

## TEACHER LESSON GUIDE

### DESIGN to DISPLAY - COLLABORATIVE CHART

Two class lesson - Vector design skills, laser cutting, data visualization/interpretation

[USE ACCOMPANYING SLIDESHOW](#)



#### GRADE:

3rd + 4th grade

#### MATERIALS:

Gravit Designer student account, access to laser cutter, plywood, glue, paint, markers, large pieces of graph paper, camera

#### LESSON OBJECTIVE:

Introduction to vector shapes - practice 2D design skills, laser cutting fabrication, and finishing. Produce a first name initial tile and create a collaborative display in the form of a bar chart. Make observations about the data.

---

### CLASS 1

#### INTRODUCTION:

- Explain the goal of making a first-name initial tile.
- Show an example of a pre-made tile.
- Explain the breakdown of the lesson. What will happen in class 1 and what will happen in class 2.

#### INTRODUCTION TO GRAVIT DESIGNER:

- What is a pixel?
- Explain the concept of raster vs vector, and how the laser cutter reads files.
- Introduce the program and have students login to their account and create a new document.

#### PRACTICE:

- Demonstrate and follow the slideshow for making their letters and 2 in square tiles.
- Make sure to show students how to save work and where they should put their files.

#### BETWEEN CLASSES:

Organize student files in one main file ready for laser cutting.

---

### CLASS 2

#### LASER CUTTING DEMONSTRATION:

- Explain the components of the laser cutter.
- Show students the cutting file and how that file tells the laser cutter what to do.
- Cut and pass out student's letters and tiles.

#### ADDING COLOR and GLUING:

- Provide students with markers and explain that they will glue letters to the tiles. Explain that they should use a contrasting color/design so that the letter stands out from the background.
- Glue letters to tiles.

#### COLLABORATIVE TASK:

- Ask students to work together to create a bar chart using their letters.
- Discuss components of the bar chart.
- Have students make observations about the chart.