**Ozobot - Increasing Patterns**

Grade

5-7 - Intermediate

Subject

Math

ADST

Big ideas

Math:

Regular changes in patterns can be identified and represented using tools and tables.

ADST

Designs can be improved with prototyping and testing.

Skills are developed through practice, effort, and action.

Cross Curricular

Math and ADST

Core Competency

Communication:

Working with others to achieve a common goal.

Presenting Information in an organized way.

Creative Thinking:

Building on other people’s ideas, creating new things within the constraints of a form, a problem, or materials.

Using experiences with various steps and attempts to direct future work

Personal and Social:

Persevering with challenging tasks.

Social Responsibility:

Being part of a group.

Developing and maintaining diverse, positive peer relationships.

Curricular Competencies

Math:

Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving

Visualize to explore mathematical concepts

Communicate mathematical thinking in many ways

ADST

Identify the main objective for the design and any constraints

Generate potential ideas and add to others’ ideas

Outline a general plan, identifying tools and materials

Make changes and test again, repeating until satisfied with the product

Construct the final product, incorporating planned changes

Reflect on their design thinking and processes, and their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain a co-operative work space

Lesson Topic/Theme

Students use Ozobot Blockly to code the Ozobots to demonstrate a growing pattern.

Suggested Activity/Unit Concept

This should be done as a culminating activity for a study of increasing and decreasing patterns and algebraic relationships. At the beginning of the lesson, students should co-create a criteria for the lesson. Students should be small groups of two or three. They can design a pattern that increases and show the rule that it follows. Then students can use computers and Ozobot Blockly to create an increasing pattern done by the ozobot. They can make the pattern using lights, turns speeds-whatever their imagination leads them to. Afterwards groups can share their patterns and see if other groups can guess the rule by watching each other’s Ozobots.

Tags/Keywords

Ozobots, blockly, patterns, increasing patterns, evo, math, applied skills, design, robotics, algebra

General Comments

Students should already know basic use of the Ozobots.

***Resources:***

Websites:

<https://portal.ozobot.com/lessons> - ozobots website lessons

<https://ozoblockly.com/> - Ozoblockly

<http://www.learn71.ca/ozobots-lesson-ideas/> - SD#71 teacher guides and lessons

Some helpful blackline masters:

<http://www.learn71.ca/wp-content/uploads/2018/08/OZOBOT-BLMs.pdf> -these sheets can be used to help introduce Ozobots and to calibrate them.