



Department of Curriculum & Instruction

First Grade Math

Unit	1-9 Geometry and Fractions
Time Frame	2/22-3/26
Big Ideas	<ol style="list-style-type: none"> 1. Shapes have defining attributes that distinguish them from other figures 2. Shapes can be joined together or taken apart to form other shapes 3. Shapes can be divided into equal size parts called halves and fourths.
Essential Questions	<ol style="list-style-type: none"> 1. Why is it important to distinguish the attributes of various geometric figures? 2. How can I put shapes together and take them apart to form other shapes? 3. How can a shape be divided into equal parts in more than one way?

TEKS / Student Expectations	Skills	Concepts
<p>(Readiness TEKS)</p> <p>1.6A classify and sort regular and irregular two-dimensional shapes based on attributes using informal geometric language</p> <p>1.6D identify two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons and describe their attributes using formal geometric language</p> <p>1.6E identify three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms, and describe their attributes using formal geometric language</p>	<p>Classify Sort</p> <p>Identify</p> <p>identify</p>	<p>regular and irregular two-dimensional shapes based on attributes using informal geometric language</p> <p>two-dimensional shapes, including circles, triangles, rectangles, and squares, as special rectangles, rhombuses, and hexagons; attributes using formal geometric language</p> <p>three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes), and triangular prisms</p>
<p>(Supporting TEKS)</p> <p>1.6B distinguish between attributes that define a two-dimensional or three-dimensional figure and attributes that do not define the shape.</p>	<p>Distinguish</p>	<p>Attributes that define 2 or 3 dimensional figures</p>



TEKS / Student Expectations	Skills	Concepts
<p>1.6C create two-dimensional figures, including circles, triangles, rectangles, and squares as special rectangles, rhombuses, and hexagons.</p> <p>1.6F compose two-dimensional shapes by joining two, three, or four figures to produces a target shapes in more than one way if possible</p> <p>1.6G partition two-dimensional figures into two and four fair shares or equal parts and describe the parts using words</p> <p>1.6H identify examples and non-examples of halves and fourths</p>	<p>Create</p> <p>Compose</p> <p>Partition</p> <p>identify</p>	<p>Two-dimensional figures</p> <p>Two-dimensional shapes by joining figures to create a target shape</p> <p>Two and four equal shares</p> <p>Halves and fourths</p>
<p>(Process Skill) TEKS</p> <p>1.1(A) apply mathematics to problems arising in everyday life, society, and the workplace</p> <p>1.1(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution</p> <p>1.1(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems</p> <p>1.1(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;</p> <p>1.1(E) create and use representations to organize, record, and communicate mathematical ideas</p> <p>1.1(F) analyze mathematical relationships to connect and communicate mathematical ideas</p> <p>1.1(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.</p>	<p>Apply</p> <p>Use</p> <p>Select</p> <p>Communicate</p> <p>Create</p> <p>Analyze</p> <p>Display Explain Justify</p>	<p>Mathematics to problems arising in everyday life, society, and the workplace</p> <p>Problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution</p> <p>Tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems</p> <p>Mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;</p> <p>Representations to organize, record, and communicate mathematical ideas</p> <p>Mathematical relationships to connect and communicate mathematical ideas</p> <p>Mathematical ideas and arguments using precise mathematical language in written or oral communication.</p>



Tier I Instructional Strategies – Classroom Instruction for All Students

- **Pearson Envision 12-13**

This unit is often a student favorite. Tap into their engagement and run with it! Don't save the STEAM activities (tangrams, art projects, wooden blocks, for Rather than using hands on manipulatives at the endo of the unit, or on a Friday as a one-time lesson. Introduce them at the beginning of the unit, model the expectations, and make them available during Guided Math rotations or for Early Finishers all year long. Provide multiple opportunities for independent practice, and allow time for students to present their work to the class. When presenting, prompt students to elaborate on the design process.

Did any problems occur along the way?

How did you solve them?

Did you need to make an adjustment to your original design? Why or why not? What worked?

What didn't work?

How can this design be used in the real-world?

Can this design solve any problems in your everyday life?

Can you use what you did today to build something else?

When appropriate, require students to write responses to question stems prior to presenting.

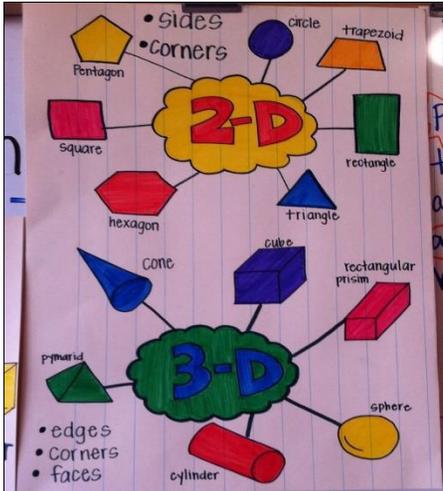
Geometry 1.6 A-F

Two-Dimensional Shapes

Many students will feel comfortable identifying 2D shapes. Encourage students to describe shape attributes and other geometric academic vocabulary. Many students will enjoy the opportunity to express themselves through art. Show students real life pictures of artistic expression of geometry. Example: Mosaic tiles, Picasso, architecture, nature (honeycombs, snowflakes, etc). Students will also enjoy creating their own art. This can be unstructured or structured.

- • Unstructured- After students complete their work, allow time to celebrate and share their creations. This can be through writing or oral presentations. Encourage students to use academic vocabulary, and provide sentence stems as necessary.
 - Show students pictures of art by Picasso, give them 2D shape tracers to create their own art in a similar style
 - Show students pictures of Mosaic tiles, give them pattern blocks to design their own patterns.
- Shape Monsters craft/writing
 - • Give students 2D Shape tracers and encourage them to create their own monsters.
 - • [Roll a Shape Monster](#)
 - • [Shape Monster Writing Reflection Template](#)
 - Glyphs
 - • [Shape Monster Glyph Craftivity](#)
 - • Teacher created Glyph with tracers (See image)





Both 2D and 3D

- Build with stem materials
- Foldable/Flap-book in journals (shape name, attributes, real-life example)
- [I have, Who Has?](#)
- [Reusable Headbands Instructions](#)
- [First Grade W.O.W. Unit with poems, anchor charts, and stations](#)
- [Posters](#)

Fractions 1.6 G H

Pre-Assessment

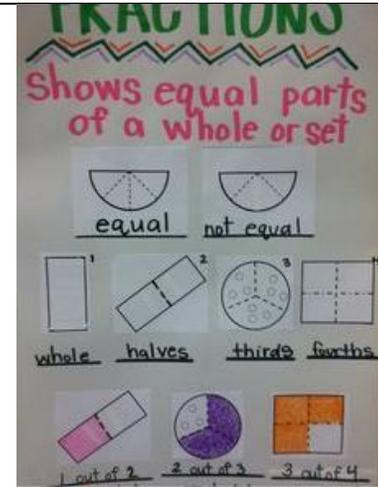
□ (See Resources) TEA grade 1 p.245

Misconceptions:

- Some students may think all fractional parts named "one-half" must be equal rather than understanding that the size of the half depends on the size of the whole.
- Some students may think partitioning a shape into any 2 parts means that these parts are halves rather than understanding that parts of a shape must be two equal parts in order to be halves. (see critical writing prompt number 4)
- Some students may not be able to apply the concept of fractions to other models (e.g. $\frac{1}{2}$ of a circle cut horizontally as well as vertically)

Question Stems

- How can a two-dimensional shape be partitioned in more than one way?
- What strategies can be used to determine if parts of a whole are equal or unequal?
- How can the resulting parts of a partitioned two-dimensional figure be described?
- How does identifying the whole affect describing the parts?
- What is a half?
- What is a fourth?
- How do you know?



Stations/Centers

Stations provide students the opportunity to practice skills that have introduced or taught in whole group or Guided Math lessons. students in stations allows them the opportunity to talk about their mathematical thinking, apply academic vocabulary, and hear how their about math. When students visit math centers, the teacher has the opportunity to meet with Guided Math groups for small group
Once stations are created and introduced, they can be spiraled back and utilized in any unit.

Fluency-

- [Roll and Solve Addition](#)

- Students roll a die to determine which math fact to solve. Laminate or place in a sheet protector for repeated use.

Recursive/Practice/Application-

- Geometry
 - 2D Shapes

- Envision Independent Practice Lesson Topic 12-3 p.631
- [Shape/Attribute Matching Station](#)
- [Interactive Notebook](#)
- [Shape Dominos Station](#)
- [Memory Game](#)
- 3D Shapes

- Envision Independent Practice Lesson Topic 12-7 p.655
- [3D Shape Attribute Matching Game](#)
- [3D Shape Graphic Organizer and Board Game](#)

- Fractions

- Envision Independent Practice Lesson Topic 13-2 p.687 and 13-4 p.699
- [Halves, Fourths, and Whole Color by Code](#)
- [Fractions Unit](#)
- Challenge activities. TEKs addressed are beyond first grade requirements

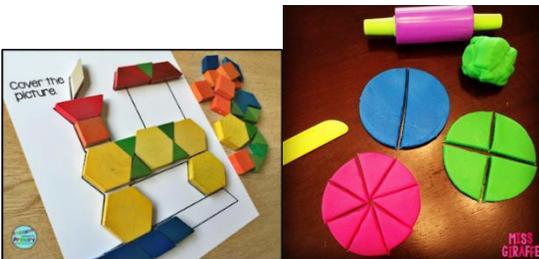
Hands On

- Geometry

- 2D Shapes
 - Geoboards
 - Scoop, sort, and graph pattern blocks
 - Tangrams (Balanced Literacy component- students write what shapes they used)
 - • [Tangrams \(1\)](#)
 - • [Tangrams \(2\)](#)
 - • [Tangrams- Seeing Shapes as wholes and parts](#) TEK 1.6F

- 3D Shapes

- [Create 3D Shapes with Playdough](#)



- Playdough Mats: partition playdough shapes into two and four fair shares

Vocabulary



Attribute
Classify
Irregular
Vertex(Vertexes)
Equal parts Whole
Fraction
Unequal parts
Compose
Sort
Side

Equal parts
Whole
Fraction
Unequal parts
Fourth
Half(halves)
Divide
Partition
Circles
Triangles
spheres

cones
cylinders
rectangular prisms (including cubes)
triangular prisms
Rectangles
Squares (special rectangles)
Rhombuses
hexagons

Sample STAAR or STAAR-Like Assessment Items

**The following sample questions are one of many ways to assess the TEKS student expectation.*

[Unit Assessment](#) (click link to download)

Resources

**The suggested resources are one of many ways to address the TEKS student expectation.*

TEA Stations and Small Group Activities

1. [Grade 1](#)
2. [Kindergarten](#)

[TEA vertical alignment chart](#)

Literature

Grandfather Tang's Story: A Tale Told with Tangrams. Ann Tompert
When a Line Bends...A Shape Begins. Rhonda Gowler
Shapes That Roll. Karen Nage
The Greedy Triangle. Marilyn Burns
The Perfect Square. Michael Hall
Circle, Square, Moose. Kelly Bingham
Shape Up! Fun with Triangles and Other Polygons. David A. Adler
Skippyjon Jones Shape Up. Judy Schachner
Captain Invincible and the Space Shapes. Stuart J. M



Equal Shmequal. Virginia Kroll
The Doorbell Rang. Pat Hutchins