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The Arts in STEM

Scavenger Hunt Assignment

5E Lesson Outline

The Greedy Triangle STEM Math Lesson

Grade Level: Kindergarten

Topic: Geometry

Standards:

- CCSS.MathContent.K.G.A.2- Correctly name shapes regardless of orientation or overall size.
- CCSS.MathContent.K.G.B.4- Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length)
- CCSS.MathContent.K.G.A.B.5- Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes
- 2-PS1-1- Matter and its Interactions- Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

Lesson Objective:

- The students will explain and classify polygons with 12 or fewer sides by individually creating a polygon glossary.
- The students will be able to plan and conduct a simple investigation

5 E Components:

- Engage-read the book the Greedy Triangle- students build the polygons along with you as you read the story
- Explore- 3 stations- Pick a polygon game, (describe shapes using attributes), Geo boards, (build polygons using geo boards), Marshmallow building, (build polygons using toothpicks and marshmallows)

- Explain- Whole group go through the 2D shape PowerPoint with the shape game, (call on students to describe shapes using vertices and sides.)
- Elaborate- Bubbleology- students will perform an experiment using straws, string, and bubbles to answer the question, “Does the shape of an object determine the shape of the bubble?”
- Evaluate- Students create a glossary of polygons using the template below.

Adding Art to the Lesson Rational:

The geometry math lesson above is a current lesson in which I teach in my classroom. The book, “The Greedy Triangle,” has always been one of my favorites to use to help teach two dimensional shapes with my Kindergarten students. I found the 5E model, and incorporated the STEM elements a year ago. I really noticed a difference in my students understanding and transfer of knowledge by not just simply reading the book and going over shapes, but allowing students to have amply hands on, critical thinking experiences to discover all attributes of shapes first hand. When looking at my current lesson, there are already some Art influences/standards addressed. When the students are using marshmallows and toothpicks to build two dimensional polygons, they are using the visual art standard 1, (generate and conceptualize artistic ideas and work.) However, after diving through the different components in the National Core Arts Standards, I discovered a way in which I could provide additional art instruction for the betterment of student learning. The standard I chose was Theater Anchor Standard 11b, (with prompting and support, tell a short story in a dramatic play or guided drama experience.) This standard really resonated with me because any

time I am able to allow my kinders to get up and act out or reenact a scenario, not only do they greatly enjoy it, but the take away from the lesson is exponentially higher. So, if I were to extend the engage part of my lesson, by having students pair up and recreate the story of, “The Greedy Triangle,” then not only would it allow them a second opportunity to revisit the polygons we’re learning about, but an opportunity to present and describe the shapes in a new and different format. It also allows a chance to bring in the ELA standard, (CCSS.ELA-Literacy.RL. K.2-3.) That states students are able to retell familiar stories including key details, characters, setting, and major events. Which provides students with more opportunities to make connections and widen their depth of knowledge.

Work Cited:

Teachers Pay Teachers, Mrs. Burk’s Backpack, The Greedy Triangle 5E Math Lesson Plan, 2019

National Core Arts Standards, <https://www.nationalartsstandards.org/>

Common Core State Standards Initiative, <http://www.corestandards.org/>

Next Generation Science Standards, <https://www.nextgenscience.org/>