

GeoBoard and Area

6690

Introduction

In this activity, students find areas of figures which are displayed on a grid. They also use the Geoboard application to find areas of figures they draw.

Grades 6-8

NCTM Measurement Standards

- Apply appropriate techniques, tools, and formulas to determine measurements
- Develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles and develop strategies to find the area of more-complex shapes

Files/Materials Needed

Simple Square Area.act, *L-Shape Area.act*, *Square Area.act*, *Rectangle Area.act*, *House Area.act*, *Triangle Area.act*, *geoboard.73k*

PART 1 INTRODUCTION TO AREA

1

- Launch TI-Navigator™ on the computer and if needed, use the App Transfer tool to transfer the Geoboard app to students.
- Start the session.
- Have each student log into NavNet on their calculator.

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- Load the activity settings file *Simple Square Area.act* into Activity center.
- Discuss the meaning of area. Area is often defined as the number of square units a figure covers. Ask students for the area of the square shown and use **Quick Poll** (with *Open Response*) to collect their answers.
- Repeat the exercise with the activity settings file *L-Shape Area.act*.
- One by one, repeat with the activity settings files *Square Area.act*, *Rectangle Area.act*, *House Area.act*, and *Triangle Area.act*. Discuss which answers are reasonable and why. Encourage students to explain the methods they used to find their answers.

PART 2 SELF EXPLORATION

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- Have students exit out of NavNet and open the Geoboard app.
- Tell students to draw their own figure, guess the area, and then have the calculator find the area. Give students some parameters for creating figures (e.g. have to be regular polygons, have to have less than 5 sides, etc.) so you can manage the ability level of the class. Let students practice with several drawings.

PART 3 CHALLENGE THE CLASS

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- Prompt individual students to challenge the class by drawing a figure for which they think other students will have difficulty in finding the area.
- Take a screen capture of that student's device, making sure they do not have the area revealed on their screen.
- Right click on the screen capture and save it to the computer desktop.
- Load the saved image into Activity Center as a background image and have a contest to see which student can come closest to the actual area of the figure.
- Have the student who drew the image find the actual area and use **Quick Poll** to collect the other students' guesses.