Unit 1: Counting and Cardinality

Content Area: **Mathematics**
Course(s): **Mathematics - Grade K**
Time Period: **September**
Length: **10 Weeks**
Status: **Published**

Unit Overview

This unit includes counting numbers zero to five, up to ten, and through to 100 by ones and tens. Within the unit there will be a focus on visual tools and problem solving as students touch on cross curricular connections in Chapter 1: farm animals and life, Chapter 2: nutrition, and Chapter 3: playground activities.

Transfer

Students will count objects within the classroom other than standard manipulatives.

Students will apply counting skills in daily math meetings.

Students will count and compare objects in every day life. (Parents can be given ideas to reinforce concepts while at home.)

Meaning

Understandings

Students will understand the relationship between numbers and quantities when using objects and illustrations to count.

Students will understand how numbers are used to represent quantities and compare groups.

Students will understand one to one correspondence.

Students will understand how to represent those numbers in visual and written form.

Students will understand how to identify a group with one more.

Students will understand how ordinal numbers describe the position of an object.

Essential Questions

Students will keep considering...

- How do we show how many?
- What do numbers tell me?
- How can I show numbers beyond ten?
- What are other ways to represent quantities?

Application of Knowledge and Skill

Students will know...

- how to count to tell the number of objects.
- how to write numbers zero to twenty.
- how to use one-to-one correspondence to determine when groups are equal, greater than, less than, or have one more.
- how to compare two numbers between 1-10 as written numerals

Students will be skilled at...

- count 0-20 (100 by the end of the year)
- use numbers & symbols to represent numbers 0-20
- use one-to-one counting to compare number of objects in a group
- writing the number that tells how many objects are in a group and compare the written number up to 10 (using the vocabulary greater than, less than, or equal to)
- use ordinal numbers to describe the position of an object

Academic Vocabulary

Chapter 1:

1. count
2. equal to
3. five 5
4. four 4
5. greater than
6. less than

7. number
8. one 1
9. three 3
10. two 2
11. zero 0

Chapter 2

1. eight 8
2. nine 9
3. ordinal number
4. seven 7
5. six 6
6. ten 10

Chapter 3

1. eighteen 18
2. eleven 11
3. fifteen 15
4. fouteen 14
5. nineteen 19
6. seventeen 17
7. sixteen 16
8. thirteen 13
9. twelve 12
10. twenty 20

Learning Goal 1

Students will identify relationships between numbers and quantities up to 100.

** Related Documents are both proficiency scales.**

- Student Scale: Unit # Learning Goal #
- Teacher Scale: Unit # Learning Goal # K/Kindergarten Math

Ch 1 (L 1 & 3); Ch 2 (L 1, 2, 4, 5); Ch 3 (L 1-6) [Level of Difficulty 3]

Daily Target : SWBAT draw conclusions about the relationships between numbers and quantities when using objects and illustrations to count __*___.

*Insert appropriate numbers for the lesson (see below).

- Chapter 1 Lesson 1 : #'s 1, 2, & 3.
- Chapter 1 Lesson 3 : #'s 4 & 5.
- Chapter 2 Lesson 1 : #'s 6 & 7.
- Chapter 2 Lesson 2 : # 8.
- Chapter 2 Lesson 4 : # 9.
- Chapter 2 Lesson 5 : # 10.
- Chapter 3 Lesson 1 : #'s 11 & 12.
- Chapter 3 Lesson 2 : #'s 13 & 14.
- Chapter 3 Lesson 3 : #'s 15.
- Chapter 3 Lesson 4 : #'s 16 & 17.
- Chapter 3 Lesson 5 : #'s 18 & 19.
- Chapter 3 Lesson 6 : # 20.

MA.K.CC.A	Know number names and the count sequence.
MA.K.CC.A.1	Count to 100 by ones and by tens.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K.CC.B	Count to tell the number of objects.
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
MA.K-12.4	Model with mathematics.
MA.K.CC.B.4a	When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
MA.K.CC.B.4b	Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
MA.K.CC.B.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
MA.K-12.6	Attend to precision.

Ch 1 (L 6, 7, 8); Ch 2 (L 9) (Level of Difficulty 2)

Daily Target: SWBAT draw lines from objects in one group to objects in another group to show if groups are __*___.

*Insert equal, greater than, or less than based on lesson objective (see below).

- Chapter 1 Lesson 6: equal to
- Chapter 1 Lesson 7: greater than
- Chapter 1 Lesson 8: less than
- Chapter 2 Lesson 9: one more

MA.K.CC.A	Know number names and the count sequence.
MA.K.CC.A.1	Count to 100 by ones and by tens.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K.CC.B	Count to tell the number of objects.
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
MA.K.CC.B.4a	When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
MA.K-12.5	Use appropriate tools strategically.
MA.K.CC.B.4c	Understand that each successive number name refers to a quantity that is one larger.
MA.K-12.6	Attend to precision.
MA.K.CC.C	Compare numbers.
MA.K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.

Ch 1 (L 11); Ch 2 (L 7); Ch 3 (L 7) [Level of Difficulty 2]

Daily Target: SWBAT use the problem solving strategy, ___*____, to solve problems.

*Insert appropriate strategy based on lesson objective (see below).

- Chapter 1 Lesson 11 : Use a diagram
- Chapter 2 Lesson 7 : Act it Out
- Chapter 3 Lesson 7 : Draw a diagram

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K.CC.A	Know number names and the count sequence.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
MA.K.CC.B	Count to tell the number of objects.
MA.K-12.4	Model with mathematics.
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.

MA.K.CC.B.4a	When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
MA.K.CC.B.4b	Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
MA.K.CC.B.4c	Understand that each successive number name refers to a quantity that is one larger.
MA.K-12.6	Attend to precision.

Ch 2 (L 10, 11) [Level of Difficulty 2]

Daily Target: SWBAT relate ordinal numbers to the tenth to identify the order of a given object.

MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.3	Construct viable arguments and critique the reasoning of others.
MA.K-12.4	Model with mathematics.
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
MA.K.CC.B.4a	When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
MA.K-12.5	Use appropriate tools strategically.
MA.K-12.8	Look for and express regularity in repeated reasoning.

Ch 3 (L 8, 9, 10) [Level of Difficulty 1]

Daily Target: SWBAT count and recognize numberals to **50 or 100** by **ones or tens.***

*Choose appropriate number and counting interval for lesson.

- Chapter 3 Lesson 8: Count to 50 by ones.
- Chapter 3 Lesson 9: Count to 100 by ones.
- Chapter 3 Lesson 10: Counr to 100 by tens.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K.CC.A	Know number names and the count sequence.
MA.K.CC.A.1	Count to 100 by ones and by tens.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
MA.K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
MA.K.CC.B	Count to tell the number of objects.
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.

Ch 1 (L 2, 4, 5); Ch 2 (L 3, 6); Ch 3 (L 1-6)   [Level of Difficulty 2]

Daily Target: SWBAT recognize and write numerals __*__ and represent a number of objects with a written numeral.

* Insert appropriate number depending on the lesson (see below).

- Chapter 1 Lesson 2 : Read and Write #'s 1, 2 and 3.
- Chapter 1 Lesson 4 : Read and Write #'s 4 and 5.
- Chapter 1 Lesson 5 : Read and Write zero.
- Chapter 2 Lesson 3 : Read and Write #'s 6, 7 and 8.
- Chapter 2 Lesson 6 : Read and Write #'s 9 and 10.
- Chapter 3 Lesson 1 : Numbers 11 and 12.
- Chapter 3 Lesson 2 : Numbers 13 and 14.
- Chapter 3 Lesson 3 : Number 15.
- Chapter 3 Lesson 4 : Numbers 16 and 17.
- Chapter 3 Lesson 5 : Numbers 18 and 19.
- Chapter 3 Lesson 6 : Number 20.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K.CC.A	Know number names and the count sequence.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K.CC.A.1	Count to 100 by ones and by tens.
MA.K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
MA.K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
MA.K.CC.B	Count to tell the number of objects.
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
MA.K-12.4	Model with mathematics.
MA.K-12.6	Attend to precision.

Ch 1 (L 9, 10); Ch 2 (L 8, 9)   [Level of Difficulty 2]

Daily Target: SWBAT use number symbols to represent groups and compare numbers 1-10 using those symbols.

- Chapter 1 Lesson 9 : Compare Numbers 0 to 5.
- Chapter 1 Lesson 10 : One more.
- Chapter 2 Lesson 8 : Compare numbers 0 to 10.
- Chapter 2 Lesson 9 : One more with numbers to 10.

MA.K-12.1	Make sense of problems and persevere in solving them.
MA.K.CC.A	Know number names and the count sequence.
MA.K.CC.A.1	Count to 100 by ones and by tens.
MA.K-12.2	Reason abstractly and quantitatively.
MA.K.CC.A.2	Count forward beginning from a given number within the known sequence (instead of having to begin at 1).
MA.K.CC.A.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).
MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
MA.K-12.4	Model with mathematics.
MA.K.CC.B.4a	When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
MA.K.CC.B.4b	Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
MA.K-12.5	Use appropriate tools strategically.
MA.K.CC.B.4c	Understand that each successive number name refers to a quantity that is one larger.
MA.K.CC.B.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
MA.K-12.6	Attend to precision.
MA.K.CC.C	Compare numbers.
MA.K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
MA.K.CC.C.7	Compare two numbers between 1 and 10 presented as written numerals.

Formative Assessment and Performance Opportunities

- Check my progress assessment
- Homework
- On My Own LEVELED
- Problem Solving Pages
- Reteach
- Enrich
- Center Work
- Math Meeting

Chapter 1 Performance Task: **The Pet Store** DOK 2, DOK 3, DOK4- SW count objects using numbers 1 through 5, write numbers, identify 0 (Rubric in TM pg. 84PT1-2)

Chapter 2 Performance Task: **Grocery Shopping** DOK1, DOk2, DOK4 - SW count objects using numebrs 1 through 5, write numbers, idenitfy 0 (Rubric in TM pg. 168PT1-2)

Chapter 3 Performance Task: **At the Sporting Goods Store** DOK1, DOK 2, DOK 3- SW count objects by

ones, count objects by 10s starting at 10, and write numbers (Rubric in TM pg. 248PT1-2)

Chapter Projects Available in Student Book:

Chapter 1 Project: Create a Mural (pg. 2)

Chapter 2 Project: My Number Book 0-10 (pg. 86)

Chapter 3 Project: My Counting Cards (pg. 170)

Summative Assessment

- Leveled Chapter Assessment
- E-assessment
- Oral Assessment

21st Century Life and Careers and Technology

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP2.1	Career-ready individuals readily access and use the knowledge and skills acquired through experience and education to be more productive. They make connections between abstract concepts with real-world applications, and they make correct insights about when it is appropriate to apply the use of an academic skill in a workplace situation.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP4.1	Career-ready individuals communicate thoughts, ideas, and action plans with clarity, whether using written, verbal, and/or visual methods. They communicate in the workplace with clarity and purpose to make maximum use of their own and others' time. They are excellent writers; they master conventions, word choice, and organization, and use effective tone and presentation skills to articulate ideas. They are skilled at interacting with others; they are active listeners and speak clearly and with purpose. Career-ready individuals think about the audience for their communication and prepare accordingly to ensure the desired outcome.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP6.1	Career-ready individuals regularly think of ideas that solve problems in new and different ways, and they contribute those ideas in a useful and productive manner to improve their organization. They can consider unconventional ideas and suggestions as solutions to issues, tasks or problems, and they discern which ideas and suggestions will add greatest value. They seek new methods, practices, and ideas from a variety of sources and seek to apply those ideas to their own workplace. They take action on their ideas and understand

	how to bring innovation to an organization.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP8.1	Career-ready individuals readily recognize problems in the workplace, understand the nature of the problem, and devise effective plans to solve the problem. They are aware of problems when they occur and take action quickly to address the problem; they thoughtfully investigate the root cause of the problem prior to introducing solutions. They carefully consider the options to solve the problem. Once a solution is agreed upon, they follow through to ensure the problem is solved, whether through their own actions or the actions of others.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.
TECH.8.1.2.A.CS1	Understand and use technology systems.
TECH.8.1.2.D.CS1	Advocate and practice safe, legal, and responsible use of information and technology.

Accommodations and Modifications

When appropriate:

- preteach and/or reteach
- small group instruction or one-on-one (parent volunteer)
- manipulatives whenever necessary (hands-on approach)
- extra brain breaks
- use a highlighter so students can trace easier
- allow a student to use a highlighter to trace larger numbers
- allow for physical activity to practice skills (ex: jump 5 times; have a large number line and have student hop to each number while counting aloud)
- sing songs/dance to reinforce or introduce skills
- have students "choral respond" (for ex: teacher says sentence aloud; students repeat it to a peer)

For students will difficulty focusing:

- use noise buffers whenever appropriate (headphones or earbuds)
- sensory tools- ex: rubber band around chair to allow for movement
- "act it out" approach
- work with a partner; allow to ask & answer questions

Unit Resources

McGraw-Hill: My Math Teacher Manual

McGraw-Hill: My Math Student Edition and student resources

McGraw-Hill: My Math Center cards and manipulatives

[McGraw-Hill Website](#)

[Illustrative Mathematics](#)

ST Math Puzzles: Numbers and Objects to 5, Number and Objects to 10, Subitizing, Numbers and Objects to 20, Greater than, less than, and equal to, Introduction to number line, Comparing Numbers, Numbers and Objects to 100

Learning Worlds (Special Education)

Interdisciplinary Connections

Real-World Problem Solving Readers

- *At the Grocery Store* (Teacher Edition pages 2, 15-16) - Presents understanding of counting to tell the number of objects at the grocery store as well as using position words (K.CC.5)
- *Community Helpers* (Teacher Edition pages 4, 19-20) - Presents understanding of counting to tell the number of objects in the community (K.CC.5)
- *Then and Now* (Teacher Edition pages 11, 33-34) - Presents knowledge of number names and the count sequence as students compare life in earlier times to life today (K.CC.1)
- *What are Seasons?* (Teacher Edition pages 12, 35-36) - Presents knowledge of number names and count sequence as students explore the four seasons (K.CC.1)

SOC.6.1.4.A.CS11	In an interconnected world, increased collaboration is needed by individuals, groups, and nations to solve global problems.
SOC.6.1.4.C.6	Describe the role and relationship among households, businesses, laborers, and governments within the economic system.
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
K-ESS3-2.1.1	Ask questions based on observations to find more information about the designed world.
K-ESS2-2.7	Engaging in Argument from Evidence
K-ESS2-1.ESS2.D.1	Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.