**STEM Project Write Up**

Project Title: Plotting Ordered Pairs

**Appropriate Grade Levels: 5**

**Activity Objective: To teach students plotting ordered pairs on a coordinate plane**

**Materials Needed:**

* Chalk or painter’s tape
* Area to chalk or tape outdoors
* A list of ordered pairs

**What is a coordinate plane?** A coordinate plane is a two-dimensional plane formed by the intersection of the x-axis and the y-axis. It can be used to locate points on a plane. <https://www.math.net/coordinate-plane>

**Louisiana Grade Level Standard 5.G.**

1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number in the ordered pair indicates how far to travel from the origin in the direction of one axis, and the second number in the ordered pair indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

**Rationale:** Plotting ordered pairs on a coordinate plane is a skill that your student will continue to utilize throughout their educational journey. For instance, a number of middle, high school, and collegiate level courses build off plotting ordered pairs in order to solve mathematical problems.

**Careers Related to Symmetry**:

Architecture

* Architects plan and design houses, factories, office buildings, and other structures.
* <https://www.bls.gov/ooh/architecture-and-engineering/architects.htm>

Engineering

* An engineer is a person who designs, builds, or maintains engines, machines, or public works. There are many different types of engineers such as mechanical engineers, chemical engineers, and petroleum engineers.
* <https://www.bls.gov/ooh/architecture-and-engineering/home.htm>

Cartographers/Photogrammetrists

* Cartographers and photogrammetrists collect, measure, and interpret geographic information in order to create and update maps and charts for regional planning, education, and other purposes.
* <https://www.bls.gov/ooh/architecture-and-engineering/cartographers-and-photogrammetrists.htm>

Computer programming

* Computer programmers write, modify, and test code and scripts that allow computer software and applications to function properly.
* <https://www.bls.gov/ooh/computer-and-information-technology/computer-programmers.htm>

Agriculture

* Agriculture is the science or practice of farming, including cultivation of the soil for the growing of crops and the rearing of animals to provide food, wool, and other products.
* <https://www.bls.gov/ooh/farming-fishing-and-forestry/agricultural-workers.htm>

**Learn more: How can you and your child learn more about symmetry at home for FREE?**

* **Coordinate Plane Art -** Have your child plot points and connect the dots to create a fun image. Free printables can be found online. For example

<https://s3-us-west-1.amazonaws.com/math-salamanders/Geometry/Coordinates/All-4-Quadrants/find-and-plot-2.pdf>:

* **Coordinate Games Online -** Have your child utilize this website to play games that make them plot ordered pairs on a plane in a fun and creative way. (Example: Whale game like in video) <https://www.mathnook.com/math/skill/coordinategridgames.php>
* **Coordinate Plane w/ Cups -** A graph should be drawn on one cup. An ordered pair that matches a graph should be written on another cup. Use up to ten cups to create different varieties of matches. Students can take turns matching the ordered pairs with respective graphs.

**Video Link:** <https://youtu.be/M_5zwFvOPZ8>