THE EDUCATION FUND

FOR EXCELLENCE IN MIAMI-DADE PUBLIC SCHOOLS

2020-2021

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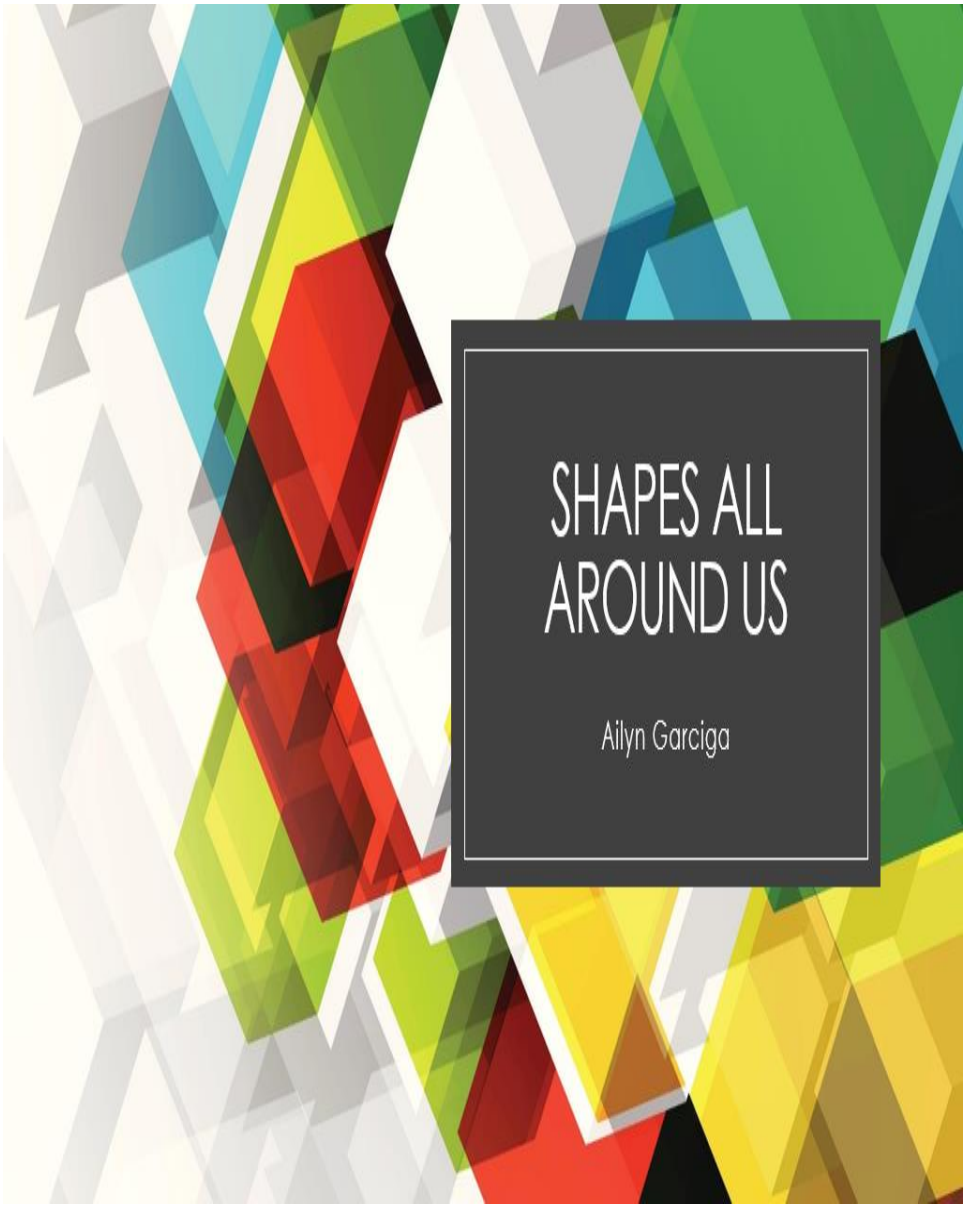
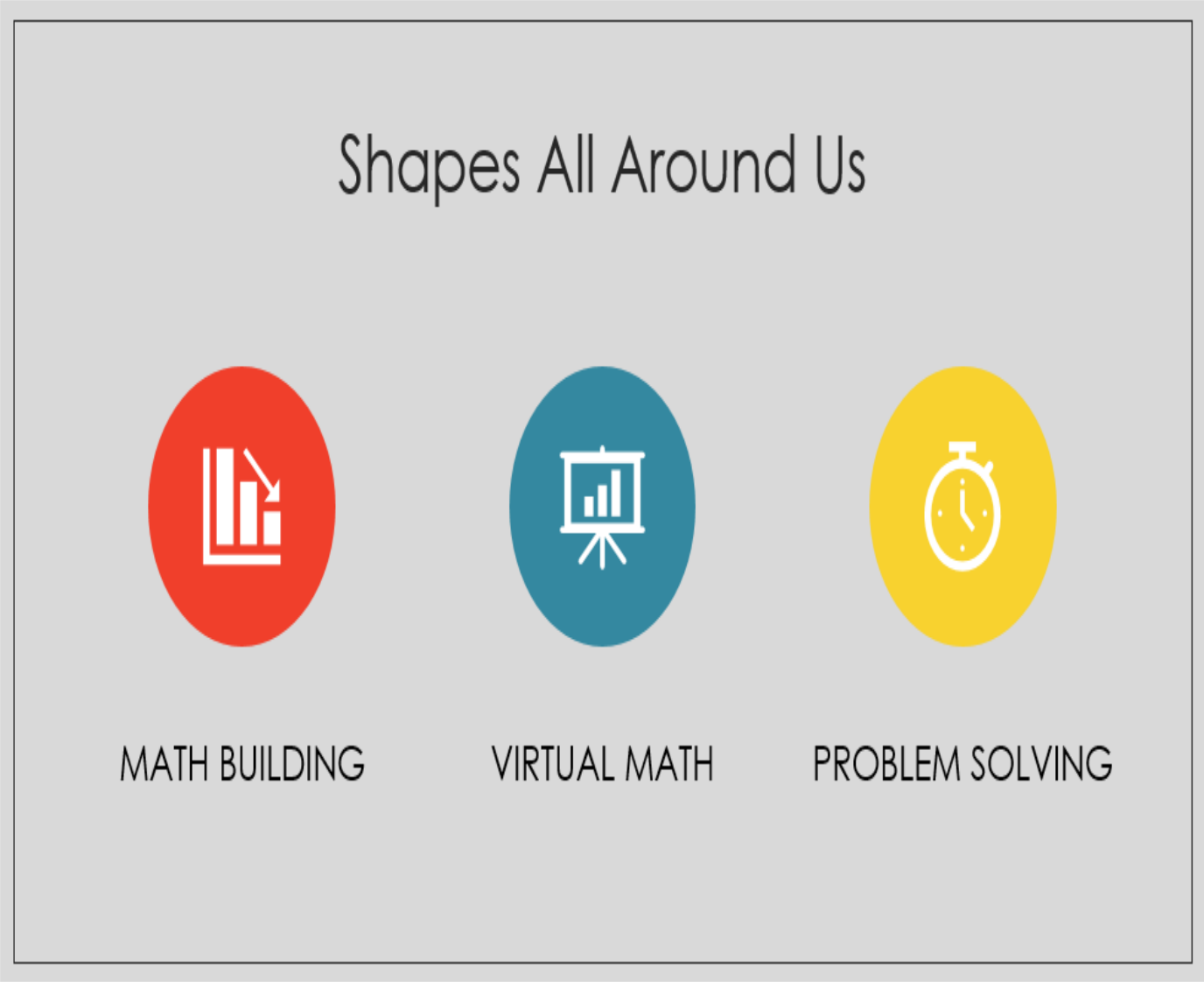
Geometry 3-D Shapes



Contact Information

Ailyn Garciga - Email: garciga@gmail.com

Dr.Toni Bilbao Preparatory Academy K-8, 4011


Shapes All Around Us
MATH BUILDING
VIRTUAL MATH
PROBLEM SOLVING

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Math Geometry Standards

DOMAIN GEOMETRY

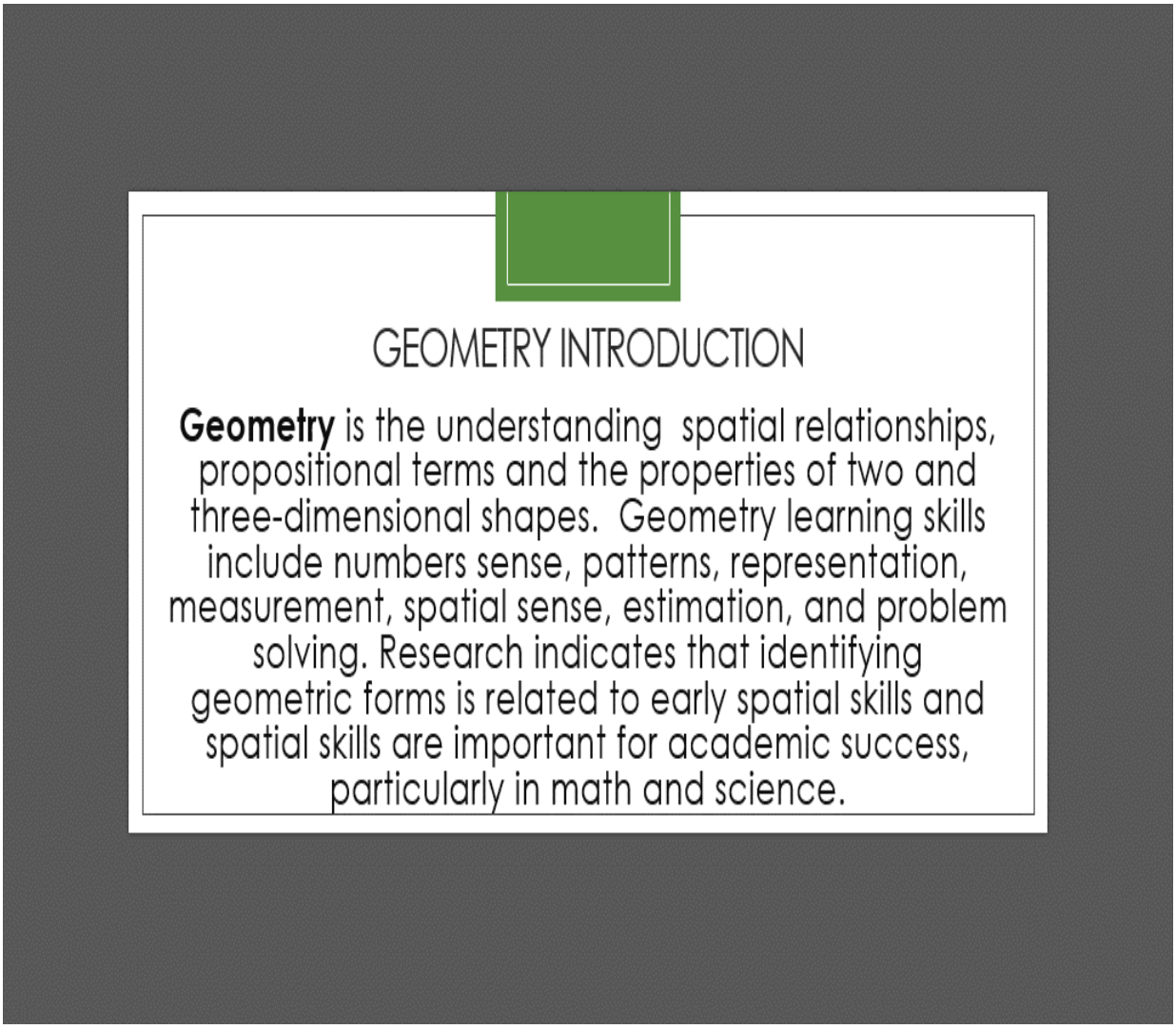
Standard Code and Standard

MAFS.1.G.1.2 Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create

MAFS.2.G.1.1 Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

MAFS.3.G.1.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.

MAFS.4.G.1.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.


GEOMETRY INTRODUCTION
Geometry is the understanding spatial relationships, propositional terms and the properties of two and three-dimensional shapes. Geometry learning skills include numbers sense, patterns, representation, measurement, spatial sense, estimation, and problem solving. Research indicates that identifying geometric forms is related to early spatial skills and spatial skills are important for academic success, particularly in math and science.

Geometry learning Skills

Number sense is the development of the number system, to compose and decompose numbers. Number sense help children understand their various relationships. **Representation** is forming and creating models in mathematical information. Visual representation helps reflect abstract ideas. **Measurement** is the ability to make comparisons and order, understanding measurable attributes. Measurement covers everything form occupational to task life skills. **Problem Solving** is the process of working with details to solve a problem. Problem solving helps with thinking logically about a situation. **Patterns** are things—numbers, shapes, images—in a logical way. Patterns helps with making predictions, to understand what comes next, to make logical connections, and to use reasoning skills. Thinking through a problem, to recognize there is more than one path to the answer. It means using past knowledge and logical thinking skills to find an answer.

Geometry Challenges

Geometry is connected to every strand in the mathematics curriculum and to a multitude of situations in real life. Diagrams allow us to apply knowledge of geometry, geometric reasoning, and intuition to arithmetic and algebra problems.

Those who struggle with shape recognition might also struggle with:

spacial awareness

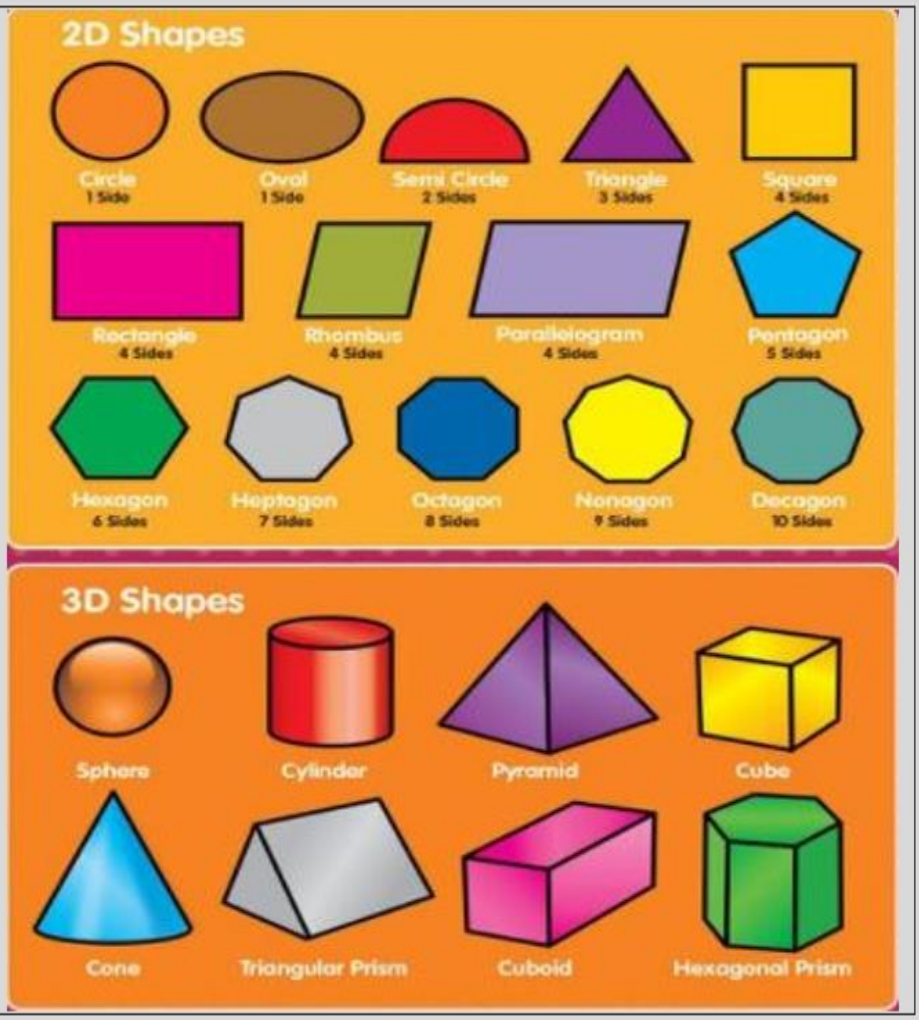
spacial orientation

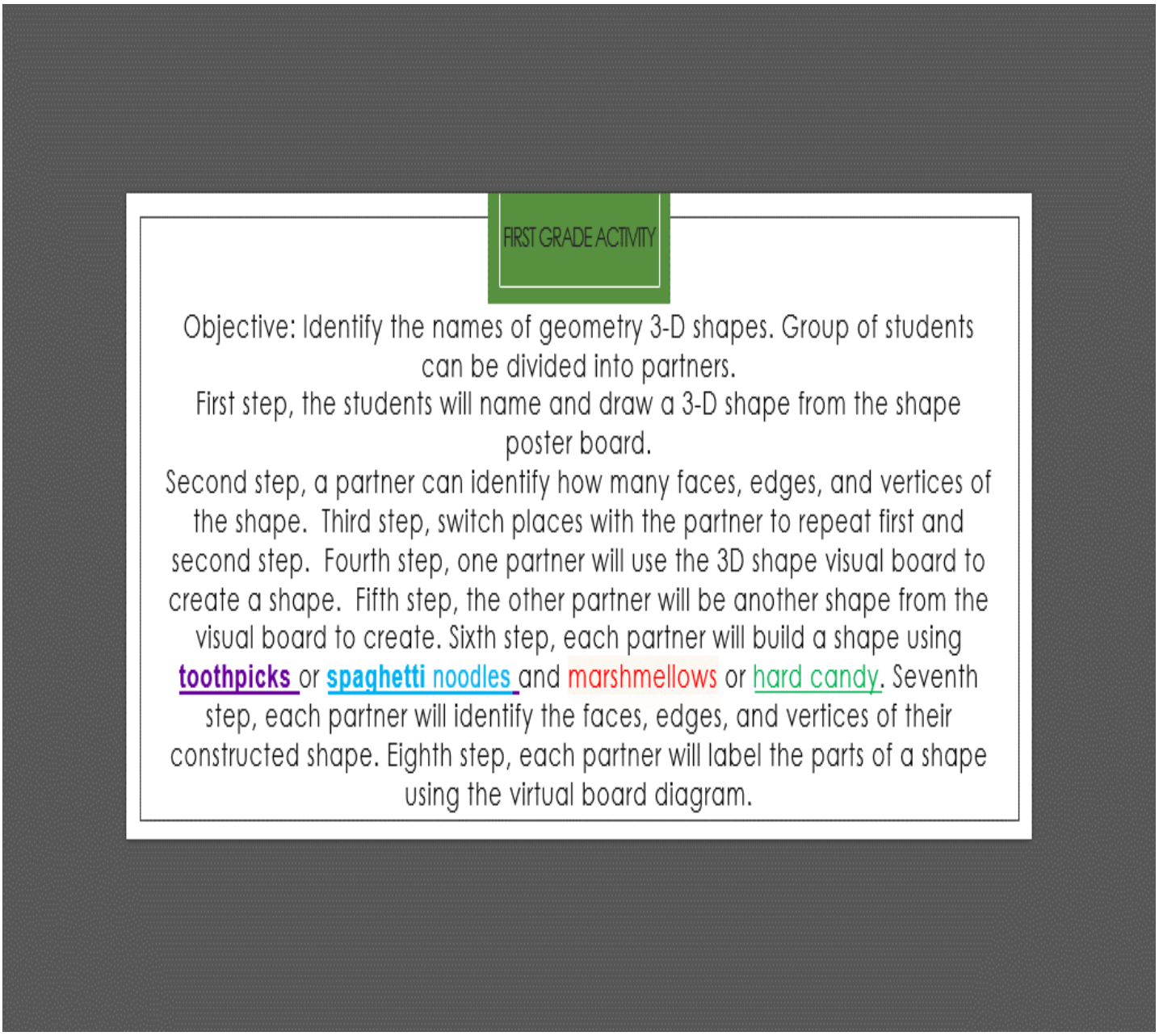
visual processing

categorizing and comparing

problem solving

Shape Attendence



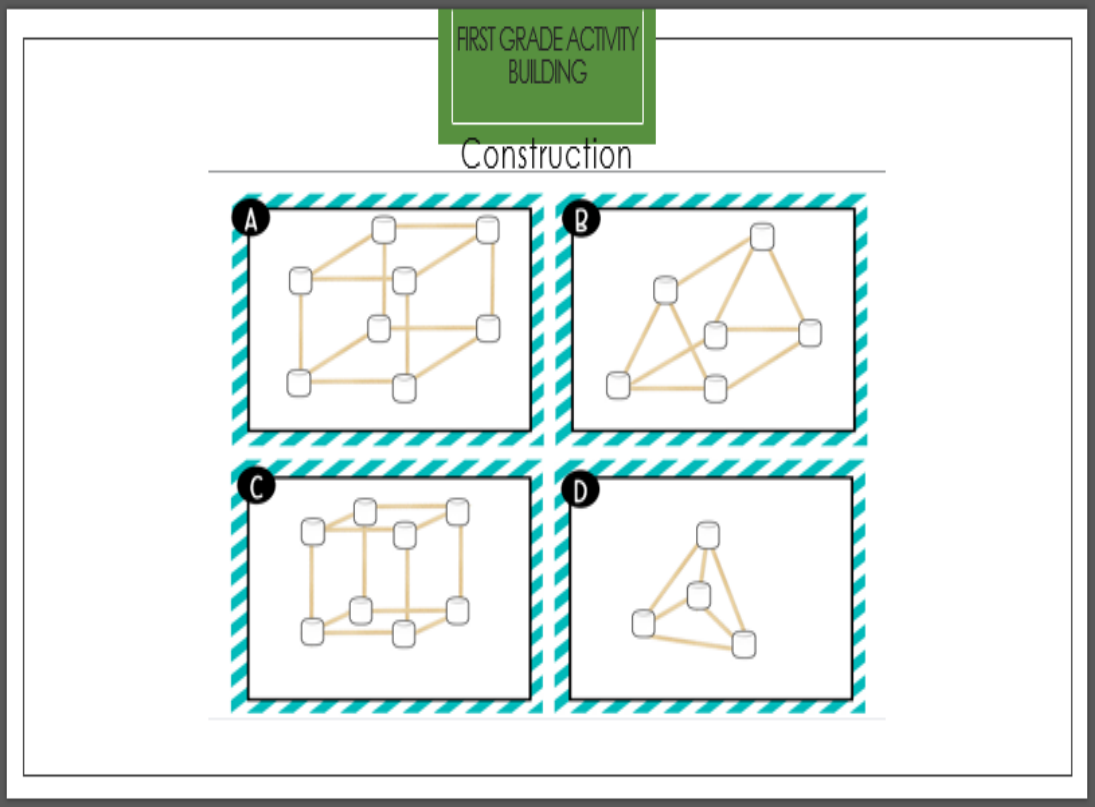

FIRST GRADE ACTIVITY
Objective: Identify the names of geometry 3-D shapes. Group of students can be divided into partners.
First step, the students will name and draw a 3-D shape from the shape poster board.
Second step, a partner can identify how many faces, edges, and vertices of the shape. Third step, switch places with the partner to repeat first and second step. Fourth step, one partner will use the 3D shape visual board to create a shape. Fifth step, the other partner will be another shape from the visual board to create. Sixth step, each partner will build a shape using toothpicks or spaghetti noodles and marshmellows or hard candy. Seventh step, each partner will identify the faces, edges, and vertices of their constructed shape. Eighth step, each partner will label the parts of a shape using the virtual board diagram.

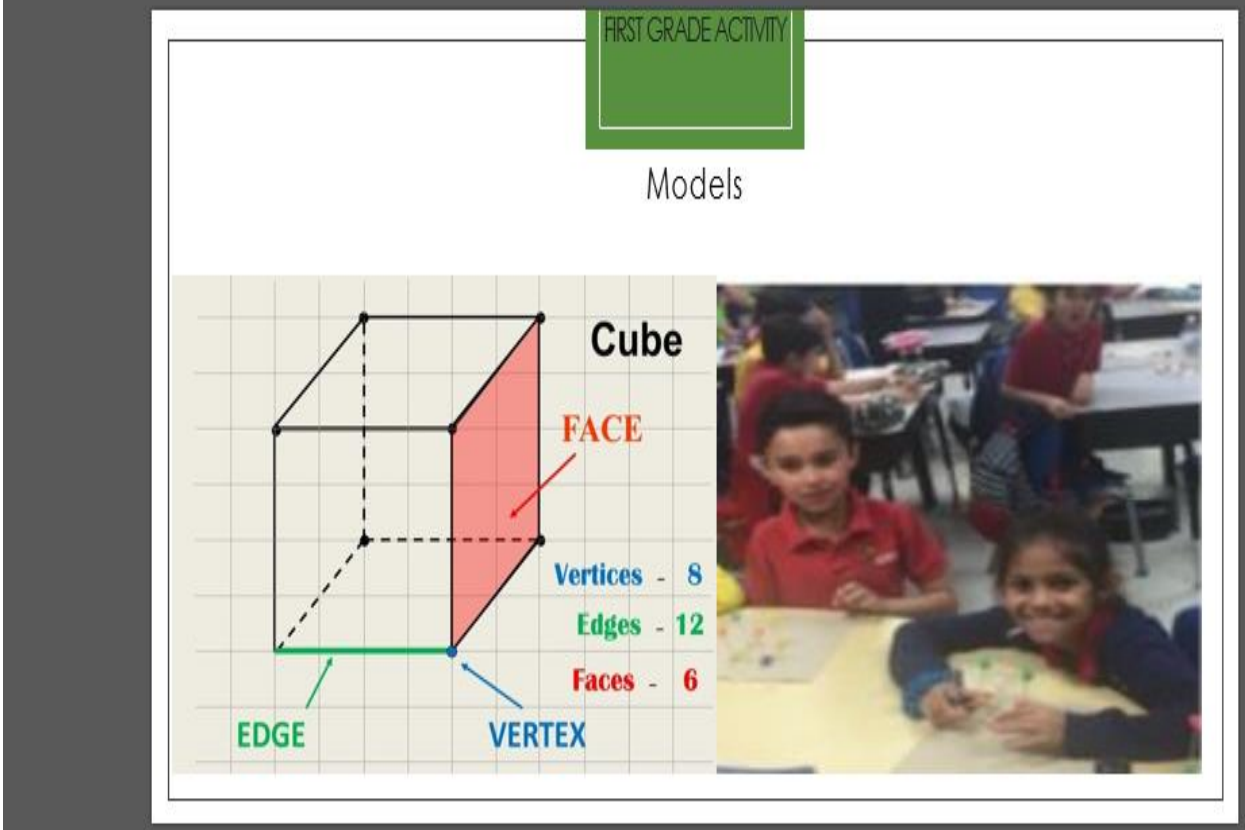
FIRST GRADE ACTIVITY
"VIIRTUAL CHART"

Chart

BUILD EACH SHAPE AND THEN DRAW AND NAME IT BELOW. LABEL THE NUMBER OF EDGES, VERTICES, AND FACES!

DRAW THE SHAPE	NAME THE SHAPE	NUMBER OF EDGES	NUMBER OF VERTICES	NUMBER OF FACES
A				
B				
C				
D				


FIRST GRADE ACTIVITY
BUILDING
Construction
A
B
C
D


FIRST GRADE ACTIVITY
Models
Cube
FACE
Vertices - 8
Edges - 12
Faces - 6
EDGE
VERTEX

SECOND GRADE

Objective: The students will use geoboards to create shapes and build the squares in the area.

Materials: Virtual Geoboard in four-by-four small grid.

Ask: "Hou can the number of squares of various shapes be created on the grid?"

1. Show how sliding a shape on a two-by-two square around a virtual grid show the number of squares in the area. 2. Create a shape using the virtual rubber bands for the horizontal and vertical sides. 3. Determine the length and the width of each shapes based on the size with the amount of squares in the area. 4. Ask: How many squares can be used to completely cover the four-by-four geoboard. 5. Compare the shapes with the amount of more or less area in the virtual geoboard.

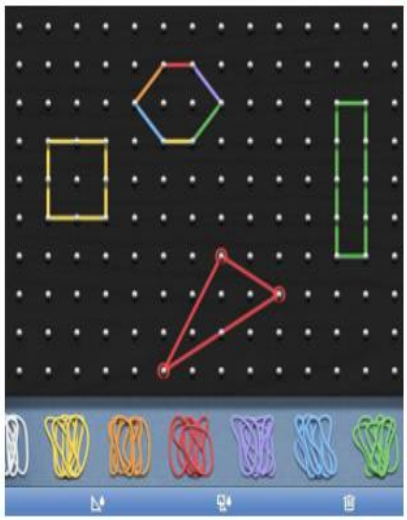
SUMMARY

Students create shapes with a horizontal and vertical sides on a virtual geoboard. They are guided to find a pattern to the number of such squares that can be created on a geoboard of various sizes (one-by-one, etc.). Students then use the pattern to predict how many such squares can be created on a virtual geoboard.

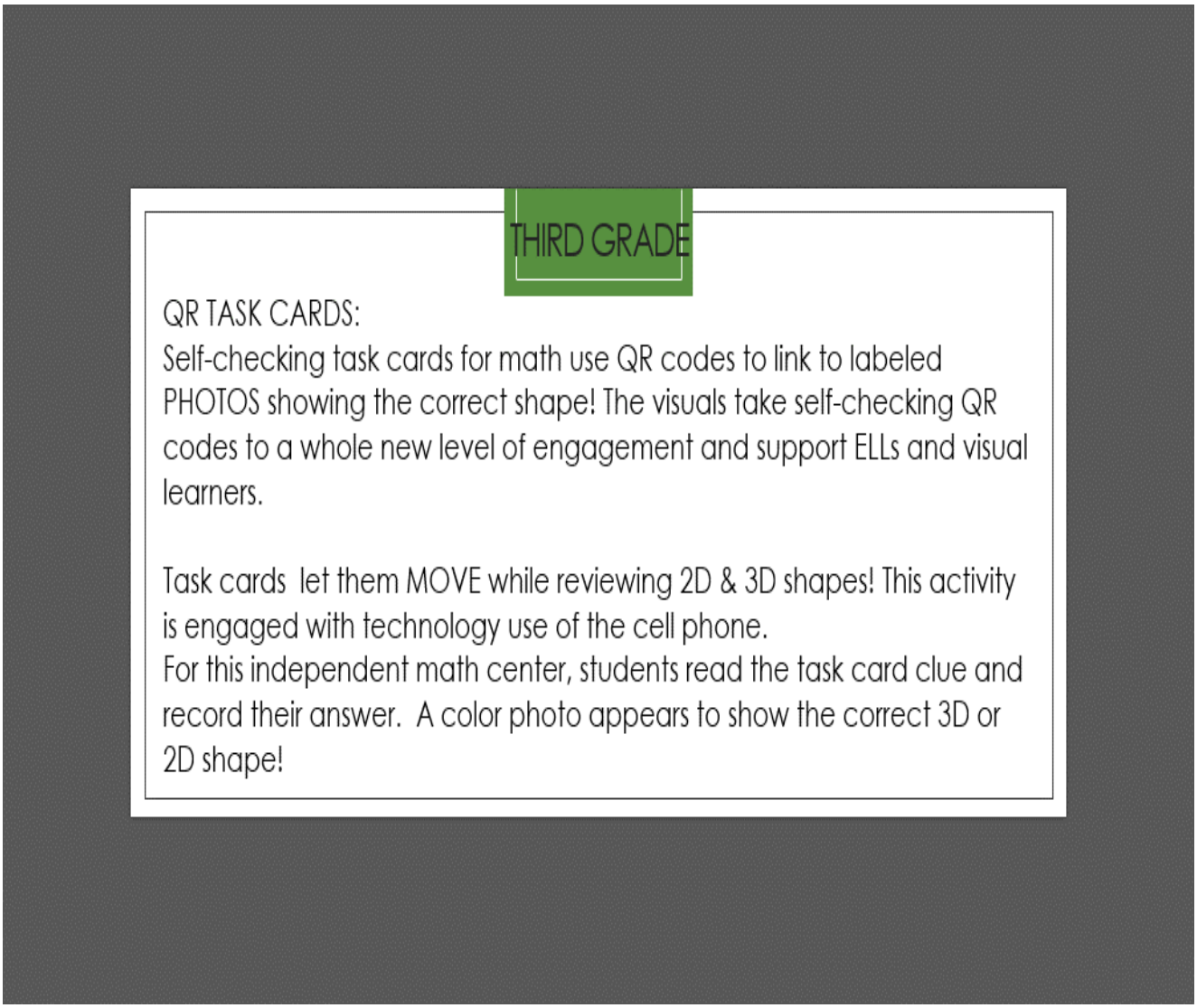
Their investigation can be duplicated using a virtual graphing paper.

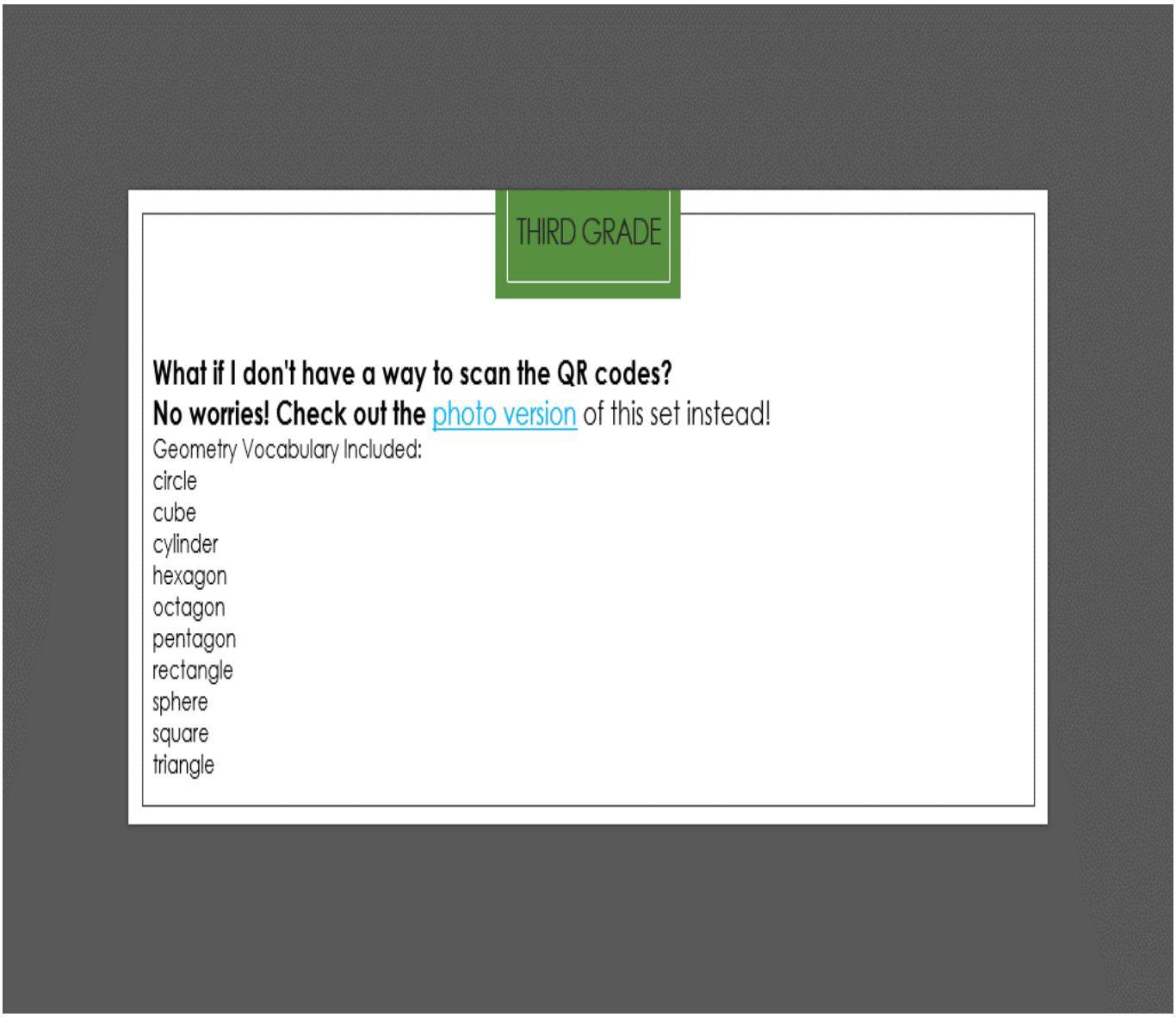
Goal: Student's goal is to use the virtual geoboard independently to continue their investigation of geometric shapes.

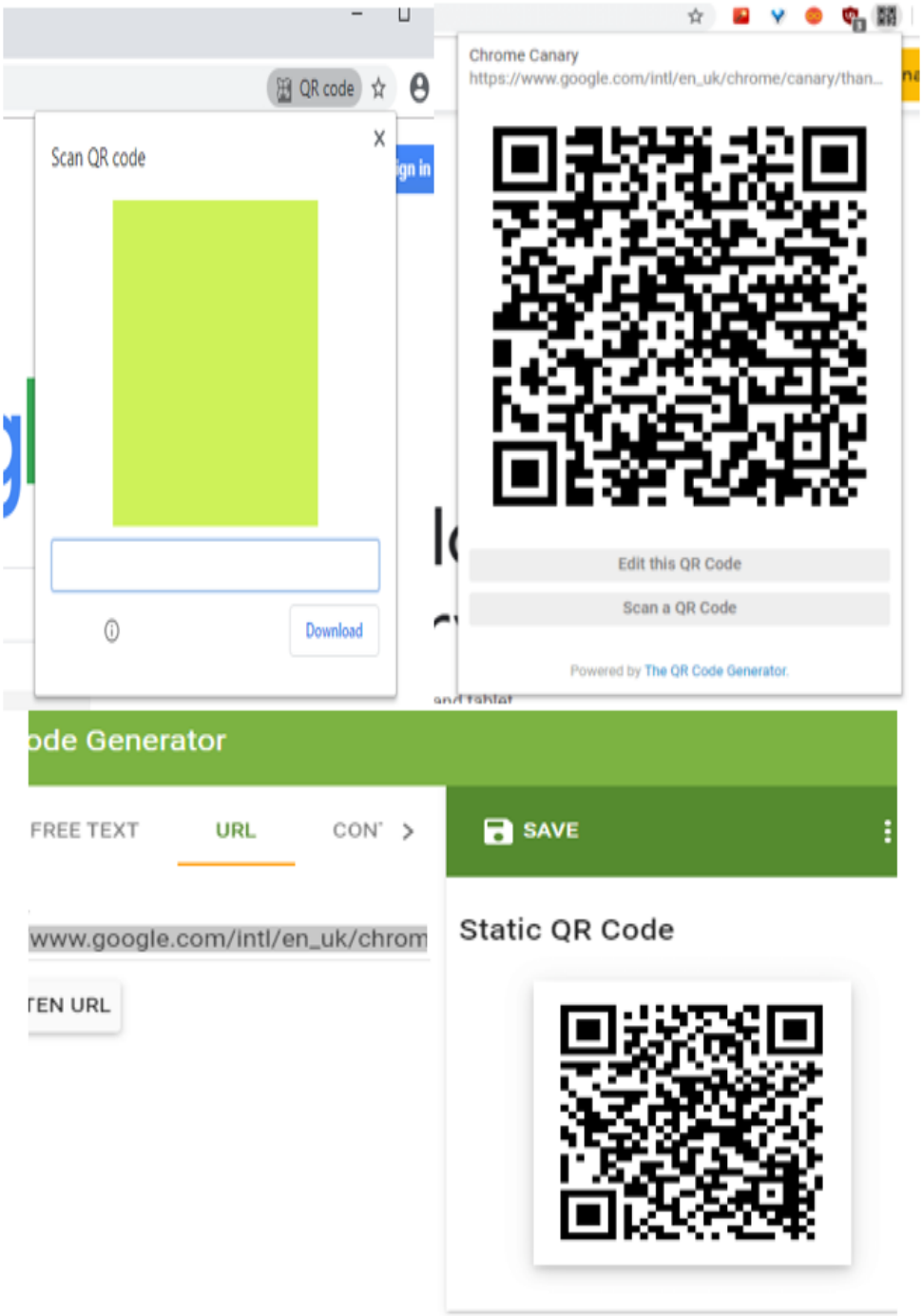
VIRTUAL GEOBOARD



https://apps.mathlearningcenter.orggeoboard/


THIRD GRADE
QR TASK CARDS:
Self-checking task cards for math use QR codes to link to labeled PHOTOS showing the correct shape! The visuals take self-checking QR codes to a whole new level of engagement and support ELLs and visual learners.
Task cards let them MOVE while reviewing 2D & 3D shapes! This activity is engaged with technology use of the cell phone.
For this independent math center, students read the task card clue and record their answer. A color photo appears to show the correct 3D or 2D shape!


THIRD GRADE
What if I don't have a way to scan the QR codes?
No worries! Check out the photo version of this set instead!
Geometry Vocabulary Included:
circle
cube
cylinder
hexagon
octagon
pentagon
rectangle
sphere
square
triangle



QR CODE

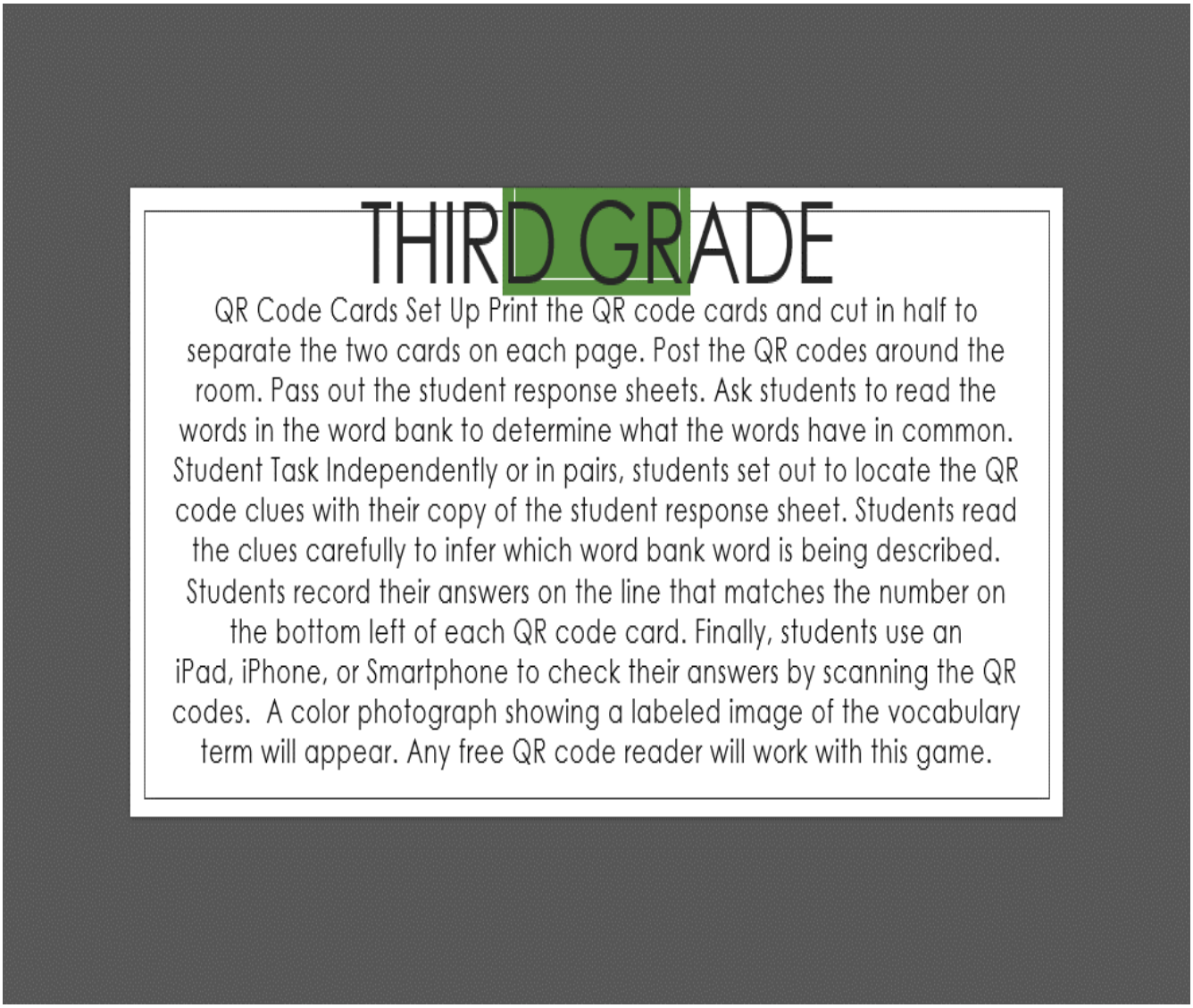
How can I enable Chrome's QR code generator?

1. Enable the sharing page via QR code setting

- Download and install Chrome.
- Open the browser.
- Enter the following link in the URL bar and press Enter:`chrome://flags/#sharing-qr-code-generator`
- Then select **Enabled** on the drop-down menu for the **Enable sharing page via QR Code** setting.
- Click the **Relaunch** button to restart the browser.
- Right-click a webpage and select the **Generate QR code for this page** option to open the Scan QR code box shown directly below.

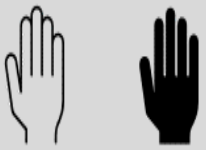
2. Add the QR Code Extension to Google Chrome

- Click **Add to Chrome** on the QR Code Extension page.
- Open a webpage to get a QR code for.
- Click the **QR Code Extension** button shown directly below.
- You can scan the code displayed with a mobile device.

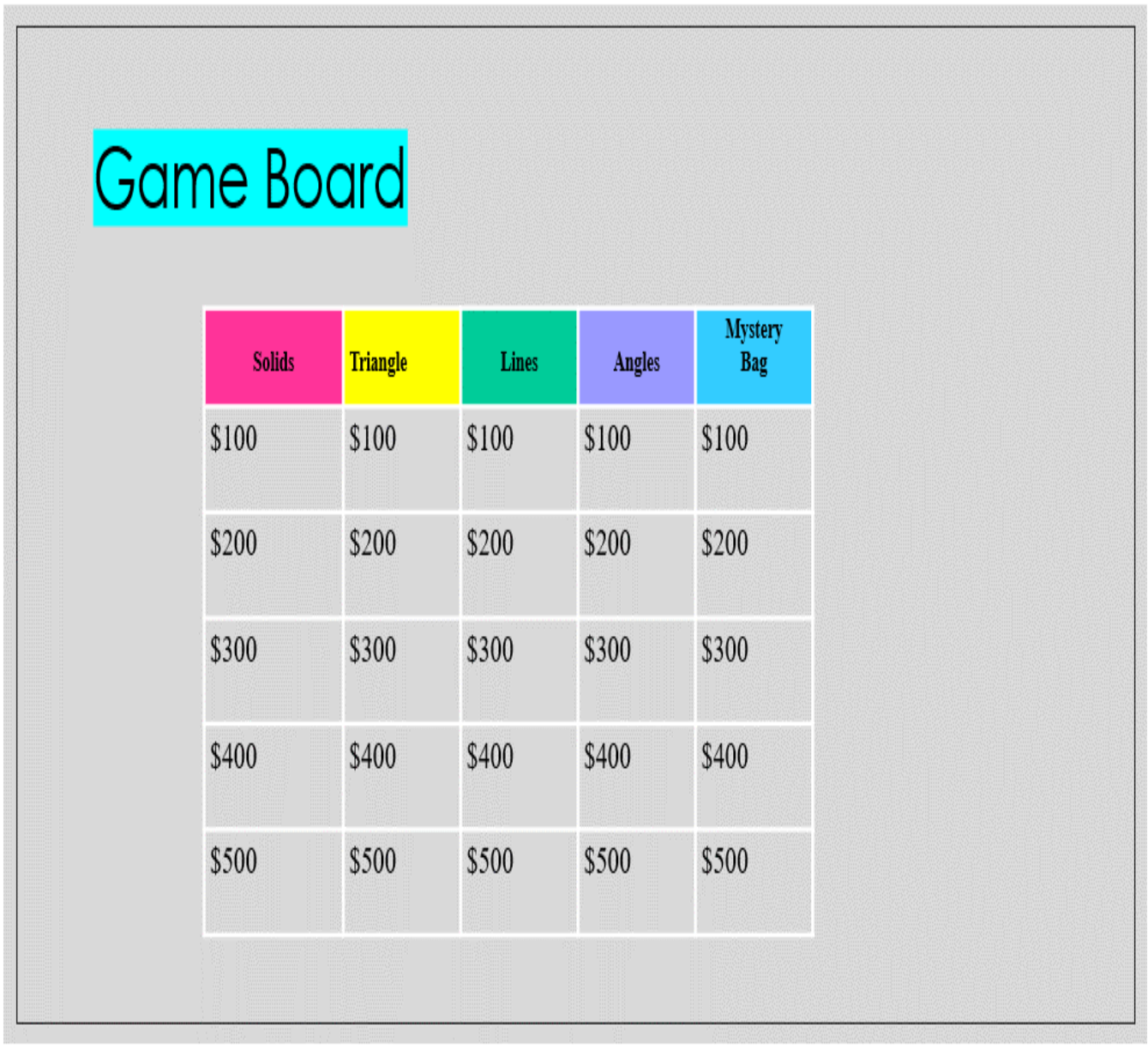

THIRD GRADE
QR Code Cards Set Up Print the QR code cards and cut in half to separate the two cards on each page. Post the QR codes around the room. Pass out the student response sheets. Ask students to read the words in the word bank to determine what the words have in common. Student Task Independently or in pairs, students set out to locate the QR code clues with their copy of the student response sheet. Students read the clues carefully to infer which word bank word is being described. Students record their answers on the line that matches the number on the bottom left of each QR code card. Finally, students use an iPad, iPhone, or Smartphone to check their answers by scanning the QR codes. A color photograph showing a labeled image of the vocabulary term will appear. Any free QR code reader will work with this game.

Fourth Grade

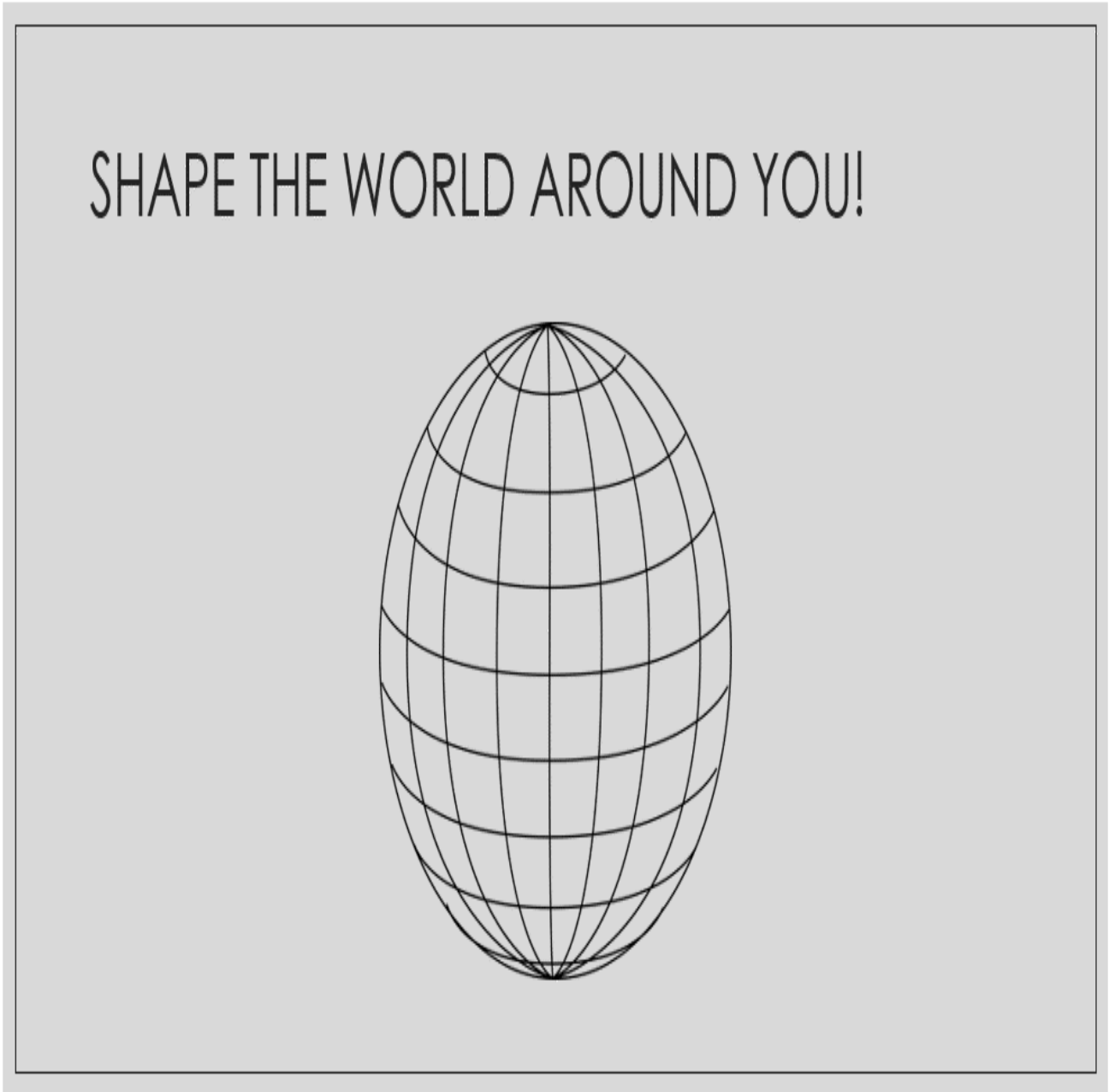
- Enjoy Geometry Jeopardy!
- Choose players or groups - Individuals or Teams can play!
- Plan a way for contestants to indicate they want to answer (ring bell, clicker, etc.)
- Player #1 or Team #1 chooses a category and question dollar amount first.
- Teacher reads the "answer" completely, then contestants can respond.
- After a response is given by a player, click anywhere on the slide to see the correct response.
- Record the contestant's score – You gain the dollar amount if correct; lose the dollar amount if incorrect.
- Then, click "To Game Board" and continue the game until all categories are finished.



Create a Jeopardy Game Site: https://jeopardylabs.com/



MATH QUOTE



SHAPE THE WORLD AROUND YOU!