

STEAM Showcase Floor Plan Design

Frank Wilburn & Emmanuel Fairley, Henry Grew School, Boston

3rd Grade, Math

CCSS.MATH.CONTENT.3.MD.C.5
Recognize area as an attribute of plane figures and understand concepts of area measurement.

CCSS.MATH.CONTENT.3.MD.7.D
Recognize area as additive and applying this technique to solve real world problems.

21st Century Skills:
Digital Literacy

21st Century Skill:
Communication

Students applied their understanding of area and perimeter to design a layout for the school's STEAM Showcase. Students visualized how they could combine and align actual cafeteria tables to create rectangular and rectilinear shapes before calculating the area and perimeter of their proposed displays for the showcase.

Students then used multiple modalities, such as Geoboards, grid paper, and Google Draw to design their layouts. Lastly, they each wrote a description of their layout and their reasoning behind how they partitioned the cafeteria space using polygonal language (i.e. the attributes of the polygons they create).

CCSS.MATH.CONTENT.3.MD.D.8
Solve real world and mathematical problems involving perimeters of polygons.

21st Century Skill:
Critical Thinking

CCSS.ELA-LITERACY.W.3.1.B
Provide reasons that support the opinion.

 **Engaging and Relevant**

 **Original Solution**

 **Cognitively Rigorous**

“Designing this performance assessment has challenged us to carefully consider the types of questions we are asking, and why we are asking them to ensure that students are engaging in a meaningful tasks and not superfluous work.”

- Frank Wilburn & Emmanuel Fairley

Sample student cafeteria floor plan design for the STEAM Showcase (right)

