Unit 1 Recognizing, Counting and Comparing Numbers 0-20

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Course(s): **Sample Course**
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Title Section

Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Mathematics Kindergarten

Unit 1: Recognizing, Counting and Comparing Number 0 - 20

Belleville Board of Education

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Unit Overview

Unit 1 will cover a variety of topics related to basic math principles. These topics will include:

Topic 1 & 2 focuses on:

- Introduces counting as more than a verbal skill.
- Introduces counting and it's various arrangments from 0-5.
- Tell how many and write the numerals 0-5.
- Comparing numbers 0-5.
- Develop deeper understanding of concepts such as greater than, less than, equal and not equal.
- Making Comparisons

Topic 3 & 4 focuses on:

- Develop counting strategies by introducing 6-10.
- Compare groups to 10 by counting.
- Continue the counting sequence with a focus on 6-10.
- Use the standard list of counting words in order. (one, two, three, until reaching twenty.)
- Compare groups of objects as well as the corresponding number.
- Making comparisons.

- one- to one correspondence.
- regardless of arrangements, the end number will be the same.
- builds on the conceptual understanding of equal groups by matching groups of objects.

Topic 9 focuses on:

- Count numbers 11-20.
- Write numbers 0-20.
- builds on the sound understanding of the cardinality principle.

(Reference Topics 1,2,3, 4 and 9 in the teacher's edition)

NJSLS

MA.K.CC.A.1	Count to 100 by ones and by tens.
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.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.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.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.

Exit Skills

By the end of Kindergarten Mathematics, students in the Belleville Public Schools will be able to:

- **Represent and compare whole numbers, initially with sets of objects. Students will also work toward fluency in addition and subtraction with whole numbers within 5:**

In Kindergarten students develop a foundation for numbers; they learn to count to 100 and write numbers to 20. Attention is given to numbers 11-20, with an emphasis on tens and ones, to build a foundation for place value understanding. Students begin to add and subtract in kindergarten. They represent quantities to solve problems, and they model simple joining and separating situations with sets of objects or eventually with equations such as 5 + 2 = 7 and 7 – 2 = 5. Students use strategies to add and subtract such as quickly recognizing the cardinalities of small sets of objects, counting and producing sets of given sizes, counting the number of objects in combined sets, or counting the number of objects that remain in a set after some are taken away.

- **Describe shapes and space:**

Students describe their physical world using geometric ideas (e.g., shape, orientation, spatial relations) and vocabulary. They identify, name, and describe basic two-dimensional shapes, such as squares, triangles, circles, rectangles, and hexagons; and three-dimensional shapes such as cubes, cones, cylinders, and spheres. They use basic shapes and spatial reasoning to model objects in their environment and to construct more complex shapes.

Enduring Understanding

Unit 1 focuses on:

1. Counting tells how many are in a group, regardless of their arrangements or the order in which they were counted. The last number said when counting a group is the total. Counting is cumulative.
2. There is a unique symbol that goes with each number word.
3. Zero is a number that tells how many objects there are when there are none.
4. There is more than one way to show a number.
5. There is a specific order to the set of whole numbers.
6. Good math thinkers use math to explain why they are right. They can talk about the math that others do, too.

Unit 2 focuses on:

1. Two groups of objects are equal in number if they can be directly matched , one - to - one,with no extras in either group.
2. Two groups of objects can be directly compared using a matching process.
3. Two sets of objects can be compared by number using counting strategies, which is a more efficient method than matching.
4. Two numbers can be compared by using the number counting sequence. A number represents a quantity greater than another quantity if it is later in the sequence.
5. Good math thinkers use math they know to show and solve problems.

Unit 3 focuses on :

1. Counting tells how many are in a set, or group, no matter which order the objects are counted. The last number said when counting a group is the total. Counting is cumulative.
2. There is a unique symbol that goes with each number word.

Unit 4 focuses on:

1. In comparing two groups, the group with more objects is greater in number than the other one. The group with fewer objects is less in number than the other.
2. In a pair of numbers, the number that tells more is greater. The number that tells fewer is less.
3. Two groups can be compared by counting the number of objects in each group and finding the position of each number within the counting sequence.
4. Two numbers can be compared by finding the position of each number within the counting sequence.
5. There is a specific order to the set of whole numbers.
6. Good math thinkers look for things that repeat in a problem. They use what they learn from one

problem to help them solve other problems.

Unit 9 focuses on:

1. There is a unique symbol that goes with each number word.
2. Adding parts together to make a whole is one interpretation of addition. Equations using + and = can be used to show parts of a whole.
3. Counting tells how many are in a set, regardless of their arrangements or the order in which they were counted. The last number said when counting a set is the total. Counting is cumulative.

Essential Questions

Essential Question:

How can numbers from 0 to 5 be counted, read, and written?

How can numbers from 0-5 be compared and ordered?

How can numbers from 6 to 10 be counted, read, and written? How can numbers from 0 to 10 be compared and ordered?

How can numbers to 20 be counted, read, written, and pictured to tell how many?

Learning Objectives

Bloom's Taxonomy

After completing Unit 1 Recognizing and Comparing numbers:

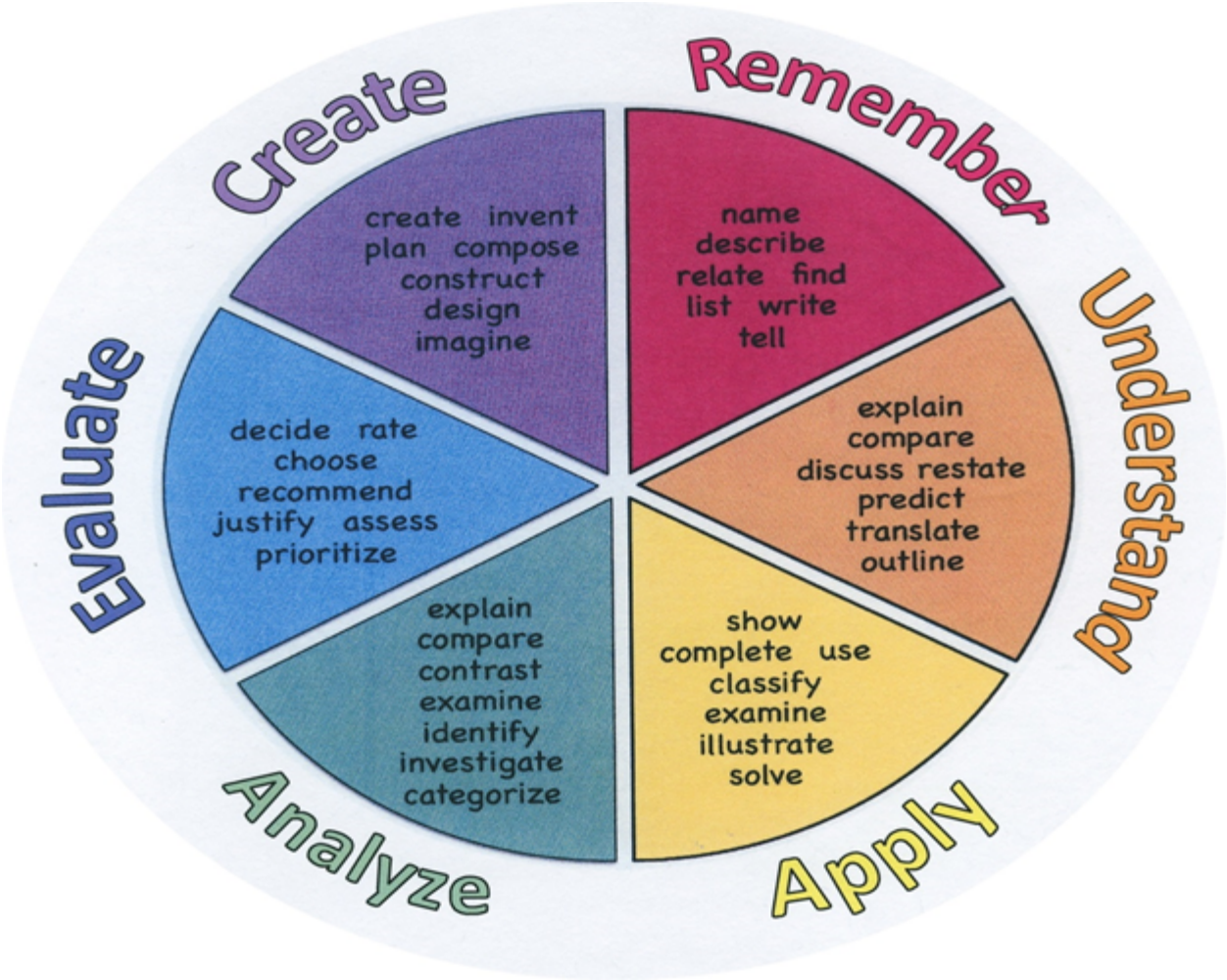
- **Identify** numbers 0 -20.
- **Describe** using math vocabulary to define quantities.
- **Explain** one to one correspondence.
- **Point ou**t various numerical displays with quantities that need to be identified and counted.

Action Verbs

Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy. These are useful in writing learning objectives, assignment objectives and exam questions.

Remember	Understand	Apply	Analyze	Evaluate	Create
Choose	Classify	Choose	Categorize	Appraise	Combine
Describe	Defend	Dramatize	Classify	Judge	Compose
Define	Demonstrate	Explain	Compare	Criticize	Construct
Label	Distinguish	Generalize	Differentiate	Defend	Design

List	Explain	Judge	Distinguish	Compare	Develop
Locate	Express	Organize	Identify	Assess	Formulate
Match	Extend	Paint	Infer	Conclude	Hypothesize
Memorize	Give Examples	Prepare	Point out	Contrast	Invent
Name	Illustrate	Produce	Select	Critique	Make
Omit	Indicate	Select	Subdivide	Determine	Originate
Recite	Interrelate	Show	Survey	Grade	Organize
Select	Interpret	Sketch	Arrange	Justify	Plan
State	Infer	Solve	Breakdown	Measure	Produce
Count	Match	Use	Combine	Rank	Role Play
Draw	Paraphrase	Add	Detect	Rate	Drive
Outline	Represent	Calculate	Diagram	Support	Devise
Point	Restate	Change	Discriminate	Test	Generate
Quote	Rewrite	Classify	Illustrate		Integrate
Recall	Select	Complete	Outline		Prescribe
Recognize	Show	Compute	Point out		Propose
Repeat	Summarize	Discover	Separate		Reconstruct
Reproduce	Tell	Divide			Revise
	Translate	Examine			Rewrite
	Associate	Graph			Transform
	Compute	Interpolate			
	Convert	Manipulate			
	Discuss	Modify			
	Estimate	Operate			
	Extrapolate	Subtract			
	Generalize				
	Predict				



Interdisciplinary Connections

TECH.8.1.2.A.CS1	Understand and use technology systems.

Alignment to 21st Century Skills & Technology

- English, reading or language arts
- World languages
- Arts
- Mathematics
- Economics
- Science
- Geography
- History

- Government and Civics

21st Century/Interdisciplinary Themes

- Civic Literacy
- Environmental Literacy
- Financial, Economic, Business and Entrepreneurial Literacy
- Global Awareness
- Health Literacy

21st Century Skills

- Communication and Collaboration
- Creativity and Innovation
- Critical thinking and Problem Solving
- ICT (Information, Communications and Technology) Literacy
- Information Literacy
- Life and Career Skills
- Media Literacy

Technology Infusion

SmartBoard

Differentiation

- NJDOE: Instructional Supports and Scaffolds for Success in Implementing the Common Core State Standards http://www.state.nj.us/education/modelcurriculum/success/math/k2/

- Monitor progress, reteach as needed, and extend student thinking.
- Assess to identify students needs and then provide appropriate support.
- As needed, provide more instruction that is on level or below grade level for the students who are struggling.
- Use vocabulary cards, vocabulary activities, vocabulary review, and vocabulary glossary.

- Utilize **Quick Check** in order to determine differentiation of instruction. **Assess and**

differentiate page will prescribe the differentiated instruction activity.

Special Education

- printed copy of board work/notes provided
- additional time for skill mastery
- assistive technology
- behavior management plan
- Center-Based Instruction
- check work frequently for understanding
- computer or electronic device utilizes
- extended time on tests/ quizzes
- have student repeat directions to check for understanding
- highlighted text visual presentation
- modified assignment format
- modified test content
- modified test format
- modified test length
- multiple test sessions
- multi-sensory presentation
- preferential seating
- preview of content, concepts, and vocabulary
- reduced/shortened reading assignments
- Reduced/shortened written assignments
- secure attention before giving instruction/directions
- shortened assignments
- student working with an assigned partner
- teacher initiated weekly assignment sheet
- Use open book, study guides, test prototypes

ELL

- teaching key aspects of a topic. Eliminate nonessential information
- using videos, illustrations, pictures, and drawings to explain or clarif
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning;
- allowing students to correct errors (looking for understanding)

- allowing the use of note cards or open-book during testing
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using computer word processing spell check and grammar check features
- using true/false, matching, or fill in the blank tests in lieu of essay tests

Intervention Strategies

- allowing students to correct errors (looking for understanding)
- teaching key aspects of a topic. Eliminate nonessential information
- allowing products (projects, timelines, demonstrations, models, drawings, dioramas, poster boards, charts, graphs, slide shows, videos, etc.) to demonstrate student's learning
- allowing students to select from given choices
- allowing the use of note cards or open-book during testing
- collaborating (general education teacher and specialist) to modify vocabulary, omit or modify items to reflect objectives for the student, eliminate sections of the test, and determine how the grade will be determined prior to giving the test.
- decreasing the amount of workpresented or required
- having peers take notes or providing a copy of the teacher's notes
- marking students' correct and acceptable work, not the mistakes
- modifying tests to reflect selected objectives
- providing study guides
- reducing or omitting lengthy outside reading assignments
- reducing the number of answer choices on a multiple choice test
- tutoring by peers
- using authentic assessments with real-life problem-solving
- using true/false, matching, or fill in the blank tests in lieu of essay tests
- using videos, illustrations, pictures, and drawings to explain or clarify

Evidence of Student Learning-CFU's

- Admit Tickets
- Anticipation Guide
- Common benchmarks
- Compare & Contrast

- Create a Multimedia Poster
- Define
- Describe
- Evaluate
- Evaluation rubrics
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- Journals
- KWL Chart
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes
- Red Light, Green Light
- Self- assessments
- Socratic Seminar
- Study Guide
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit tests

Primary Resources

enVisionmath2.0

Ancillary Resources

TeacherPayTeachers

Sample Lesson

Unit Name: Comparing and Recognizing Numbers 0-5 lesson 1-1 Count 1,2, and 3. (pg. 11)

NJSLS: K.CC.B.4a. Understand the realtionship between numbers & quantities, connect counting to cardinality.

Interdisciplinary Connection: Language arts

Statement of Objective: Count 1,2, and 3

Anticipatory Set/Do Now:Avctivate prior knowledge by counting objects throughout the room.

Learning Activity: Read the story "Count the Eggs", Act out the story and then color. (pg. 10)

Student Assessment/CFU's: Observation

Materials: Counters, Crayons, plastic self seling bags, small objects, dried pasta or dried beans.

21st Century Themes and Skills: Interactive Math Story

Differentiation/Modifications: Refer to page 11A

Integration of Technology: SmartBoard