Unit 2: Basic Third Grade Math Skills

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Unit 2: Basic Third Grade Math Skills

Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Third Grade World Language

Unit 2: Basic 3rd Grade Math Skills

Belleville Board of Education

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Unit Overview

Unit 2 is designed to build fluency with the target language numbers. Math will be explored and practiced through the 4 main operations using the target language in which students will "think" in the new language. Components of all previous units will continually be addressed and fortified. Communication skills through discussing the experiences of boys and girls in different countries. Maps, pictures and song will amplify students' exposure to the rest of the world.

Enduring Understandings

Although words used to describe them are different, mathematical computations behave in a similar way in both the target language and English.

The vocabulary of the numbers and operations are similar to related vocabulary in English.

Essential Questions

How can I use the target language to commuicate cross culturally regarding numbers and mathematical computations?

How do numbers and mathematical computations behave in the target language?

Exit Skills

Students will be able to:

Ask and answer to "What number is this?" in the target language.

Count to 50 in the target language.

Complete mathematical equations up to 50 using the 4 basic operations written and spoken in the target language.

Write down numbers from 1 to 50 as teacher pronounces them.

New Jersey Student Learning Standards (NJSLS)

WL.7.1.NM.A.1	Recognize familiar spoken or written words and phrases contained in culturally authentic materials using electronic information and other sources related to targeted themes.
WL.7.1.NM.A.2	Demonstrate comprehension of simple, oral and written directions, commands, and requests through appropriate physical response.
WL.7.1.NM.A.C.4	Many products and practices related to home and community are shared across cultures; others are culture - specific. (Topics that assist in the development of this understanding should include, but are not limited to: home life, places in the community, activities within the community, and travel.)
WL.7.1.NM.A.L.1	The Novice - Mid language learner understands and communicates at the word level and can independently identify and recognize memorized words and phrases that bring meaning to text.
WL.7.1.NM.B.C.6	Maps, graphs, and other graphic organizers facilitate understanding of information on a wide range of topics related to the world and global issues. They make complex concepts more accessible to second - language learners who have limited proficiency in the language. (Content areas that assist in the development of this understanding should include, but are not limited to: history, economics, science, and geography.)
WL.7.1.NM.B.L.1.b	Ask memorized questions.

Interdisciplinary Connections

MA.3.OA.A	Represent and solve problems involving multiplication and division.
MA.3.OA.A.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each.
LA.RL.3.1	Ask and answer questions, and make relevant connections to demonstrate understanding

	of a text, referring explicitly to the text as the basis for the answers. For example, determine the unknown number that makes the equation true in each of the equations 8 × ? = 48, 5 = __ ÷ 3, 6 × 6 = ?.
MA.3.OA.B	Understand properties of multiplication and the relationship between multiplication and division.
SOC.K-4.1.2.2	Use thematic maps and other geographic representations to obtain, describe, and compare spatial patterns and information about people, places, regions, and environments.
TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.

Learning Objectives

Students will be able to:

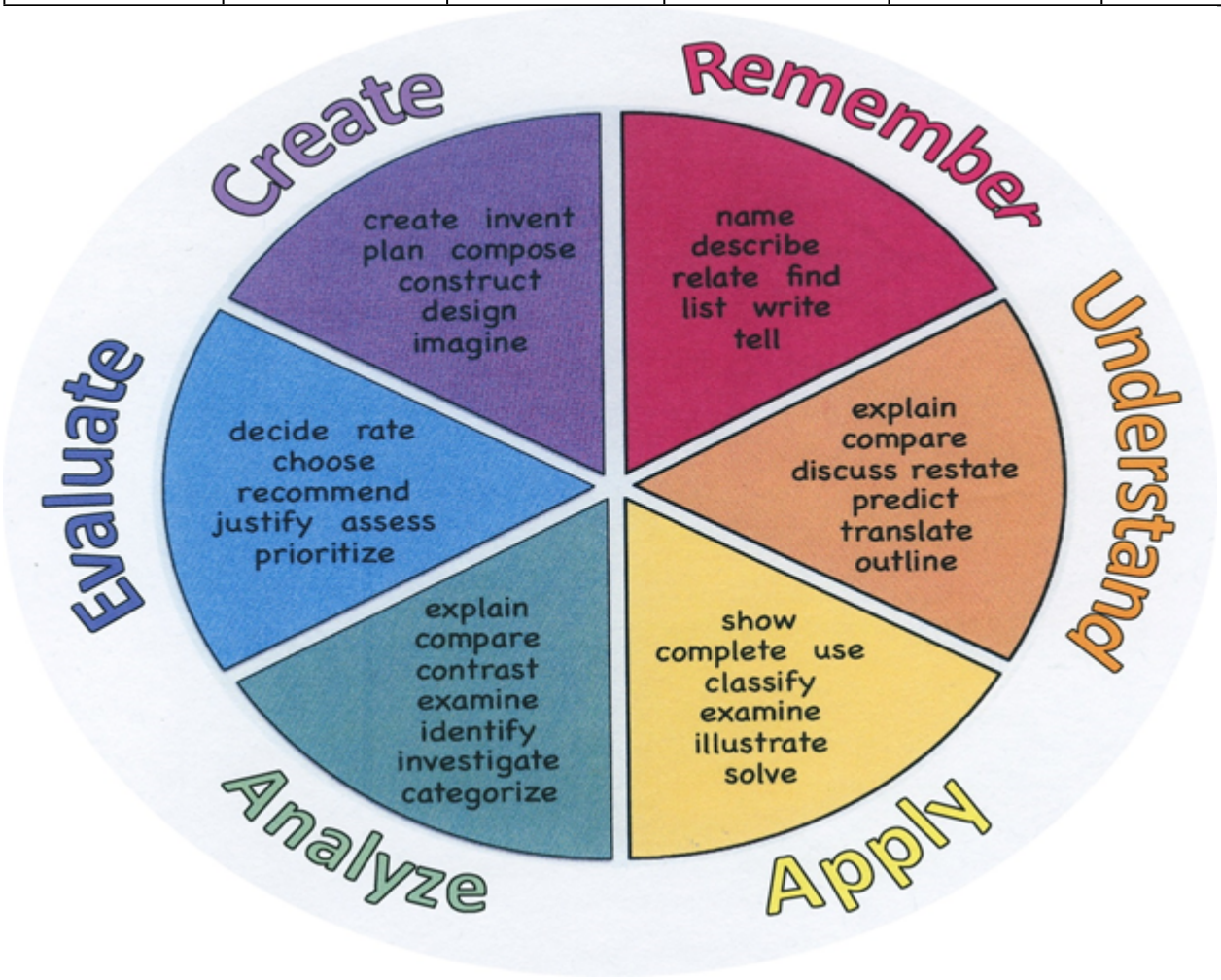
Identify numbers called out by teacher.

Complete math sentences using target language.

Action Verbs: Below are examples of action verbs associated with each level of the Revised Bloom's Taxonomy.

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 Estimate Extrapolate Generalize Predict	Modify Operate Subtract			



Suggested Activities & Best Practices

Begin each class with the date, including the day, month and year, recalling each number represented.

Hold math games in which students must quickly respond to math questions using all 4 operations in the target language.

Assessment Evidence - Checking for Understanding (CFU)

Completion of quiz of math skills with the written number words are in the target language.

Choral responses by students of math questions presented by teacher and fellow students.

- Admit Tickets
- Anticipation Guide
- Common benchmarks
- Compare & Contrast
- Create a Multimedia Poster
- DBQ's
- Define
- Describe
- Evaluate
- Exit Tickets
- Explaining
- Fist- to-Five or Thumb-Ometer
- Illustration
- KWL Chart
- Learning Center Activities
- Newspaper Headline
- Outline
- Question Stems
- Quickwrite
- Quizzes

- Red Light, Green Light
- Self- assessments
- Socratic Seminar
- Study Guide
- Surveys
- Teacher Observation Checklist
- Think, Pair, Share
- Think, Write, Pair, Share
- Top 10 List
- Unit review/Test prep
- Unit tests
- Web-Based Assessments
- Written Reports

Primary Resources & Materials

Spanish is Fun workbook, Teach Them Spanish workbook, teacher made worksheets

Ancillary Resources

SmartBoard, YouTube, classroom objects, flash cards

Technology Infusion

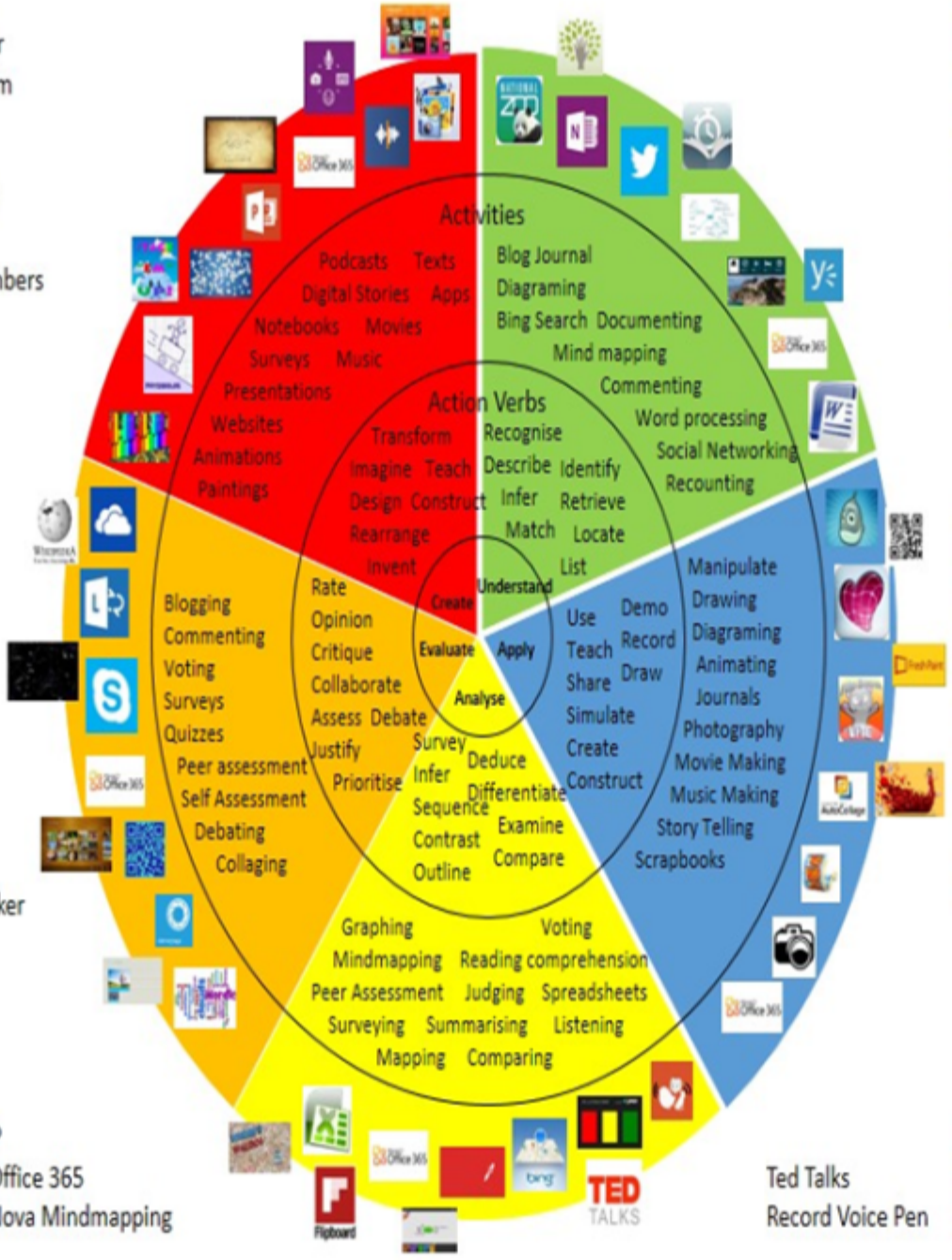
Students use Chromebooks for research and vocabulary practice, such as numbers.

YouTube videos are employed for sing alongs with numbers, enhancing what students have already learned.

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 Office 365
Flipboard Nova Mindmapping

Ted Talks
Record Voice Pen

Originally taken from http://www.coetail.com/vzimmer/files/2013/02/iPadagogy-Wheel.001.jpg
And adapted for Windows 8.1 devices by Charlotte Beckhurst @CharBeckhurst

Alignment to 21st Century Skills & Technology

Mastery and infusion of **21st Century Skills & Technology** and their Alignment to the core content areas is essential to student learning. The core content areas include:

- English Language Arts;
- Mathematics;
- Science and Scientific Inquiry (Next Generation);
- Social Studies, including American History, World History, Geography, Government and Civics, and Economics;
- World languages;
- Technology;
- Visual and Performing Arts.

CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CAEP.9.2.4.A	Career Awareness
TECH.8.1.5	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.

21st Century Skills/Interdisciplinary Themes

- 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

CAEP.9.2.4.A.2	Identify various life roles and civic and work related activities in the school, home, and community.
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.

21st Century Skills

- Civic Literacy

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

Differentiation

Statement of objective by reading it on the board and repeating after teacher.

Visuals are often utilized to depict vocabulary and it's practice, as in math sentences.

Extra time is devoted to repitition and review of vocabulary and themes, as math operations.

Differentiations:

- Small group instruction
- Small group assignments
- Extra time to complete assignments
- Pairing oral instruction with visuals
- Repeat directions
- Use manipulatives
- Center-based instruction
- Token economy
- Study guides
- Teacher reads assessments allowed
- Scheduled breaks
- Rephrase written directions
- Multisensory approaches
- Additional time
- Preview vocabulary
- Preview content & concepts
- Story guides
- Behavior management plan
- Highlight text
- Student(s) work with assigned partner
- Visual presentation
- Assistive technology
- Auditory presentations
- Large print edition
- Dictation to scribe
- Small group setting

Hi-Prep Differentiations:

- Alternative formative and summative assessments
- Choice boards
- Games and tournaments
- Group investigations
- Guided Reading
- Independent research and projects
- Interest groups

- Literature circles
- Multiple intelligence options
- Multiple texts
- Personal agendas
- Project-based learning
- Problem-based learning
- Stations/centers
- Think-Tac-Toes
- Tiered activities/assignments
- Tiered products
- Varying organizers for instructions

Lo-Prep Differentiations

- Choice of books or activities
- Cubing activities
- Exploration by interest
- Flexible grouping
- Goal setting with students
- Jigsaw
- Mini workshops to re-teach or extend skills
- Open-ended activities
- Think-Pair-Share
- Reading buddies
- Varied journal prompts
- Varied supplemental materials

Special Education Learning (IEP's & 504's)

Visual examples of numbers are demonstrated as part of the lesson.

Vocabulary is vocally spelled out as it is written on board as in the numbers.

Shorter responses are accepted for solving of math problems.

- 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
- multi-sensory presentation
- multiple test sessions
- preferential seating
- preview of content, concepts, and vocabulary
- Provide modifications as dictated in the student's IEP/504 plan
- 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

English Language Learning (ELL)

Visuals along with vocabulary is a constant practice as with number representations.

Repetition exercises like chorals produce familiarity and fluency as in addition sentences.

- 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

At Risk

Demonstrate appreciation of work completed, rather than what might be missing as in solving math problems.

Individual instruction by teacher during assignments is offered quietly during math quizzes.

- 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

Talented and Gifted Learning (T&G)

Have students create crossword puzzles with representation of math terms in the target language.

Have students assist struggling students with computation and vocabulary.

- Above grade level placement option for qualified students
- Advanced problem-solving
- Allow students to work at a faster pace
- Cluster grouping
- Create a plan to solve an issue presented in the class or in a text
- Flexible skill grouping within a class or across grade level for rigor
- Higher order, critical & creative thinking skills, and discovery
- Multi-disciplinary unit and/or project

- Teacher-selected instructional strategies that are focused to provide challenge, engagement, and growth opportunities
- Utilize exploratory connections to higher-grade concepts
- Utilize project-based learning for greater depth of knowledge

Sample Lesson

Unit Name: Math Skills

NJSLS: See link

Interdisciplinary Connection: Art

Statement of Objective: SWDAT demonstrate through art math skills by completing some math sentences accompanied by shapes.

Anticipatory Set/Do Now: Review the operations of addition and subtraction, recalling related vocabulary in the target language.

Learning Activity: Students will see examples of shapes on board for students to count out loud. We will take turns multiplying and dividing the shapes, speaking in the target language.

Student Assessment/CFU's: Chorals, individual responses, board work, worksheet

Materials: Board, classroom items, worksheets

21st Century Themes and Skills: Civic Literacy

Differentiation/Modifications: Visuals, Kinestetics

Integration of Technology: Usage of Chromebook for math assistance

MA.3.OA.A	Represent and solve problems involving multiplication and division.