

Unit 3: Numbers to 1,000

Content Area: **Math**
Course(s): **Sample Course**
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Title Section

Department of Curriculum and Instruction



Belleville Public Schools

Curriculum Guide

Mathematics: Grade 2

Unit 3: Numbers to 1,000

Belleville Board of Education

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Unit Overview

Unit 3 focuses on numbers to 1,000, adding within 1,000 using models and strategies, subtracting within 1,000 using models and strategies, understanding place value, and using place value understanding and properties of operations to add and subtract.

- Students will understand hundreds.
- Students will understand 3-digit numbers.
- Students will name place values.
- Students will read and write 3-digit numbers.
- Students will know identify different ways to name the same number.
- Students will identify place-value patterns with numbers.
- Students will skip count by 5s, 10s, and 100s to 1,000.
- Students will compare numbers using place value.
- Students will compare numbers on the number line.
- Students will add 10 and 100.
- Students will add on an open number line.
- Students will add using mental math.
- Students will add using partial sums.
- Students will use models to add.
- Students will explain addition strategies.
- Students will subtract 10 and 100.
- Students will count back to subtract on an open number line.
- Students will subtract using mental math.
- Students will use models to subtract.

- Students will explain subtraction strategies.

NJSLS

Below are the New Jersey Student Learning Standards associated with the student learning objectives for Unit 3.

MA.2.NBT.A.1	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases:
MA.2.NBT.A.2	Count within 1000; skip-count by 5s, 10s, and 100s.
MA.2.NBT.A.3	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.
MA.2.NBT.A.4	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.
MA.2.NBT.A.1a	100 can be thought of as a bundle of ten tens — called a “hundred.”
MA.2.NBT.A.1b	The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).
MA.2.NBT.B.7	Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.
MA.2.NBT.B.8	Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.
MA.2.NBT.B.9	Explain why addition and subtraction strategies work, using place value and the properties of operations.

Exit Skills

By the end of Unit 3 2nd grade Math Students should be able to:

- Understand hundreds
- Work with 3-digit numbers
- Name place values
- Read and write 3-digit numbers
- Identify different ways to name the same numbers
- Identify place value patterns with numbers
- Skip count by 5s, 10s, and 100s to 1000
- Compare numbers using place value
- Compare numbers on the number line
- Add 10 and 11
- Add on an open number line
- Add using mental math
- Add using partial sums

- Use models to add
- Explain addition strategies
- Subtract 10 and 100
- Count back to subtract on an open number line
- Add up to subtract on an open number line
- Subtract using mental math
- Use models to subtract
- Explain subtraction strategies

Enduring Understanding

Enduring Understandings

1. Number can be used to tell how many. The number system is based on groups of ten. Whenever there are 10 in one place value, you move to the next greater place value.
2. The number system is based on groups of ten. Whenever there are 10 in one place value, you move to the next greater place value. Place value blocks and drawings can be used to model and write three-digit numbers.
3. The position of a digit in a number tells you value. It takes 10 of a number in one place value to make a number in the next greater place value.
4. There are three common ways to write numbers-standard form, word form, and expanded form. Each way involves using place value to tell the value of each digit.
5. Numbers can be named in many ways. Recalling and using facts about equal amounts (such as 100 is equal to 10 tens, and 10 is equal to 10 ones) can help you name numbers in different ways.
6. Place value patterns can help you mentally count by 1s and 10s from a given number.
7. Skip count by 5s, 10s, and 100s using a number line.
8. Compare numbers using place value.
9. Compare and write a three-digit number that is greater than or less than another three-digit number.
10. Look for patterns to help when solving problems.
11. Place value patterns and basic facts can be used to help you mentally add 10 or 100 to any given three-digit number.
12. Three-digit numbers can be broken apart using hundreds, tens, and ones and added in three different ways. You can represent how you break apart and add numbers with hops or jumps on an open number line.
13. Three-digit numbers can be broken apart using hundreds, tens, and ones and added in three different ways. You can change the numbers to make it easier to add mentally, without changing the sum.
14. When adding three-digit numbers, you can add the hundreds, the tens, and the ones separately, and then

add the partial sums to find the total sum. Partial sums addition provides a bridge between mental addition and the standard algorithm.

15. The standard addition algorithm for three-digit numbers breaks the calculation into simpler calculations using place value, starting with the ones, then the tens, and then the hundreds. Answers to the simpler calculations are used to find the final sum.

16. Addition algorithms and addition strategies can be used to add two (or more) three-digit numbers; the sum is the same no matter which strategy you use. You can use place value and properties of operations to explain why the strategies work.

17. 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.

18. Place-value patterns and basic facts can be used to help you mentally subtract 10 or 100 from any given three-digit number.

19. Three-digit numbers can be broken apart using hundreds, tens, and ones to subtract in different ways. You can represent how you break apart and subtract numbers with hops or jumps on an open number line.

20. Three-digit numbers can be broken apart using hundreds, tens, and ones, and subtracted in different ways. You can change the numbers to make it easier to subtract mentally, without changing the difference.

21. The standard subtraction algorithm for three-digit numbers break the calculation into simpler calculations using place value, starting with the ones, then the tens, and then the hundreds. Answers to the simpler calculations are used to find the final difference.

22. The standard subtraction algorithm and subtraction strategies can be used to subtract with 3-digit numbers; the difference is the same no matter which strategy you use. You can use place value and properties of operations to explain why the strategies work.

23. Good math thinkers know what the problem is about. They have a plan to solve it. They keep trying if they get stuck.

Essential Questions

- **How can you count, read, and show numbers to 1,000?**
- **What are strategies for adding numbers to 1,000?**
- **What are strategies for subtracting numbers to 1,000?**

Learning Objectives

- Understand place value and count by hundreds to 1,000.
- Use place value blocks and drawings to model and write 3-digit numbers.
- Tell the value of a digit by where it is placed in a number.
- Read and write 3-digit numbers in expanded form, standard form, and word form.
- Make and name a number in different ways to show the same value.
- Use place-value patterns to mentally count by 1s and 10s from a given number.
- Skip count by 5s, 10s, and 100s using a number line.
- Compare numbers using place value.
- Compare and write a three-digit number that is greater than or less than another three-digit number.
- Look for patterns to help when solving problems.
- Add 10 or 100 mentally using place value.
- Use an open number line to add 3-digit numbers.
- Add 3-digit numbers using mental math strategies.
- Add 3-digit numbers using partial sums.
- Use models to add 3-digit numbers.
- Use different addition strategies and explain why they work.
- Think about and check work as students solve a problem.
- Subtract 10 or 100 mentally using place value strategies.
- Use an open number line to count back to subtract 3-digit numbers.
- Use an open number line to add up to subtract 3-digit numbers.
- Use mental math to subtract.
- Use models to subtract 3-digit numbers.
- Explain subtraction strategies using models, place value and mental math.
- Solve problems that take more than one step.

Interdisciplinary Connections

Math and Science Project (STEM)

Topic 1: Breaking Apart and Putting Together

- Have students estimate first, and then count the number of pieces shown in the model.
- Ask students to think of other models they could make using the same pieces used in the model shown on Student's Edition, p. 503.
- Extension-Have students make a model of a house using building blocks. Then, ask them to count the number of blocks they used and write that number in standard, expanded, and word form.

Topic 2: Building up to 1,000

- Discuss with students how it takes a lot of planning to build a tall building.

- Ask students if they would like to try to build a tall building.
- Extension-Have students do research to find out the height and location of the 3 tallest buildings in the world.

Topic 3: Making Models

- Discuss with students how bees move pollen from one flower to another.
- Ask students if they know why moving pollen from one place to another helps plants grow fruit and vegetables.
- Extension-Have students do research to learn about how bees benefit from moving pollen from one flower to another.

LA.K-12.NJSLSA.R	Reading
LA.K-12.NJSLSA.W	Writing
SCI.K-2-ETS1	Engineering Design
TECH.8.1.2	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Alignment to 21st Century Skills & Technology

Key SUBJECTS AND 21st CENTURY THEMES

Mastery of key subjects and 21st century themes is essential for all students in the 21st century.

Key subjects include:

- 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

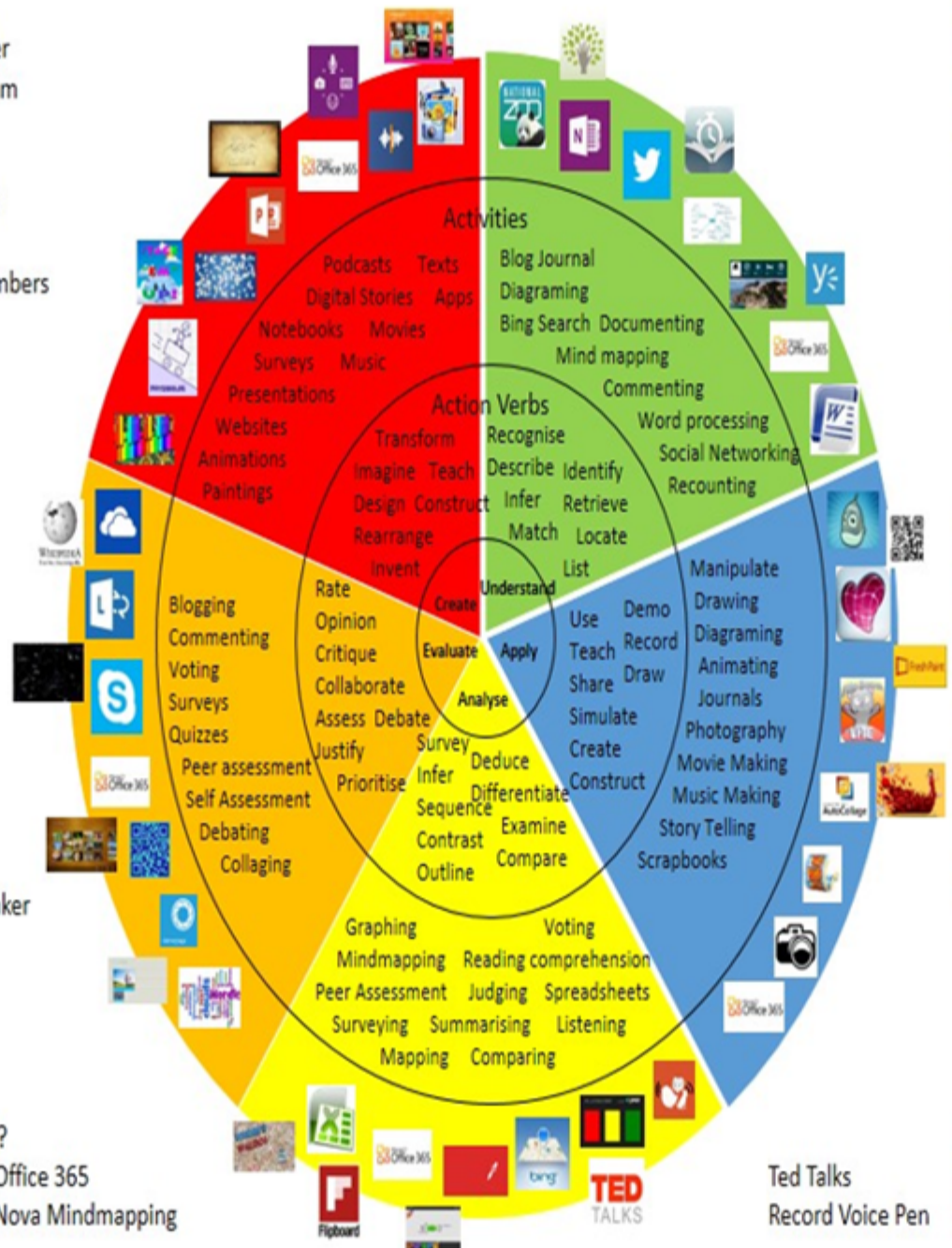
What technology can be used in this unit to enhance learning?

Win 8.1 Apps/Tools Pedagogy Wheel

Podcasts
Photostory 3
Kid Story Builder
Music Maker Jam
Paint A Story
Office 365
MS PowerPoint
Stack 'Em Up
NqSquared Numbers
Physamajig
Xylophone 8

Wikipedia
Skydrive
Lync
SkyMap
Skype
Office 365
Puzzle Touch
Easy QR
Memorylage
Life Moments
Word Cloud Maker

Where's Waldo?
MS Excel
Flipboard
Office 365
Nova Mindmapping



Differentiation

Resources:

- NJDOE: Instructional Supports and Scaffolds for Success in Implementing the Common Core State

Standards <http://www.state.nj.us/education/modelcurriculum/success/math/k2/>

- enVision math 2.0 Technology Center, Homework and Practice, On-Level and Advanced Activity Centers, and Math Diagnosis and Intervention System 2.0

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 clarify
- 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 work presented 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 work presented 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

Please list ways educators may effectively check for understanding in this section.

- 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

enVision math 2.0 Teacher's Guide, Digital Resources, Intervention Activities, & State of NJ, Department of Education: New Jersey Model Curriculum

Ancillary Resources

Please list ALL other resources available to strengthen your lesson.

