

# COMBINE, SPLIT TWO-DIMENSIONAL SHAPES.

## INVESTIGATIONS OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE INVESTIGATIONS THAT STUDENTS MAY ENGAGE IN TO DEEPEN THEIR RELATIONAL UNDERSTANDING. INVESTIGATIONS WITH INSTRUCTIONS TO STUDENTS FOLLOW ON SUBSEQUENT PAGES.

- Children select two shapes. They use a ruler to measure and describe the sides of each shape. They use angle testers to test and describe the vertices of their two shapes. They name their two shapes. They combine the shapes to make a new shape. They draw their new shape. They use a ruler to measure and describe the sides of their new shape. They use angle testers to test and describe the vertices of their new shape. They name their new shape. *Reflection: How can we combine shapes to create new shapes?*
- Children select one shape. They use a ruler to measure and describe the sides of their shape. They use angle testers to test and describe the vertices of their shape. They name their shape. They split the shape in 2 parts to make 2 new shapes. They draw their 2 new shapes. They use a ruler to measure and describe the sides of their 2 new shapes. They use angle testers to test and describe the vertices of their 2 new shapes. They name their 2 new shapes. *Reflection: How can we split shapes to create new shapes?*
- Children select three or more shapes. They use a ruler to measure and describe the sides of their shapes. They use angle testers to test and describe the vertices of their shapes. They name their shapes. They combine the shapes to make a new shape. They draw their new shape. They use a ruler to measure and describe the sides of their new shape. They use angle testers to test and describe the vertices of their new shape. They name their new shape. *Reflection: How can we combine shapes to create new shapes?*
- Children select one shape. They use a ruler to measure and describe the sides of their shape. They use angle testers to test and describe the vertices of their shape. They name their shape. They split the shape into 3 parts to make 3 new shapes. They draw their 3 new shapes. They use a ruler to measure and describe the sides of their 3 new shapes. They use angle testers to test and describe the vertices of their 3 new shapes. They name their 3 new shapes. *Reflection: How can we split shapes to create new shapes?*

- Children select a shape, for example, a square. They try to create a square by combining other shapes, for example,

triangles,



rectangles,

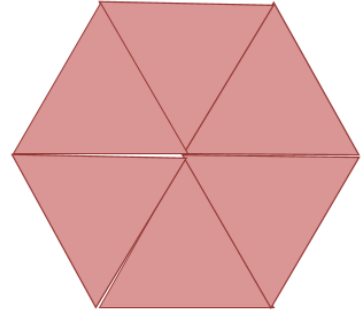
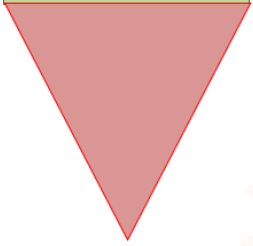
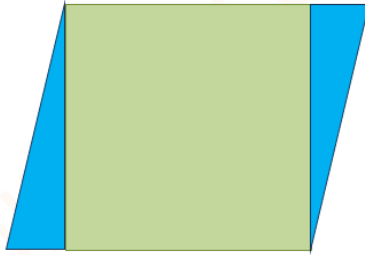
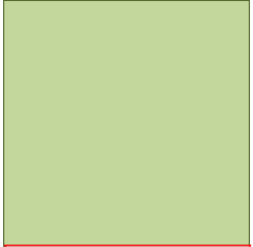
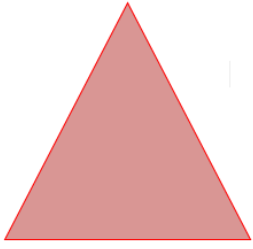


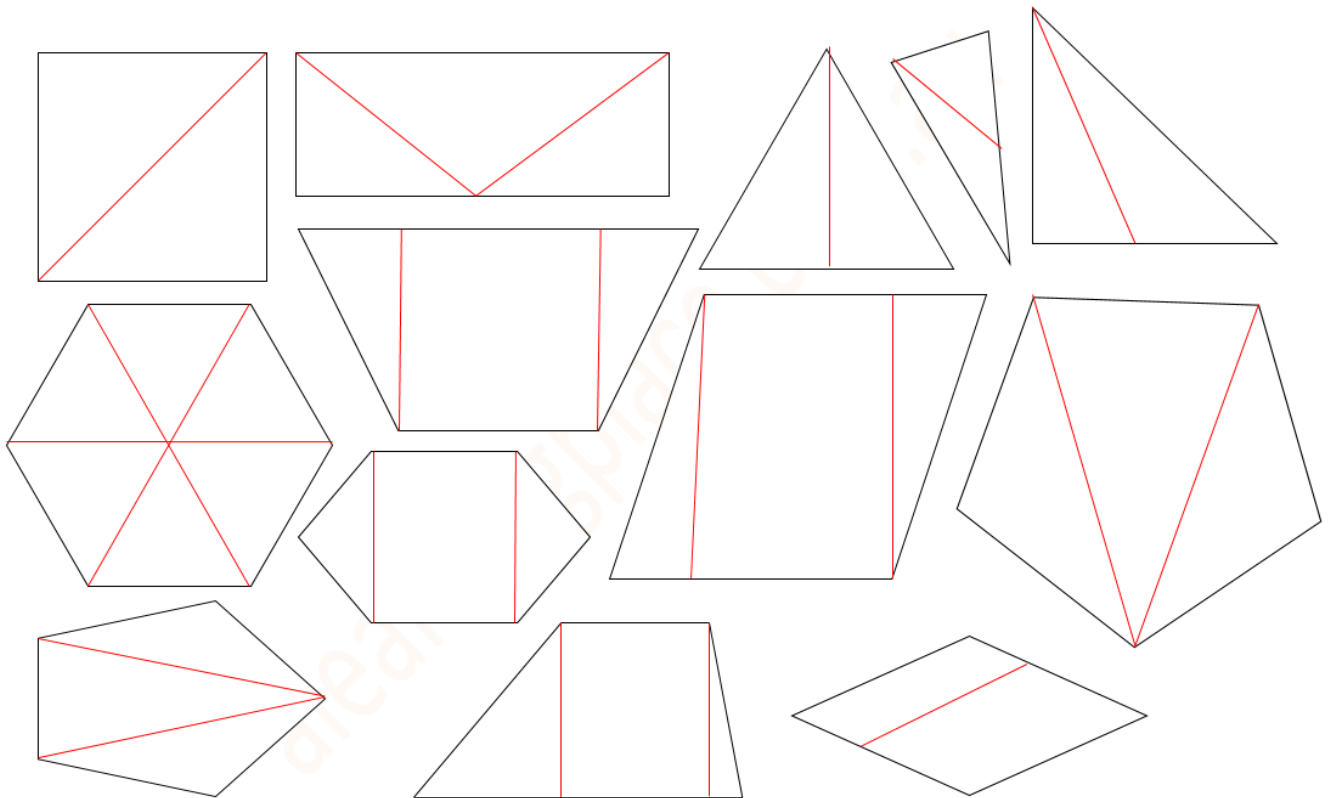
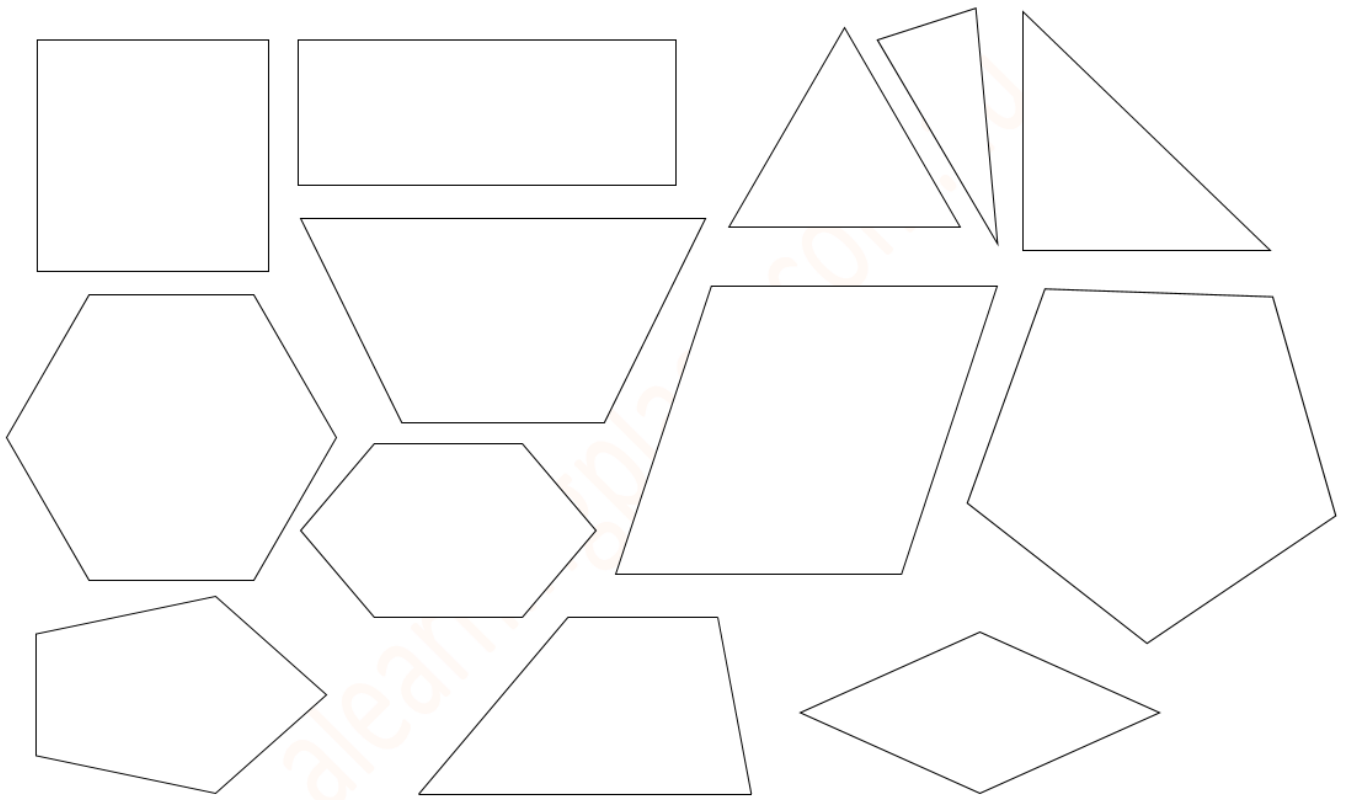
squares

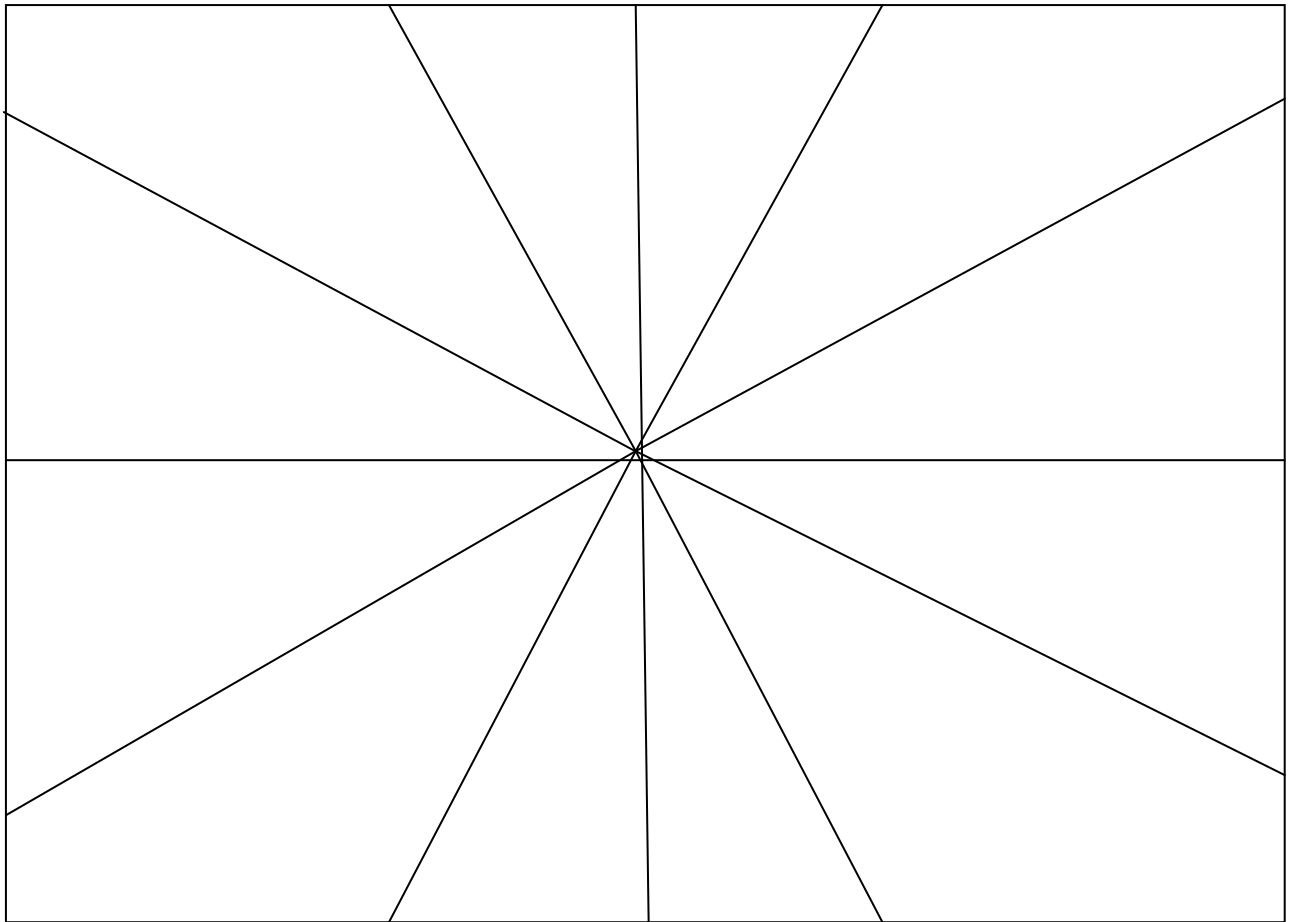
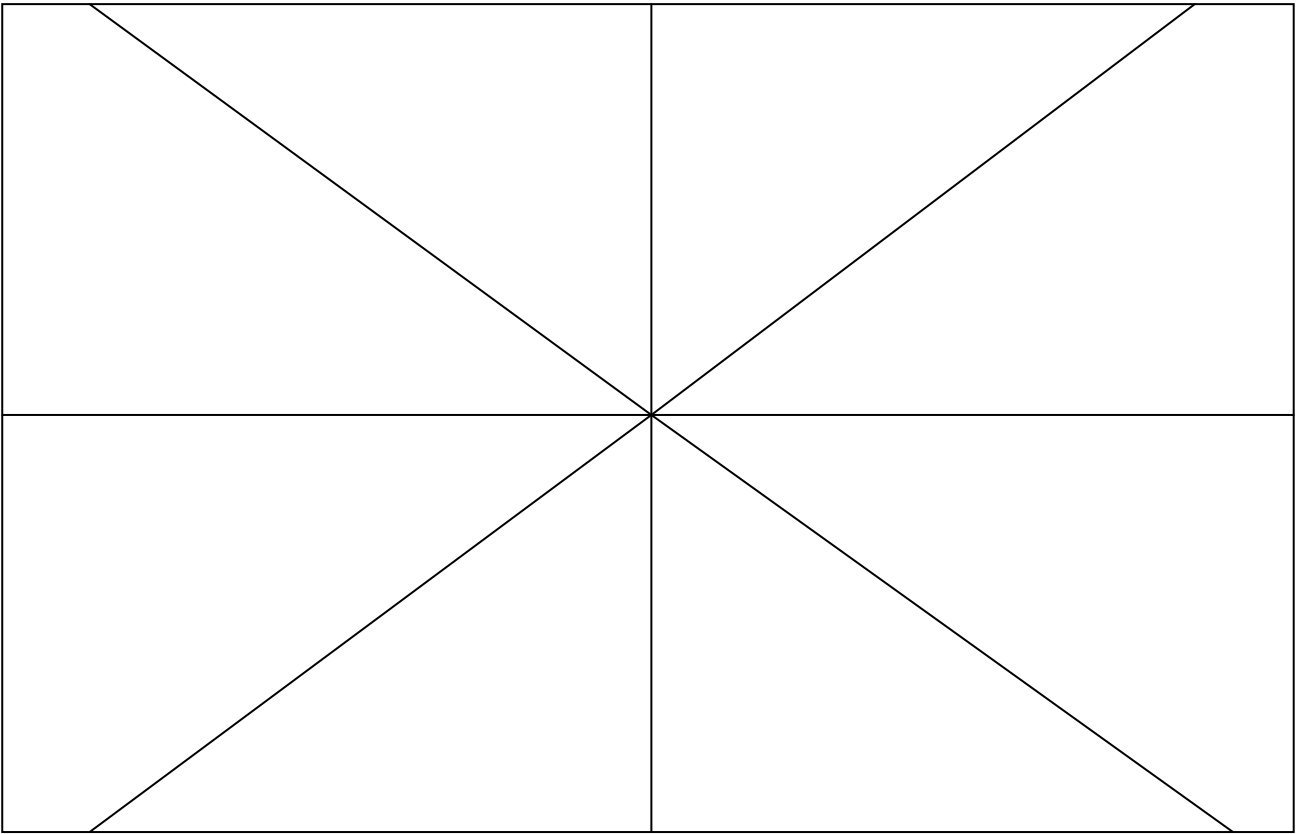


*Reflection: How can we combine shapes to create new shapes?*

- In pairs, each child combines 2 shapes to create a new shape. Each child traces around the new shape. Children swap shapes. Children identify which 2 shapes were used to create the new shape. *Reflection: How can we combine shapes to create new shapes?*







# Combine, Split Two-dimensional Shapes.

Select two shapes.

Use a ruler to measure and describe the sides of each shape.

Use angle testers to test and describe the vertices of the two shapes.

Name the two shapes.

Combine the shapes to make a new shape.

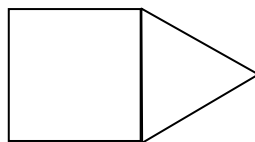
Draw the new shape.

Use a ruler to measure and describe the sides of the new shape.

Use angle testers to test and describe the vertices of the new shape.

Name the new shape.

For example, combine a square and regular triangle to create an irregular pentagon with 5 equal sides and 5 unequal vertices.



Reflection: How can we combine shapes to create new shapes?

Hint: Change the shape, and allow children to solve again!

# Combine, Split Two-dimensional Shapes.

Select three shapes.

Use a ruler to measure and describe the sides of the three shapes.

Use angle testers to test and describe the vertices of the three shapes.

Name the three shapes.

Combine the shapes to make a new shape.

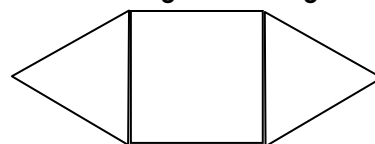
Draw the new shape.

Use a ruler to measure and describe the sides of the new shape.

Use angle testers to test and describe the vertices of the new shape.

Name the new shape.

For example, combine a square and 2 regular triangles to create an irregular hexagon with 6 equal sides and 6 unequal vertices.



Reflection: How can we combine shapes to create new shapes?

# Combine, Split Two-dimensional Shapes.

Select one shape.

Use a ruler to measure and describe the sides of the shape.

Use angle testers to test and describe the vertices of the shape.

Name the shape.

Split the shape in 2 parts to create 2 new shapes.

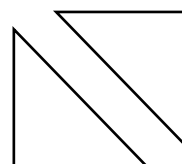
Draw each new shape.

Use a ruler to measure and describe the sides of each new shape.

Use angle testers to test and describe the vertices of each new shape.

Name each new shape.

For example, split a square to create 2 irregular triangles.



Reflection: How can we split shapes to create new shapes?

# Combine, Split Two-dimensional Shapes.

Select one shape.

Use a ruler to measure and describe the sides of the shape.

Use angle testers to test and describe the vertices of the shape.

Name the shape.

Split the shape in 3 parts to create 3 new shapes.

Draw the 3 new shapes.

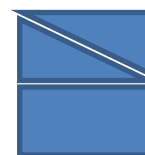
Use a ruler to measure and describe the sides of the 3 new shapes.

Use angle testers to test and describe the vertices of the 3 new shapes.

Name the 3 new shapes.

For example, split a square to create 2 irregular triangles and a rectangle.

Reflection: How can we split shapes to create new shapes?





# Combine, Split Two-dimensional Shapes.

Select one shape.

Describe the sides and vertices of the shape.

Name the shape.

Try to create the shape by combining other shapes, for example, select a square and try to create a square by combining

triangles,



rectangles,



squares



Reflection: How can we combine shapes to create new shapes?

# Combine, Split Two-dimensional Shapes.

Sit with a friend.

Each of you secretly select 2 shapes.

Each of you combine your 2 shapes to create a new shape.

Each of you trace around the new shape.

Swap shapes.

Identify which 2 shapes were used to create the new shape.

Reflection: How can we combine shapes to create new shapes?