 4 tens and 2 ones. If you're keeping the Link a Day paper chain, you can use the loops that have been grouped into tens and ones to demonstrate what you mean. You might also have students build collections of Unifix cubes grouped into tens and ones to match the number of days you've been in school.
- Use the penny and dime cards to help students analyze the magnitude of digits through 99 on the basis of their place values and represent the place value of each digit in a two-digit whole number. If you reuse the penny cards for each decade and move the dimes ahead on the line as you go, you can help students understand, for instance, that 43 is the same as 4 dimes and 3 pennies, and count the amount with them by tens and ones, "ten, twenty, thirty, forty, forty-one, forty-two, forty-three". Plan

Activity 1 The Rainbow Number Line (cont.)
to do this several times a week, if not daily, for some months running if your kindergarteners are expected to develop place value understandings.


- Extend the number line through the last day of school to give students exposure to counting past 100 and reading 3 -digit numerals.

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Coin \& Bill Cards page 3 of 3


## Set A1 $\star$ Activity 2

## ACTIVITY

## Kid Count Number Line

## Overview

The teacher gives half the students Kid Count cards and the other half numbered index cards. Holding their cards, students are seated in two parallel number lines, and then practice counting forwards and backwards as they stand up and sit down in turn.

## Skills \& Concepts

$\star$ locate numbers on a number line
ぇ count by ones and reading numerals
ฝ order numerals from 1 to at least 10
« rote count backward from any number in the range of 1 to at least 10

ڤ identify ordinal positions

## You'll need

ڤ the Kid Count Cards (pases A1.18-A1.32, run one copy of each on cardstock and cut apart.)

ڤ blue masking tape (see Advance Preparation)
$\star$ half class set of index cards (see Advance Preparation)
$\star$ a ruler or pointer of some type
ڤ a bell, chime bar, or your key ring

* Ten Frame Bus Cards and Ten \& More Ten Frame Cards (optional, pases A1.33-A1.38 and A1.39-A1.47, run one copy of each on cardstock and cut apart.)

Advance Preparation Use blue masking tape to create a line in your classroom lons enoush to accommodate half of your students standing side-by-side. An alternative is to reserve the gym for 15-20 minutes the day(s) you do this activity with your class. Write one numeral on each of the index cards, starting with 1 . You'll need a half-class set of Kid Count cards and half a class set of numbered index cards. If you have 26 students, for instance, you'll need Kid Count cards 1-13, and numbered index cards 1-13.

## Instructions for Kid Count Number Line

1. Gather the children into your discussion circle or in the gym, depending on where you're going to conduct the activity. Show them the line you've taped on the floor in your classroom, or the line you're planning to use in the gym. Explain that today the class is going to work together to make a kid-sized number line, using the Kid Count cards from the Number Corner and some other cards you've made especially for this activity.
2. Give half your students each a Kid Count card, and reassure the others that they'll each get a numbered index card in a minute or two. Call the numbers out one by one, starting with 1, as the students holding Kid Count cards each stand up and arrange themselves along the tape line in order. As you do this, use the language of ordinal numbers as well as the names of the numerals (i.e., "If you're holding the card that shows a 1, you're first in line. The person holding the card that shows 2 will be second in line. The number 3 card comes third in line. Yep, that's you, Jesse!)

## Activity 2 Kid Count Number Line (cont.)

3. Once all the children holding cards are standing in order along the line, ask them to hold their cards up in front of them for everyone to see. Walk along slowly behind the line, pointing to each student as the rest of the class reads and counts along with you.
4. Repeat Step 3, but this time, name each child's ordinal position in line (i.e., first, second, third, fourth, fifth, etc.) as the class recites them with you. Reinforce the language of ordinal numbers by asking the first child in line to hold up her hand, the third child in line to hop 3 times, the fourth child in line to wave to his or her classmates, and so on. You can also ask your class to name the second child in line, the eighth child in line, the thirteenth child in line, and so forth.
5. Give each of the students still seated a numbered index card. Tell them that when you give the signal, they are going to walk, not run, to stand facing the person who is holding the matching Kid Count card. Then they're both going to sit down right where they are. Borrow one of the index cards from a student and demonstrate how you expect the children to walk to their partner, stand in front of him or her, and then both sit down. When everyone has found his or her partner, you will have two parallel lines of children seated facing each other.
6. Ring your bell or jingle your keys and have the students holding numbered index cards find their partners. When all the students are seated, have the class count from 1 to the last number as each pair stands up. Then count backwards from the last number as each pair sits back down. Finally, have each pair stand (and turn to face the door if you're going back to the classroom) as the class recites the ordinal numbers, first, second, third, fourth, and so on.


## Extensions

- Repeat the activity as described above, but use 10 -frame cards from your Bridges Kit instead of numbered index cards. (The Ten-Frame Bug 1-10 cards are first introduced in Bridges Session 23. The Ten \& More Ten Frames 11-20 cards are first introduced in Bridges Session 61.)
- Give all the students in your class a Kid Count card and have them arrange themselves in order along the taped line. Walk along slowly behind the line, gently tapping each student on the shoulder to call out his or her number and sit down on the line. Then have each student stand as the class counts from 1 to the final number, in unison. Finally, have each child in line take one step forward and wave as the class names his or her ordinal position in line, first, second, third, fourth, fifth, and so on. This version of the activity is especially fun if you have an audience of parents, office staff, or another kindergarten. If possible, have someone take a digital photo of the class to post beside your classroom number line.


## Set A1 $\star$ Activity 3

## ACTIVITY

## Capture the Number

## Overview

The teacher divides the class into two teams. Students from each team take turns drawing a ten-frame card from a stack, finding the matching numeral on the class number line, and marking it with a sticky note. After playing the game several times with the class, the teacher can introduce Capture the Number as a partner same for children to play during Work Places.

## Skills \& Concepts

* locate numbers from 0 to at least 20 on a number line
$\star$ read numerals from 0 to at least 20
* rote count by ones forward from 0 to 39
* count objects in a set of up to at least 20 objects
* describe numbers from 1 to 9 using 5 as a benchmark number


## You'll need

* class number line from Set A1, Activity 1 (see Advance Preparation)
* $11 / 2^{\prime \prime} \times 2^{\prime \prime}$ sticky notes in 3 different colors (see Advance Preparation)
* Ten Frame Bus Cards 0-10 (pages A1.33-A1.38, run one copy of each on cardstock and cut apart.)
$\star$ Ten \& More Ten-Frame Cards 10-20 (optional, pages A1.39-A1.47, run one copy of each on cardstock and cut apart.)
* Count \& Compare Unifix Cubes Cards 10-27 (optional, pages A1.48-A1.52, run one copy of each on cardstock and cut apart.)

Advance Preparation Post the first four sentence strips from Activity 1 on the whiteboard to form a number line that runs from 0 to 39, at a height where the students can easily reach it. Cut the sticky notes in half to form 1" by $11 / 2^{\prime \prime}$ rectangles. You'll need 10 rectangles in one color, 10 in a second color, and 2 in a third color. Post 5 of one color to the lower left of the number line, 5 of the other color to the lower right, and 1 of the third color in the middle. Keep the remaining notes in reserve for a second round of the game

## Instructions for Capture the Number

1. Gather children to your discussion area and seat them all facing the whiteboard. Point to each number on the line as students count with you from 0 through 39. Then explain that you're going to play a game on the number line today. Divide the children into two teams, and assign each team a color to match the colors of your sticky notes; yellow and blue, for example. Explain that the single sticky note in the middle of the board is for you.
2. Show children the stack of Ten Frame Bug cards. Then mix up the cards and place them face-down in a stack. Explain that members of each team are going to take turns pulling a card from the top of the stack, finding the matching number on the number line, and marking it with a sticky note for their team.

Activity 3 Capture the Number (cont.)
3. Call on a student from one of the teams to take a card from the top of the stack. Ask him or her to show it to the class, and have students determine how many bugs are on the card.


Students Jaimee got lots of bugs on her card!
Two butterflies, my best ones!
Nine, there are nine because I counted them.
There's one missing so it must be 9 .
Five and then 1, 2, 3, 4.
$1,2,3,4,5,6,6,7,8,9 \ldots$ yep, it's 9 !
4. Then have that student locate and mark the matching numeral on the number line with a sticky note in his or her team's color. Encourage other students to help, and offer assistance as necessary.
5. Have students from each team take turns back and forth until all but one of the cards is gone. Take the last card yourself and mark the corresponding numeral on the line with the odd-colored sticky note. Then ask students to name the numerals each team captured as you record them on the board.



Yellow Team got 1, 2, 5, 7, and 10 .
Blue Team got $0,3,6,8$, and 9 .
Mrs. R. got 4.
6. Play the game again if time allows, or save the sticky notes for another day.

## Extensions

- Repeat the game as described above, but have the class capture the numerals from 10 through 20 by using the Ten \& More Ten-Frame cards instead of the Ten-Frame Bug cards. You might also have students capture the numerals from 10 through 27 by using the Count $\&$ Compare Unifix Cubes cards.
- Set up Capture the Number as a Work Place, you'11 need
o Capture the Number Record Sheet, 0-10 (page A1.13, run 1 half-class set plus a few extra)
${ }^{\circ}$ Zero Cards (page A1.17, one copy on cardstock, see Advance Preparation below)
${ }^{\circ} 3$ sets of Count \& Compare Butterflies Cards ( pages A1.53-A1.56, run three copies of each sheet on different color cardstock and cut apart.)
${ }^{\circ}$ crayons in two different colors

Activity 3 Capture the Number (cont.)
${ }^{\text {o }}$ Capture the Number Record Sheet, 0-20 (optional, page A1.14, run as needed)
${ }^{\circ}$ Capture the Number Record Sheet, $0-10$ Challenge (optional, page A1.15, run as needed)
${ }^{\circ}$ Capture the Number Record Sheet, $0-20$ Challenge (optional, page A1.16, run as needed)

- 3 sets of cards from Work Place 2C (Ten \& More Ten-Frame, optional)

Advance Preparation To set Capture the Number up as a Work Place, run a half-class set of the Capture the Number Record Sheet, 0-10 blackline on page A1.13. Cut the sheets in half and place them in a Work Place tub. Run 1 copy of the Zero Cards (page A1.17) on cardstock. Cut the cards apart and laminate them. Add these to your Count \& Compare Butterflies cards so that each set has 13 cards: 3 zeros, and 1 card each for 1-10. In addition to the record sheets and the 3 sets of cards, you'll need to add 6 crayons or colored pencils, each a different color.

- Introduce Capture the Number as a partner game. In this game, students take turns drawing tenframe cards, locating the corresponding numerals on a number line, and coloring in dots above those numerals on the line. The players each use a different color so they can tell who has captured each numeral. Play continues until all the dots above the numbers are colored in. If a player draws a Zero card and the 0 has already been marked, that player looses his or her turn. The player with the most dots colored in at the end of the game wins. Choose a volunteer to play the game with you while the other children watch, and then make it available during Work Places.


Danny I won! I got 6 dots, and you only got 5, Mrs. R!

- Some students may enjoy counting out cubes in their color to match the numbers they capture, forming these into trains, and setting them above the numbers on the line. At the end of the game, each student can link his or her trains end-to-end to compare their winnings. The player with the longer train wins the game.

Activity 3 Capture the Number (cont.)

- There are several different versions of the Capture the Number Record Sheet on pages A1.13-A1.16, each a little more challenging. You can introduce these as needed. You may choose to use some of them with small groups or individuals. Students playing Capture the Number, 0-20 can use a set of the Ten \& More Ten-Frame cards from Work Place 2C and just capture and color the numerals from $10-20$. If they want to play for all the numerals on the line, they can combine a set of Count and Compare Butterfly cards with a set of Ten $\&$ More Ten-Frame cards.
- Capture the Number, $0-10$ Challenge and Capture the Number, $0-20$ Challenge are played like the first two versions of the game, with a small twist. In the challenge games, students take turns drawing a card, using the landmark numbers along the line to find the location of the matching numeral, writing the numeral in themselves, and then coloring in the dot.

NAMES

NAMES



Zero Cards


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Kid Count Cards page 3 of 15


Kid Count Cards pase 4 of 15


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Kid Count Cards page 6 of 15


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Kid Count Cards page 15 of 15


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$\square$ Bridges in Mathematics Ten-Frame Bus Cards

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## Ten Frame Bug Cards page 6 of 6



Dridges in Mathematics Ten-Frame Bug Cards

## Ten \& More Ten Frame Cards page 1 of 9

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## Ten \& More Ten Frame Cards pase 5 of 9



Ten \& More Ten Frame Cards page 6 of 9


## Ten \& More Ten Frame Cards page 7 of 9



Set A1 Number \& Operations: Counting on the Number Line Blackline Make 1 copy on colored cardstock. Cut apart on thin lines. Laminate.

Ten \& More Ten Frame Cards page 8 of 9


## Ten \& More Ten Frame Cards page 9 of 9



Count \& Compare Unifix Cubes Cards pase 1 of 5


Count \& Compare Unifix Cubes Cards page 2 of 5


Count \& Compare Unifix Cubes Cards page 3 of 5


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## Count \& Compare Unifix Cubes Cards page 5 of 5



Count \& Compare Butterflies Cards page 1 of 4


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Count \& Compare Butterflies Cards page 4 of 4



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