2 Dimensional figures
↳ Directions

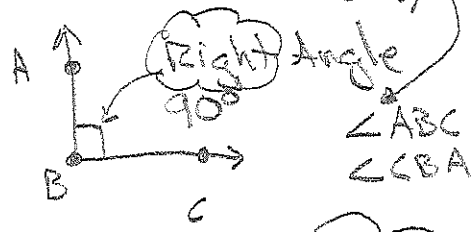
5th Class

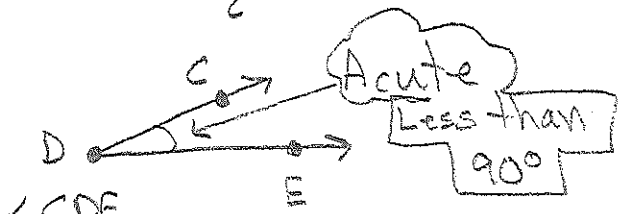
1D — one direction

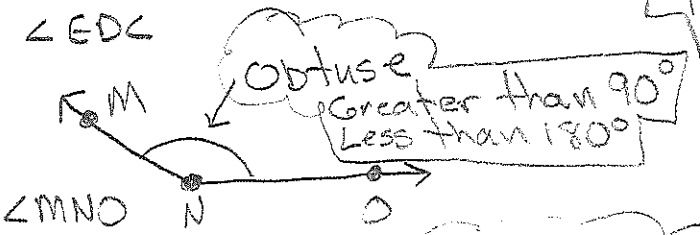
2D — two directions

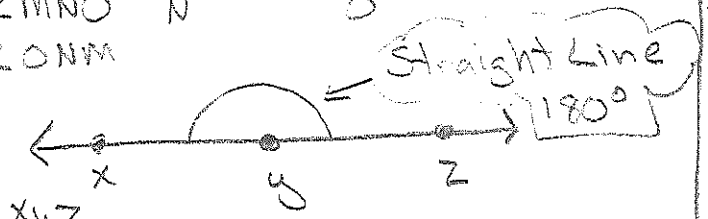
3D — three directions

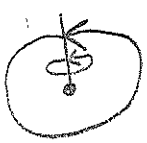
Angles





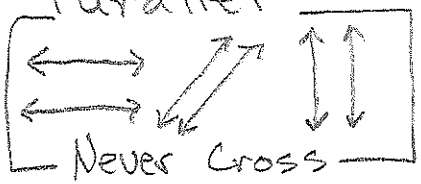






Full Circle
360°

Parallel



Never Cross

Perpendicular

Intersecting

↳ Lines that cross

Polygons

many sides

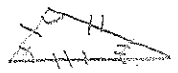
- 3 sides or more
- Close
  - no curves
  - no lines cross

Triangles

Right Triangle

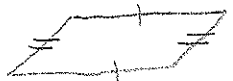
Isosceles
- 2 sides equal
- 2 angles equal

Equilateral
- all sides equal
- all angles equal

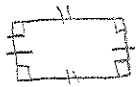


Scalene
- all sides and angles different

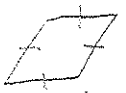
Quadrilaterals



Parallelogram



Rectangle



Rhombus

Square

Mathematical Standards and Practices

- We will use tables to identify and draw 2 Dimensional shapes comparing their attributes mathematically.
- We will attend to geometric precision when classifying 2D figures in a hierarchy.

We Know...

Inquiry
2 D Shapes

We want to know...

UNIT PLANNING TOOL

Planning Focus: Geometry: 2D Shapes **Grade Level:** 5th

Classify two-dimensional figures into categories based on their properties

MGSE5.G.3 Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

MGSE5.G.4 Classify two-dimensional figures in a hierarchy based on properties (polygons, triangles and quadrilaterals).

Mathematical Practices being emphasized:

2. Reason abstractly and quantitatively. Students demonstrate abstract reasoning about rational relationships among geometric properties. Students go beyond simple recognition to an analysis of the properties and how they interrelate.

4. Model with Mathematics. Students use tables to identify and draw all three types of triangles comparing their attributes in mathematical and real-world contexts.

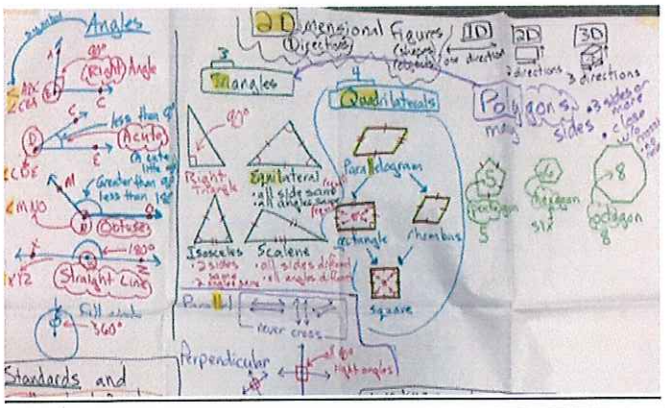
Essential Questions

How can plane figures be categorized and classified?
How can you classify different types of quadrilaterals?
Why is a square always a rectangle?
What are ways to classify triangles?
What are the properties of quadrilaterals?
Where is geometry found in your everyday world?
What careers involve the use of geometry?

Key Concepts

Two-Dimensional figures are classified by their properties.
Two-Dimensional figures can fit into more than one category.
Identify and describe properties of two-dimensional figures more precisely

Visual Models/ Algorithms/ Diagrams for Compendium



Pre and Post Assessments

Pre and post assessments in unit.
Exit slips (teacher developed and from unit)

Preassessment for classroom demo – see attached. (Preassessment based on concepts that will help the teachers know students' current understanding of fractions.)

Other formative assessment opportunities:

- Simultaneous Numbered Heads
- Inquiry Chart
- Work on unit lessons
- Guided math group

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Connections (Real World Applications)

computer-aided design for construction blueprints
the design of assembly systems in manufacturing
nanotechnology
computer graphics
visual graphs
video game programming
virtual reality creation
carpentry
architecture

Language Functions/Structures

Describe First we _____. Then we ___. Finally, we ____

Explain We decided to _____ because _____. To solve the problem, we ____ and then ____.
The two polygons share ___ and ____ because ...

Analyze ____ and ____ are quadrilaterals because ... ____ and _____ are classified triangles because ...

____is not classified as a ___ because...

Vocabulary

acute angle, acute triangle, congruence/congruent, equilateral triangle, hexagon, irregular polygon, isosceles triangle, kite, obtuse angle, parallel lines, parallelogram pentagon, perpendicular lines, plane figure, polygon quadrilateral, rectangle, regular polygon, right angle, right triangle rhombus/rhombi, scalene triangle, square, triangle, trapezoid, two-dimensional, vertex

Focus and Motivation

Video and quizzes on Brainpop: Polygons, Types of Triangles, Parallel & Perpendicular Lines
Videos on StudyJams: Classifying Quadrilaterals, Classify Triangles, Classifying Angles

Literature: *The Greedy Triangle* by Marilyn Burns
Sir Cumference and the Great Knight of Angleland by Cindy Neuschwander
Where a Line Bends, A Shape Begins by Rhonda Gowler Greene

Activity with pattern blocks (polygon shapes): If a ___ is a ___, then what is ___? This _____ belongs with this group because_____.

Activity: Polygon Capture (Mathematics•GSE Grade 5•Unit 5: 2-D Figures)

Song on Studyjams; Classify Quadrilaterals (Karaoke)

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