## Make Learning Fun!

Original song and video to introduce and
reinforce the skill.


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## Shapes

Geometry can be one of the most exciting and interesting units of the year for our first graders. Geometry, naturally, is tactile and visual. Both of these elements are strong strategies to reinforce and strengthen student learning. Understanding the attributes of shapes, both $2 D$ and $3 D$, is essential in the identification process and the sorting process. In order to properly identify, understand, create, utilize, and compare shapes, students need to know the attributes of a shape.

This unit will begin by focusing on $2 D$ shapes. Students will be taught the
defining attributes of circles, squares, rectangles, triangles, trapezoids, and
hexagons. This unit is exactly what your class set of tangrams has been waiting for!
Students will work on identifying these 2D shapes by their attributes. They will then get the chance to create them out of pretzel sticks! After 2D, students will progress into understanding the attributes of 3D shapes. The focus is placed on cylinders, cubes, spheres, rectangular prisms, and cones. Students will work on identifying these shapes and sorting them by their attributes. They will then have the opportunity to build them out of mini marshmallows and toothpicks.

This is a very fun and engaging unit for first graders. Students will learn about 2D and 3D shapes. They will learn the attributes of each shape and how to pproperly identify and sort shapes by these attributes.

## Shapes

Day I: Introduce 2D shapes
*You will need tangrams/pattern blocks for this unit. If you do not have a set, there are print out shapes provided that you can used to make a class set.*
Mini Lesson: Introduce the purpose of the lesson today: to remind ourselves of 2D shapes.

- Watch the Shapes Song.
- Introduce the unit vocabulary.
- Explain that today students will be refreshing their memory of 2D shapes.
- Ask students if there are any shapes that they remember. Call on students that want to share and ask them to describe the shape they are thinking of.
- Hold up each shape as a tangram or a printed cutout: Circle, Triangle, Square, Rectangle, Trapezoid, and Hexagon. Mention that we also have semi-circles (show vocab card or cutout of it).

Guided Practice: Students will be using tangrams or shape cut-outs to sort the shapes correctly. Students will work in pairs for this activity. Pass out a "Shape Sort Board" to each pair. Pass out a small pile of tangrams or cut-out shapes to each pair. Have students work together to sort their shapes correctly. *Optional Shaving Cream 2D Shapes activity instead.

Independent Practice: Students complete the "Count them up" worksheet.

Day 2: Attributes of 2D shapes

Mini Lesson: Introduce the purpose of the lesson today: to identify $2 D$ shapes by their attributes.

- Watch and sing the Shapes Song.
- Review the unit vocabulary.
- Introduce the "Attributes" Anchor Chart. Go over each attribute and an example of its meaning.
- Explain how these attributes help us identify shapes.
- Show students the "2D Shape Attributes" Chart.
- Hold up a square tangram or cut-out. Model checking each attribute of the square and Y filling in its row in the chart.

Guided Practice: As a class, finish completing the entire chart for each shape.

Independent Practice: Students complete the mini-book.
Day 3: Attributes of $2 D$ shapes
Mini Lesson: Introduce the purpose of the lesson today: to identify and sort $2 D$ shapes by their attributes.

- Review the unit vocabulary cards and the Shapes Song.
- Review the "Attributes" Anchor Chart and the "2D Shape Attributes Chart."
- Explain to students that today they will be sorting shapes based on their attributes.
- Model sorting I shape on the "Vertices Sort Model Practice" poster. You can either glue it or tape it up. Narrate as you go through how to sort the shape and your reasoning. You will just be sorting for vertices for this one.

Guided Practice: As a class, finish sorting the rest of the shapes onto the "Vertices Sort Model Practice" Poster. Have students come up and glue or tape the shapes up themselves.

Independent Practice: Students will work on the "Shape Sides" activity. They will need the activity worksheet, as well as tangrams to trace. For the activity, students will trace or draw shapes into the correct boxes on their worksheets.

Day 4: Sorting 2D Shapes
Mini Lesson: Introduce the purpose of the lesson today: to sort $2 D$ shapes by their attributes.

- Review the unit vocabulary cards and the Shapes Song.
- Review the "Attributes" Anchor Chart and the "2D Shape Attributes Chart."
- Explain to students that today they get to make $2 D$ shapes and then play a fun game!
- Explain the "Pretzel Shapes" activity to your students. Model how to make at least one shape out of pretzel sticks.

Guided Practice: Students will use their pretzel sticks to build each shape on their shape mat.

Day 4 continued ...
Independent Practice: Students will work in pairs or small groups to play the "2D Sort Game."
Day 5: 3D Shapes

Mini Lesson: Introduce the purpose of the lesson today: to learn about 3D shapes and their names.

- Review the unit vocabulary cards and the Shapes Song.
- Using 3D models or cut-ou'ts of the 3D shapes, model going through each 3D shape and explaining its name.

Guided Practice: As a class, have students play the "3D Shape Partners" activity. Each student will be given a card with a 3D shape on it. They will then be instructed to go around the classroom and find the student with the matching 3D shape. Once everyone is matched up, call on each group to stand up and share the name of the 3D shape that they have.

Independent Practice: Students complete the "3D Shape Cut and Paste" worksheet.

Day 6: Attributes of 3D Shapes

Mini Lesson: Introduce the purpose of the lesson today: to identify 3D shapes by their attributes.

- Review the unit vocabulary cards and the Shapes Song.
- Review the "Attributes" Anchor Chart.
- Introduce the "3D Shape Attributes Chart."
- As you did with the 2D shapes, model charting all the attributes of the sphere. Narrate as you are filling in each attribute and how you identified it.

Guided Practice: As a class, finish completing the chart for each 3D shape.

Independent Practice: Students complete the "3D Shape Attributes" worksheet.

Mini Lesson: Introduce the purpose of the lesson today: to identify 3D shapes by their attributes.

- Review the unit vocabulary cards and the Shapes Song.
- Review the "Attributes" Anchor Chart and the "3D Shape Attributes Chart."
- Explain to students the "Marshmallow 3D Shapes" activity. Model building at least one 3D shape out of mini marshmallows and toothpicks. Model how to safely insert the toothpicks into the marshmallows and connect them.

Guided Practice: Students will complete the "Marshmallow 3D Shapes" activity using their mini marshmallows and toothpicks. They will be building each 3D Shape.

Independent Practice: Students complete the "3D Shape Attribute Analysis" worksheet. They will be using the 3D marshmallow shapes they made to help them answer the questions on the worksheet.

Day 8: Review 2D and 3D shapes

Mini Lesson: Introduce the purpose of the lesson today: review the attributes and identifying factors of 2D and 3D shapes.

- Review the unit vocabulary cards and the Shapes Song.
- Review the "Attributes" Anchor Chart, the "2D Shape Attributes Chart," and the "3D Shape Attributes Chart."
- Explain the "Missing Shapes Investigators" activity.

Guided Practice: Students work in small groups on the "Missing Shapes Investigators" activity.

Independent Practice: Students complete the problem solver.

Day 9: 2D and 3D shapes

Mini Lesson: Introduce the purpose of the lesson today: to identify 2D and 3D shapes by their attributes.

- Review the unit vocabulary cards and the Shapes Song.
- Review the "Attributes" Anchor Chart, the "2D Shape Attributes Chart," and the "3D Shape Attributes Chart."

Guided Practice: Optional to have students play the "2D Sort Game" as a review.

Independent Practice: 2D and 3D Shapes Quiz






## $\stackrel{y}{2}$ <br> Shape Song

This is the shape song, come with me! The shapes are 2D and 3D.


When straight lines or curved lines meet, they form closed shapes for our friends,
and closed shapes have no openings, they start right where they end.

This is the shape song, come with me!
When shapes are flat, they're called 2D.

The lines that form a shape are called the sides, and when 2 meet, they form spaces called angles and points called vertices.

This is the shape song, come with me! When shapes are flat, they're called 2D.


Let's name some 2D shapes! We have rectangle, circle, square and trapezoid and triangle and hexagon in there.

This is the shape song, come with me! When shapes are flat, they're called 2D.


Rectangles have four angles, four vertices, and four sides, and circles don't have any 'cause they're made from a curved line.

This is the shape song, come with me!
When shapes are flat, they're called 2D.


Triangles have 3 sides, 3 angles, and 3 vertices.
And squares have 4 sides, 4 angles, and have 4 vertices.

This is the shape song, come with me!
When shapes are flat, they're called 2D.

A trapezoid has 4 angles, 4 sides, 4 vertices.
A hexagon has 6 angles, 6 sides, 6 vertices.

This is the shape song, come with me!
When shapes are solid, they're 3D.

3D shapes have flat surfaces called faces, they're so neat!
And edges are the lines formed at the places where they meet.

This is the shape song, come with me!
When shapes are solid, they're 3D.

Let's name some 3D shapes! There's cylinder, sphere, cube, and cone.

And rectangular prism is so long it stands alone.

This is the shape song, come with me!
When shapes are solid, they're 3D.


Cylinders have 2 faces, 2 edges, no vertices.
And that's because they're curved and shaped like the trunk of a tree.

This is the shape song, come with me!
When shapes are solid, they're 3D.

The rectangular prism and the cube are really great! Both shapes have 6 faces, 12 edges, vertices are 8.

This is the shape song, come with me! When shapes are solid, they're 3D.


A cone has I face, I edge, and it has just I vertex.
A sphere does not have edges and does not have a vertex.

This is the shape song, come with me! When shapes are solid, they're 3D.

The sphere, the cone and cylinder have something in common.
The only 3D shapes that have curved surfaces on them.

This is the shape song, now we're through.
And I had so much fun with you!

Now we know all about our shapes, both 2D and 3D.
And I'm so glad that you made it through the shape song with me.


Name:
Date:

## Count Them Up

Directions: Identify the shapes. Count how many of each shape you find and write that number next to the shape below.


## Attributes

We can use the attributes of a shape to help us identify it and compare it!
\# of Vertices

\# of Sides


3

## Faces

Face


Open or Closed?
Straight or Curved?


Open
Closed


Straight


Curved

## 2D Shape Attributes Chart

| Shape | Vertices | Sides | Faces | Open or <br> Closed? | Straight <br> or <br> Curved? |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\square$ |  |  |  |  |  |
|  |  |  |  |  |  |

# 2D STopoer@ <br> ○Ø〇○○て@ 

Identify 2D shapes by their attributes


## What are a shape's attributes?

\# of Vertices

\# of Sides


3

## Faces

## Face or Closed?



Open or Closed?
Straight or Curved?


Open


Closed


Straight


Curved

A shape's attributes can help you identify 2D shapes.


## Compare and contrast a square and a circle. How are they similar? How are they-different?




## Pretzel Shape Activity

The pretzel shape activity is a great way to get your students to activate their brains through tactile learning. They will be building shapes, using what they know about the shapes' attributes to help them construct the shapes correctly.

## Directions:

- You will need pretzel sticks for this activity.
- Pass out a handful of pretzel sticks and the pretzel stick shapes worksheet to each student.
- Be clear with expectations; express that students should not eat the sticks until they are finished and have had their shapes checked.
- Instruct students to use the pretzel sticks to create the shapes they see on their worksheets.
- You can also make the choice here to have students make the shapes without the help of the worksheet; this would be a good challenge. However, the worksheet is a great scaffolding resource.



## 2D Sort Game

Directions:
I. Print all the shapes and headers.
2. Cut out and laminate.
3. Put all the shapes and headers into a large Ziploc bag.
4. Students can play this game in pairs, individually, or in small groups.
5. Instruct students that they should pick one set of headers to use: shape name, vertices, or sides. Students sort the shapes" correctly.

## 2D Sort Game

## CIRCLE



Directions: Pick how you want to sort the shapes. Choose name, vertices, or sides. Then sort all the shapes correctly.



## 3D Shape Partners Activity

Directions:

- Print off and cut out enough 3D shape cards so every student has one.
- Pass out a card to each student.
- When you say go, have students look for the student that has their matching 3D shape.
- Once students have matched up, have them return to sitting with their partner.
- Have each pair stand up and share their 3D shape can correctly identify it.

We have a sphere!



## 3D Shape Attributes Chart

| Shape | Vertices | Edges |  <br> Face | Open or <br> Closed? | Straight <br> or <br> Curved? |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |

$\qquad$

## 3D Shape Attributes

Directions: Answer the questions about each 3D shape.


I am a $\qquad$
2015 Label my faces and my edges. Face Shape: $\qquad$ \# of vertices? _------- \# of edges? -------- \# of faces?

I am a $\qquad$
Label my faces and my edges.
Face Shape: $\qquad$
\# of vertices?
\# of edges?
\# of faces?

I am a
Label my faces and my edges.
Face Shape: $\qquad$
\# of vertices?
\# of edges? $\qquad$ \# of faces?


I am a $\qquad$
Label my faces and my edges. Face Shape: $\qquad$
\# of vertices? \# of edges? $\qquad$ \# of faces?

I am a $\qquad$
Label my faces and my edges.
Face Shape:


# Marshmallow 3D Shape Activity 

The marshmallow 3D shape activity is another great, tactile way to help students learn 3D shapes. Students will use mini marshmallows and toothpicks to create 3D shapes. They should create a rectangular prism and a cube. Students are not required to create a cone, but if any of them feel up to the challenge, they can attempt it.

Directions:

- You will need mini marshmallows and toothpicks.
- Pass out the mini marshmallows and toothpicks to students at their desks.
- Students build the 3D shapes using these materials.
- Circulate around to check student work. If you notice some students have success on a shape, ask them to share their method of building to help other students.


## 3D Shape Attributes Analysis

Directions: Build the following shape with toothpicks and marshmallows. Fill in the chart.

| Shape <br> Picture | Shape Name | Vertices | Edges |  <br> Face Shape |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |

Name: $\qquad$ Date:

## 3D Shape Attributes Analysis



Directions: Build the following shape with toothpicks and marshmallows. Fill in the chart.


## Missing Shapes Investigations Activity

Directions:

- Students will work in small groups. Plan ahead by dividing students into small groups.
- Print off enough copies of the activity so each group has one full set.
- Cut out the set.
- Cut out the teacher-given shape cards.
- Put each task card in a small envelope with the corresponding number on the front.
- Put all the small envelopes in a large manila envelope.
- When it is time to play, pass out a large envelope to each group. Inform the groups that they will be working together to solve the mystery card inside each envelope. Instruct the students to work in numerical order.
- As students solve the card, they will bring the completed one up to you. If they correctly identify the shape, give them the small shape card. They glue that shape card onto their checklist paper.
- Once a group has solved all their mysteries and "found" all their missing shapes, they are finished.



## MISSING SHAPE \#1

I have 4 equal sides. I have 4 square vertices. I am a $2 D$
shape.

## MISSING SHAPE *3

I have 3 sides. I have 3 vertices. I have straight edges.
What am I?


## MISSING SHAPE ** 5

I have 6 faces and my edges are straight. I have 8 square vertices. My faces are not all the same shape.

## MISSING SHAPE \#7

I have 0 edges and 0 vertices. I am a $3 D$ shape. What am I?


## MISSING SHAPE \#2

I have 6 sides and 6 vertices.
All of my sides are the same length. What am I?

## MISSING SHAPE $\neq 4$

I have 4 sides and 4 vertices.
Two of my sides are parallel and my other two are not. I am a 2 D shape. What am I?


## MISSING SHAPE \#6

I have 2 circular faces. I have a curved surface. I can roll. I am a 3 D shape.
5 What am I?

## MISSING SHAPE \#8

I have I vertex and I circular face. I am a 3D shape.

What am I?


Name: Date: $\qquad$

## Problem Solver

Solve the word problems. Write the name of the shape and draw the shape in the box below.
I. Mehek was cutting snowflakes out of paper. The snowflake shape she cut has four vertices and four sides. Two of the sides are parallel and the other two are not. What shape is Mehek's snowflake? Draw it below.
2. Antonio made a gift for his friend. It is $3 D$ and has six faces. The shape also has eight vertices. Two of the faces are squares. Four of the faces are rectangles. What is the shape of Antonio's gift? Draw it below.
$\qquad$

## Geometry Quiz

Draw the shapes:

I. Triangle
५. Circle the square:

## $\square$

 - [ ] [!]$\square$

7. How many vertices does this shape have? $\qquad$

6. Number the sides. How many sides are there? $\qquad$ ides



What shape is this? Read the description and write the name of the 3D shape:
8. I have 6 faces. They are all the same shape. I have 8 vertices. All of my edges are straight. What shape am I? $\qquad$
9. I have 2 circular faces. I have no vertices and my edges are curved. What shape am I?
10. I have no edges or vertices. I am curved. I am 3D. What shape am I?

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