Grade 4 Unit 7
Measurement

Volume 1 Issue 7

References

Helpful Links:

Woodlands Resources
http://resources.woodlands-junior.kent.sch.uk/maths/shapes/angles.html
(Angle Games)

Math Play
http://www.math-play.com/Angles-Jeopardy/Classifying-Angles-Game.html
(Classifying Angles Jeopardy Game)

Math Playground
http://www.mathplayground.com/measuringangles.html
(Measuring Angles with a Protractor)

Soft Schools
http://www.softschools.com/measurement/games/
(Measurement Games)

Johnnie's Math Page (Angle Practice)
http://jmathpage.com/topics/jmpheadgeometry.html

Johnnie's Math Page (Measurement Practice)
http://jmathpage.com/topics/jmpheadmeasurement.html

Dear Parents,

Your child's math class is calling for students to be actively engaged in math activities in order to develop conceptual understanding of skills and concepts! In the classroom, students will frequently work on tasks and activities to discover and apply mathematical reasoning and thinking. Students are expected to explain or justify their answers and to write clearly and properly. Your child will receive a consumable My Math textbook and online access from his or her teacher.

Concepts Students will Use and Understand

- Investigate what it means to measure length, weight, liquid volume, time, and angles
- Understand how to use standardized tools to measure length, weight, liquid volume, time, and angles
- Understand how different units within a system (customary and metric) are related to each other
- Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; L, ml; hr, min, sec.
- Solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals.
- Recognize angles as geometric shapes that are formed when two rays share a common endpoint, and understand concepts of angle measurement
- Measure angles in whole number degrees using a protractor
- Recognize angle measurement as additive and when an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts.

Vocabulary

Customary System: the system of weights and measures used in the U.S. The system includes units such as yards, feet, inches, gallons, pints, quarts, cups, pounds, and ounces
Metric System: the system of weights and measures that is based on powers of ten. The system includes units such as gram, kilogram, liters, milliliters, meter, and kilometer
acute angle: an angle that is less than 90 degrees
right angle: an angle that is equal to 90 degrees
obtuse angle: an angle that is greater than 90 degrees but less than 180 degrees
one-degree: the measure of a plane angle that represents 1/360 of a full rotation

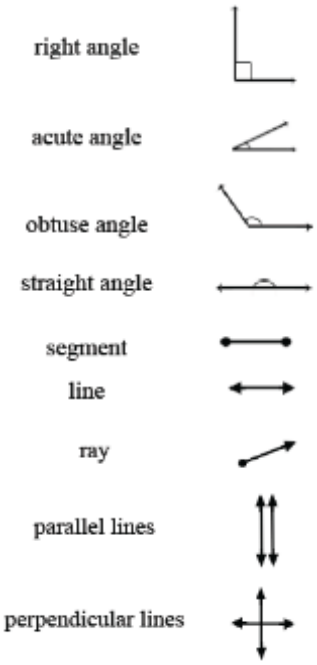
Math Grade 4
Textbook Connection:
Ch. 11, Lessons 11.1-11.6
Ch. 12, Lessons 12.1-12.3; 12.5-12.6
Ch. 14 Lessons 14.3-14.7

Textbook Online:

http://connected.mcgraw-hill.com/connected/login.do

Student User ID:
ccsd(student ID)
Password: cobbmath1

Symbols



Example 1

Students use conversion tables to express larger units in terms of smaller units within the same measurement system (customary system or metric system).

kg	g
1	1000
2	2000
3	3000

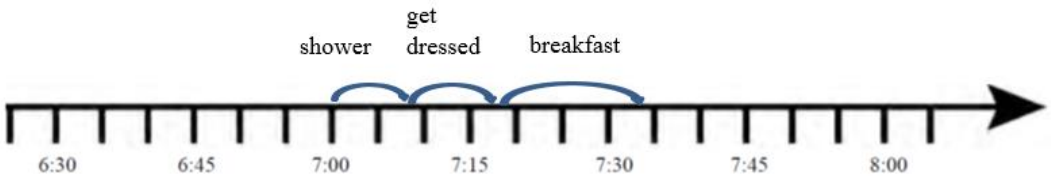
ft	in
1	12
2	24
3	36

lb	oz
1	16
2	32
3	48

Example 2

Students use number line diagrams to calculate elapsed time.

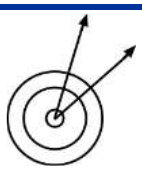
At 7:00 a.m. Candace wakes up to go to school. It takes her 8 minutes to shower, 9 minutes to get dressed, and 17 minutes to eat breakfast. How many minutes does she have until the bus comes at 8:00 a.m.? Use the number line to help solve the problem.



Candace is finished at 7:34. If the bus comes at 8:00, I can count on to from 7:34 to 8:00 to find how many minutes it takes for the bus to arrive. From 7:34 to 7:35 is one minute. From 7:35 to 7:40 is 5 minutes and from 7:40 to 8:00 is 20 minutes. 1 minute + 5 minutes + 20 minutes = 26 minutes until the bus arrives.

Example 3

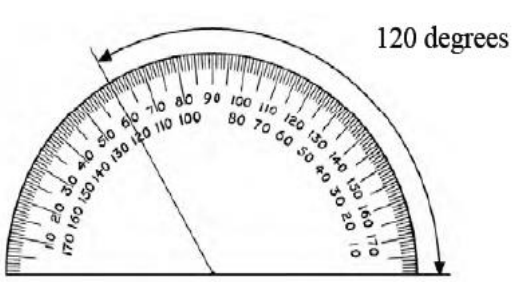
Students explore angles as a series of "one-degree turns."

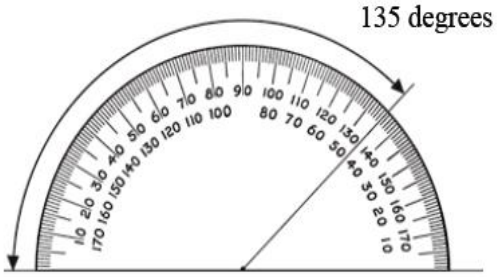


A water sprinkler rotates one-degree at each interval. If the sprinkler rotates a total of 100 degrees, how many one-degree turns has the sprinkler made?

Example 4

Students measure and draw angles using a protractor.

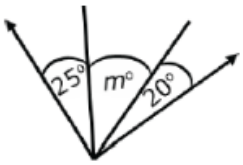




Example 5

Students investigate additive angles by decomposing angles into smaller parts.

If the two rays are perpendicular, what is the value of *m*? (25° + 20° + m° = 90°)



Activities to Complete at Home:

- Use index cards to create a set of cards that include various angle measures. Ask your child to use a protractor to identify the angles as acute, right, or obtuse. Use a protractor to find the measure of the angles.
- Relate angles to real-world scenarios. For example, discuss how angles are used in construction, opening and closing the door, hands on an analog clock, artwork, architecture, etc.
- Use toothpicks to design different shapes and angles. Give your child some shape and angle riddles to solve! For example, I am a shape with four sides of equal length. I have four right angles. What shape am I? (square)
- Have your child draw a picture that involves different types of angles. Measure the angles with a protractor.
- Investigate units of measure when cooking meals. Have your child show gallons, quarts, pints, and cups when mixing ingredients.
- How far is a mile? How long is a yard? Explore units of distance and length when traveling or watching sports (for example, how many yards did the football player run?)