Montessori Lesson Plan

School: Creative World of Montessori	Teacher: Tracy Sturgis
Subject/Topic(s): Geometric Figures – Scale and proportions	
Grade Level: 7	Theme: Invention & Construction

Curriculum Components Included: ❑Project ❑Mini-Whole Grp ❑Lesson-Small Grp x Student engagement during lesson x Shelfwork ❑Rubric ❑Self-Assessment ❑Seminar/Qs x Interdisciplinary ❑ Outside Opportunity

Seven Gateways for Adolescence addressed in this lesson: ❑Deep Connection ❑Silence & Solitude x Meaning & Purpose x Joy & Delight ❑Creative ❑Transcendence ❑Initiation

Standards/Objectives

Draw, construct, and describe geometrical figures and describe the relationships between them.

7.G.1 Solve problems involving similar with right triangles, other triangles, and special quadrilaterals.

a. Compute actual lengths and areas from a scale drawing and reproduce a scale drawing at a different scale.

b. Represent proportional relationships within and between similar figures.

7.RP.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units.

7.PR.2 Recognize and represent proportional relationships between quantities.

b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.

d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0,0) and (1, r) where r is the unit rate.

Materials: Teacher	Materials: Student	Time/Dates
• Whiteboard/markers • Lesson#4- Are These Figures the Same? From *Where'd They Get That Idea? Vol. 1* •	• Lap whiteboards, markers • Pencil • scissors • Graph paper • Montessori geometry sticks	• 8/13-8/16/19

Facts/Skills (Prior Knowledge)	Concepts/Big Ideas
• Recall Acute, Obtuse, Right triangles • Using pencils, rulers and graph paper • 1 hour = 60 min	• Unit rate • Ratio • D=rt • Velocity (r) = d/t • Euclid's classification of triangles • Similarity

Lesson Relates to Theme (Note: Every content lesson will not directly relate to the theme)

Euclid was Greek – connects to Ancient Greece

Connection to Elementary Material or Lesson

Creating triangles with geometry sticks, identifying/classifying

Step-by-Step Procedures
1st Period Lesson – 20 minutes (Include steps and materials) • **Tues.** Introduce/review unit rate by asking how fast they think their car was going on the way to school? What does miles per hour mean? How about your favorite book? If it took you 5 mins to read each page, how many pages could you read in an hour (if nobody interrupted you)? This is called your

rate, just like in the car it is called speed. In your science lesson it will be called velocity. You will be calculating velocity by knowing the how far you travel and how long it took you.

- We can even draw a picture. It can save us the time of figuring out how many pages we can read in 3 hours, because we can look at a graph – as long as you read at a constant rate.
- **Wed or Thurs** Portion and similarity (Lesson #4 – Are these figures the same?) and building triangles with geometry sticks

2nd Period – Recognition (Shelfwork)	2nd Period – Recall Practice
• Formula matching	• **Tues.**Graphing practice. • Tues & Wed Math pages 6-8, 10 from RatioProportionBinder scan • Math problems from Science lesson • **Wed or Thurs** Cutting out triangles and classifying (pp 35-40, Lesson #4) • Constructing similar triangles with geometry sticks • P. 13 Similar triangles worksheet from scan

3rd Period – Student Application

- I will make up ratio and Velocity = d/r questions based on their level

Plan for Differentiation

Teaching	Work	Assessment
	I will make up ratio and Velocity = d/r questions based on their level	Using ratios to name relationship, testing for proportionality

Outside Support: Who, What, How

Formal Assessments

Formative Assessments

Can they build similar triangles with geometry sticks and write out in ratio form?

Summative Assessment

Quiz questions taken from p. 13 of scan