

Unit 5: Mathematics- Lines, Angles, and Shapes (Grade 4)

Content Area: **Mathematics**
Course(s): **Math 4**
Time Period: **Marking Period 4**
Length: **June**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

MA.4.G.A	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
MA.4.G.A.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.
MA.4.G.A.2	Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.
MA.4.G.A.3	Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
MA.4.MD.C.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:
MA.4.MD.C.6	Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.
MA.4.MD.C.7	Recognize angle measure as additive. 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. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.
MA.4.MD.C.5a	An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.
MA.4.MD.C.5b	An angle that turns through n one-degree angles is said to have an angle measure of n degrees.
SEL.PK-12.2.2	Recognize the skills needed to establish and achieve personal and educational goals
SEL.PK-12.2.3	Identify and apply ways to persevere or overcome barriers through alternative methods to achieve one’s goals
SEL.PK-12.3.4	Demonstrate an awareness of the expectations for social interactions in a variety of settings
SEL.PK-12.4.1	Develop, implement and model effective problem-solving, and critical thinking skills
SEL.PK-12.5.1	Establish and maintain healthy relationships
SEL.PK-12.5.2	Utilize positive communication and social skills to interact effectively with others

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How are angles measured, added and subtracted?
- How can lines, angles, and shapes be described, analyzed, and classified?
- What is symmetry and how can it be identified?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- A figure can be classified as symmetric if it can be folded on a line to form two equal halves that fit on top of each other. Some figures have many lines of symmetry.
- Angle measurements can be added or subtracted using the standard algorithm in order to combine angles or find missing angles.
- Angles are measured in units of 1 degree by using a protractor.
- Angles can be described, analyzed, and classified based upon their size.
- Lines and segments can be described, analyzed, and classified based on their points and how they interact with one another.
- Shapes can be described, analyzed, and classified based on their number of sides and size of their angles.

Content

Students will be able to:

- Identify and describe points, lines and planes.
- Learn geometric terms to describe parts of lines and types of angles.
- Use unit angles and fractions of a circle to find angle measures.
- Use a smaller angle to measure a larger angle by repeating the unit.
- Measure and draw angles.
- Find unknown angle measures by adding and subtracting.
- Identify polygons and quadrilaterals.
- Identify and classify triangles.
- Determine if a plane figure has line symmetry and, if so, how many lines of symmetry it has.
- Solve problems by making and testing generalizations.

Vocabulary students will know:

point

line

plane

parallel

lines

intersecting lines

line segment

ray

angle

right angle

acute angle

obtuse angle

straight angle

degree

unit angle

angle measure

protractor

polygon

side

vertex

triangle

quadrilateral

pentagon

hexagon

octagon

equilateral triangle

isosceles triangle

scalene triangle

right triangle

acute triangle

obtuse triangle

rhombus

trapezoid

parallelogram

rectangle

square

symmetric

line of symmetry

Resources

Envision2020 Resources:

- Textbook
- <https://reader.savvasrealize.com/#/login>
- Lesson Flipcharts
- Daily Common Core Review
- Quick Checks
- Mad Minutes
- Envision Topic Tests
- Manipulatives
- Reteaching Pages
- Practice Pages
- Enrichment Pages
- Math Centers

Specific Items for Lines, Angle, and Shapes:

- Online math games from teacher website.