Unit 4: Length

Content Area: **Math**
Course(s): **Sample Course**
Time Period: **AprMay**
Length: **approx. 8 weeks / 2nd Grade**
Status: **Published**

Title Section

Department of Curriculum and Instruction

Belleville Public Schools

Curriculum Guide

Mathematics: Grade 2

Unit 4: Length

Belleville Board of Education

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Board Approved: August 30, 2017

Unit Overview

Unit 4 focuses on measuring length and addition and subtraction and length.

- Students will learn how to measure and estimate lengths in standard units.
- Students will realate addition and subtraction to length.

NJSLS

Below are the New Jersey Student Learning Standards associated with the students learning objectives for Unit 4.

MA.2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
MA.2.MD.A.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
MA.2.MD.A.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
MA.2.MD.A.3	Estimate lengths using units of inches, feet, centimeters, and meters.
MA.2.MD.A.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

MA.2.MD.B.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.
MA.2.MD.B.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2,..., and represent whole-number sums and differences within 100 on a number line diagram.

Exit Skills

By the end of Unit 4, 2nd grade Math students should be able to:

- Estimate length
- Measure with inches
- Measure with inches, feet, and yards
- Measure length using different customary units
- Measure with centimeters
- Measure with centimeters and meters
- Measure length using different metric units
- Compare lengths
- Add and subtract measurements
- Find unknown measurements
- Continue to find unknown measurements
- Add and subtract on a number line

Enduring Understanding

1. The length of a known object can be used to estimate the length of another object to the nearest inch, foot, or yard.

2. Length and height are measurable in inches.

3. Length and height are measurable in inches, feet, and yards.

4. When measuring length, the longer the chosen unit, the fewer units are needed; the shorter the unit, the more units that are needed.

5. Length and height are measurable in centimeters.

6. Length and height are measurable in centimeters and meters.

7. When measuring length, the longer the chosen unit, the fewer units are needed; ther shorter the unit, the more units that are needed.

8. The lengths of two objects can be compared by subtracting to find the difference.

9. Good math thinkers are careful about what they write and say, so their ideas about math are clear.

10. Measurements in the same unit like inches can be added or subtracted in the same way as adding and

subtracting whole numbers. The measurement unit needs to be written with the sum or difference.

11. Pictures and equations can be used to solve word problems involving measurements. Measurements can be added and subtracted in the same way as other whole numbers.

12. A sum can be represented as the total length of two line segments on a number line. A subtraction problem can be represented as the difference of two line segments on a number line.

13. Good math thinkers know how to pick the right tools to solve math problems.

Essential Questions

- What are ways to measure length?
- How can you add and subtract lengths?

Learning Objectives

- Estimate the length of an object by relating the length of the object to a measurement the students know.
- Estimate measures and use a ruler to measure length and height to the nearest inch.
- Estiimate measures and use tools to measure the length and height of objects to the nearest inch, foot, and yard.
- Estimate and measure the length and height of objects in inches, feet, and yards.
- Estimate measures and use a ruler to measure length and height to the nearest centimeter.
- Estimate measures and use a ruler, meter stick, or tape measure to measure length and height to the nearest centimeter of meter.
- Measure the length and height of object using different metric units.
- Tell how much longer one object is than another.
- Choose tools, units, and methods that help the students be precise when they measure.
- Solve problems by adding or subtracting length measurements.
- Add or subtract to solve problems about measurements.
- Add or subtract to solve measurement problems by using drawings and equations.
- Add and subtract on a number line.
- CHooose the best tool to use in order to solve problems.

Interdisciplinary Connections

Math and Science Project STEM

Topic 1: Growing and Measuring

- Discuss with students what plants need to grow.
- Ask students if they have noticed how sunlight and water help plants grow.
- Extension-Have students draw a picture of two different plants. Have students measure the height of each plant and tell which of the two plants is taller.

Topic 2: Modeling Land, Water, and Length

- Ask students if they have noticed the different shapes and sizes of water and land in an area.
- Discuss with students how land and water can change their shape according to the weather circumstances and other characteristics of thier location.
- Extension-Have students make a model to represent the shapes and kinds of land and bodies of water in your area.

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 21stcentury.

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

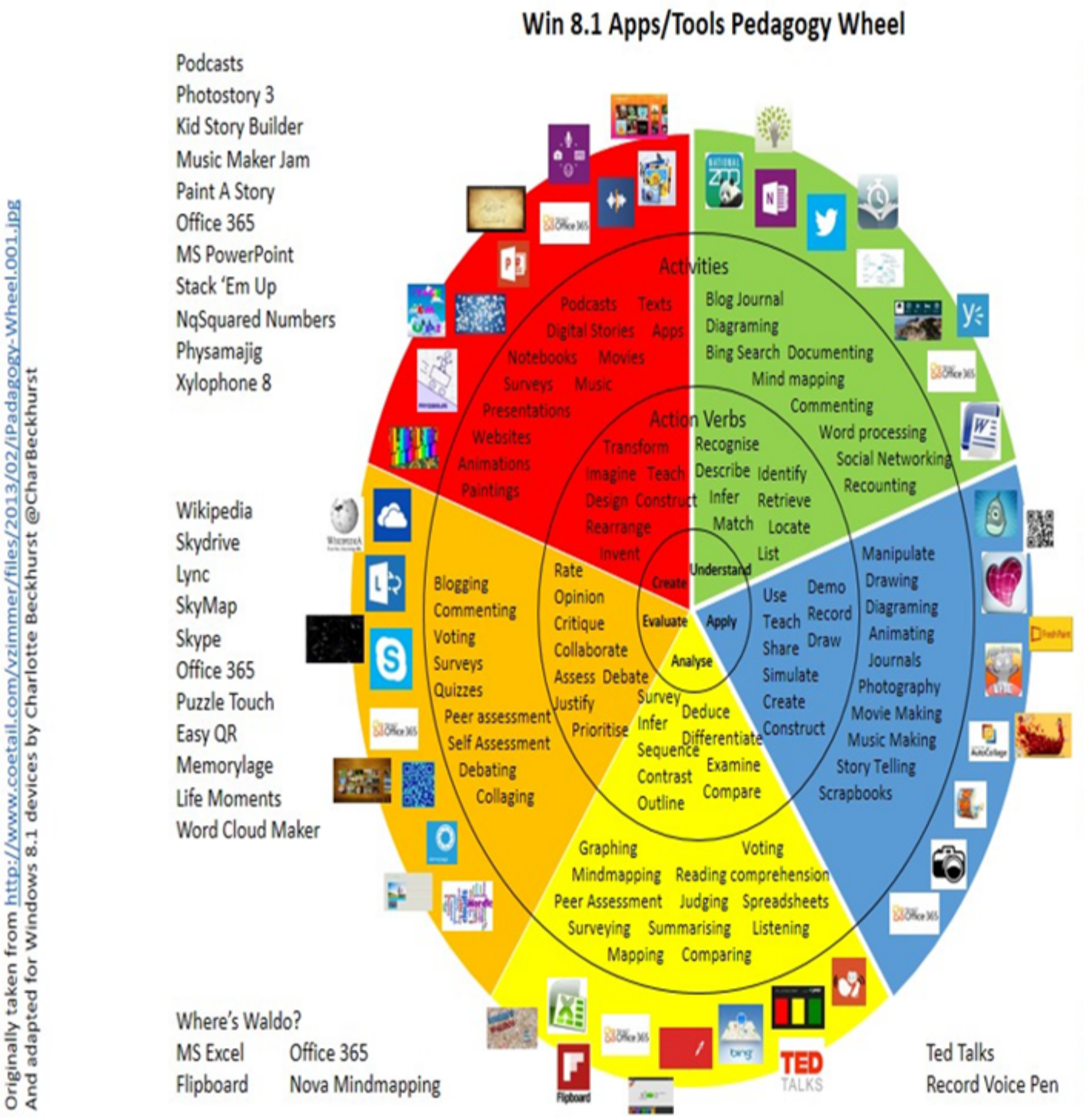
- Global Awareness
- Health Literacy

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?



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 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

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

- 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.