



Sphero Shape Maker

In this activity, students will engage in a unique Sphero Mini activity! Students will work on identifying shapes and using the Sphero Mini to trace each shape. Students or teachers will draw the shapes and then drive Sphero over each shape. This will lead into a discussion of different types of shapes as well as a great opportunity to practice shape recognition and Sphero Mini driving skills!

Materials

- Sphero Mini Robot
- Device to control Sphero Mini (iPad, cellphone, etc.)
- Sphero Play App
- Large paper to draw shapes
- Drawings tools
- Internet access

Student Objectives

- Students will learn and review types of shapes
- Students will be able to identify and trace shapes
- Students will collaborate with peers to drive the Sphero Mini
- Students will learn programming skills to drive their Sphero Mini robots

Teacher Technology Skills Needed

- Understanding of the Sphero Mini
- Understanding of Sphero Play App
- Skills for driving and controlling the Sphero Mini

Standards

NGSS Standards:

- NY-K.G.1- Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).
1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.
 2. Name shapes regardless of their orientation or overall size.
 3. Understand the difference between two-dimensional (lying in a plane, "flat") and three dimensional ("solid") shapes.

Procedure



1. Start the lesson by reviewing various shapes:
 - Squares
 - Circles
 - Triangles
 - Rectangles
 - Hexagons
 - Cubes
 - Cones
 - Cylinders
 - Spheres
2. Once students have an overview of shapes, they will be ready to take on their shape challenge. As the teacher, determine whether you will be drawing the shapes or students will be drawing the shapes. This will depend on age and skill set of students.
3. Once this has been determined, teacher or student will draw a shape using a drawing tool on a large piece of paper.
4. Next, students will use the Sphero Mini to trace the shape. This will be done by using the Sphero Play App.
5. Students will first identify the shape, then they will trace it using tilt or drive mode, and then they will think of an example of an object that is that shape.
6. This can continue for several shapes. During this process, students can take turns creating and tracing the shapes.
7. This lesson will conclude by having a group discussion about the shapes that were reviewed as well as key concepts and findings while using the Sphero Mini robot.

Extension Activity

- Task students with the challenge of designing a scene using different shapes. For example, students can design a scene of a house. They will draw different shapes that make up the parts of the house. Once the drawing is complete, they can identify and trace the shapes with the Sphero Mini.
- Challenge students by having them create a story to go along with the drawing and tracing. These stories can be written by hand or done digitally. Once they are created, students can share them out with their peers and have one another read them.