

# Building Space Shuttles

## Target Standard

### Geometry

- Recognize, name, build, draw, compare and sort two-and three-dimensional shapes
- Describe attributes and parts of two-and three-dimensional shapes
- Investigate and predict the results of putting together and taking apart two-and three-dimensional shapes
- Recognize and apply sides, flips, and turns
- Recognize geometric shapes and structures in the environment and specify their location

### Prior Knowledge

- K: recognize and identify 2D shapes, awareness of 3D shapes
- 1<sup>st</sup> grade: recognize and apply slides, flips, and turns of 2D shapes
- 2<sup>nd</sup> grade: properties of 3D shapes

## Teaching Plan

### Implementation

#### Kindergarten

Display and identify a variety of 2D and 3D shapes with students. Describe the different attributes of each shape. Show pictures of the **NASA Space Shuttle** and discuss what it does (one image provided). *Note® You may wish to use the NASA Space Shuttle image provided as a template or an example before they begin the activity.* Have students build their own space shuttles using the **Shapes** provided and/or a variety of shape blocks and unit blocks (include 3D geometric blocks). When students have finished building their shuttles, ask them to describe them using geometric terms and attributes.

Teacher Questions:

1. How many shapes did you use to build your space shuttle?
2. What different shapes did you use and why?
3. Show me a triangle, a square, a cube, etc.

#### 1<sup>st</sup> Grade

Show the students the enclosed picture of a space shuttle. Review 2D and 3D shapes with models. Discuss what happens to the shapes when they are turned, flipped, or moved (slid). Give the students the **NASA Space Shuttle** picture and **Shapes**. Ask students to cut out the paper shapes. Have them place the shapes on the NASA Space Shuttle drawing filling in the shape. Next, have them create their own 2D space shuttle by gluing the paper shapes on a separate piece of paper. The following day, provide the students with 3D recycled materials (such as toilet paper rolls, Kleenex boxes, paper cones, etc.) and discuss how they could build their own space shuttles using these materials. Have students make their own space shuttles.

Teacher Questions:

1. When you were using the two-dimensional paper shapes what happened when you turned, flipped or moved them on your paper? Did it change the name of the shape?
2. What shapes did you use? Describe their attributes.
3. How many different kinds of shapes did you use?

4. Why did you choose a (identify a particular shape.....) to build part of your shuttle?

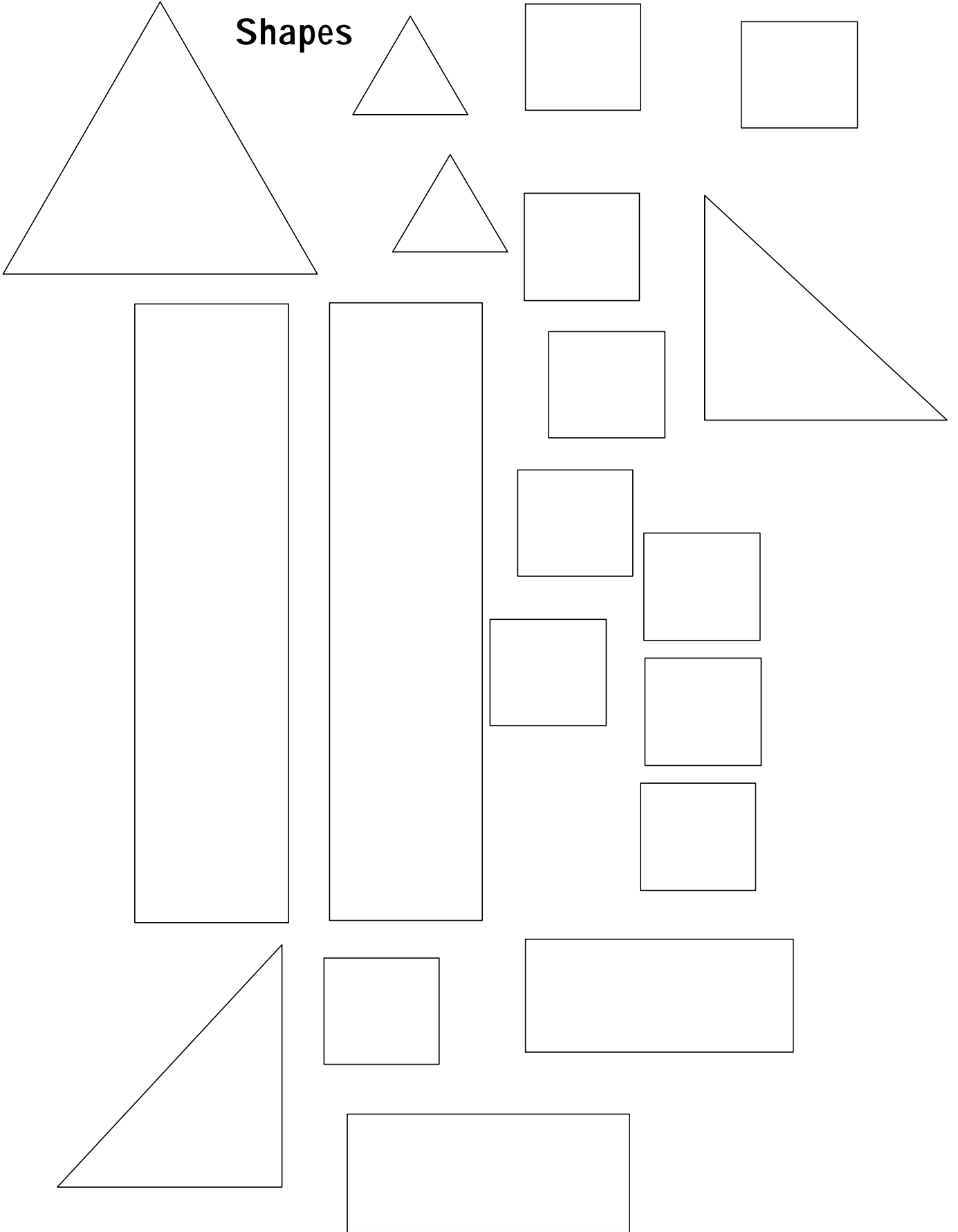
## **2<sup>nd</sup> Grade**

Discuss and model how 2D paper shapes can be changed into 3D shapes (for example, square into a cube, rectangle into a cylinder). Discuss the difference between 2D and 3D shapes. Students should experiment with making their own 3D shapes to construct their own space shuttle model.

Teacher Questions;

1. Identify the names of the three-dimensional shapes you used to build your space shuttle. Why did you choose these shapes?
2. What different three-dimensional shapes would you use in your next spaceship? Why?
3. Are you two-dimensional or three-dimensional? How do you know this?

# Shapes



# NASA Space Shuttle

