The topic and focus of this learning center is area and perimeter. It is designed for 3rd grade but could be modified for 4th grade. The purpose is to provide a variety of hands-on, design, practice and interactive activities to enhance and assess students’ understanding of area and perimeter. Students will demonstrate their understanding through the six different activities. The activities include: 1) using cubes to find area and perimeter, 2) rolling dice for area and perimeter, 3) activities using Spaghetti and Meatballs for All!, 4) online perimeter activities, 5) task cards, and 6) engineering a zoo exhibit. The activities provide adequate practice for area and perimeter that reflect back to the standards.

**Math Standards:**
3.MDA.5 Understand the concept of area measurement.
   1. Recognize area as an attribute of plane figures;
   2. Measure area by building arrays and counting standard unit squares;
   3. Determine the area of a rectilinear polygon and relate to multiplication and addition.

3.MDA.6 Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

**Writing Standard:** 3.2.1ac: Write informative/explanatory texts that a) introduce a topic and group related information together and c) include illustrations to aid comprehension.

**Science Standard:** 3.S.1A.5 Use mathematical and computational thinking to (1) express quantitative observations using appropriate English or metric units, (2) collect and analyze data, or (3) understand patterns, trends and relationships.
Annotated Bibliography


- This text provides examples, images, and stories relating to area and perimeter. Students can refer to this text while doing their activities. It is also an intriguing trade book as it relates area and perimeter to monsters and their homes, yards, and other places and things. Instead of having a math book to refer to, they can be more interested with the monster story that incorporates these math concepts.


- The students will practice with two activities from this useful website: Perimeter Using Ruler Set 1 and Set 2. Students can practice finding the perimeter of shapes by using the moveable ruler. The ruler rotates, so students can measure all sides of the shape. I will allow students to practice perimeter with this interactive website. It is an example of a real-world practice, since students are learning to measure accurately.


- This book is used in Activity 3. The book poses a problem that requires students to realize that if shapes have the same area, they do not have the same perimeter. I included hands-on manipulatives with this book, so students could set up the tables and chairs from the story and see which combinations work. This could be used as a read-aloud and whole group lesson, or students can do it in groups during centers.


- These task cards are a great resource that includes a number of area and perimeter problems with varying difficulty. This is a good way for students to practice and check
their answers immediately. An answer key is provided, and students are instructed to mark the problems that they struggled with and could not find the answer to. These are great to use in partners or individually.


-This book is used in Activity 6 when students are required to create a zoo exhibit. Any animal book could be used, as students are asked to choose an animal to create the exhibit for. An even better book or resource would include solely zoo animals. Students will look in the book for an animal they would find at the zoo and decide what size and shape exhibit they need.


-Although this website requires a subscription, it is an incredible resource and has activities for any and all standards for all grades. In Activity 4, students are to explore these different online activities and practice. The activities I chose to go with area and perimeter include Grade 3: Perimeter, Grade 3: Perimeter- Find the Missing Side Length, Grade 2: Perimeter Word Problems, Grade 3: Area of Rectangles, and Grade 3: Compare Area and Perimeter of Two Figures. It gives students a final score, so this could easily be used as formative assessment.


-Kids Math- Area&Perimeter Worksheets is an interactive app where students can complete area and perimeter worksheets by writing on them and saving them. When students save them to the photo gallery, the teacher can check how well the students did and use it as formative assessment. The activities get more difficult as you go.

-NCTM provides a great activity for area and perimeter. They stress that students must learn the “why” before the “how” and that they learn best through using a concrete-pictorial-abstract approach. This helped me as I planned my center. I must provide a variety of ways for students to learn and understand the concepts. In their example lesson, for concrete approach, students will create human rectangles and use geoboards. For pictorial, students draw and represent rectangles. Lastly, students will experience an abstract approach when they use numbers and symbols to find area and perimeter. It is very important to reach all students and provide a variety of ways to present and practice the content and concepts.


-Chickens on the Move is a lower reading level, so it is helpful to all students, especially struggling readers. This text introduces perimeter in a fun way: chicken coops. It provides numerous examples and shows how to find the perimeter. Students can reference this book while doing their activities.