At-Home Learning Presents CLASSROOM CONNECTION

Lesson Title: How to Find Area **Designer:** Diane Hunter
Discipline: Math **Grade Level:** 4-5

Activity 1: Plan your own dog park!
(Appropriate for AFTER the Broadcast Lesson)

Activity Goal: Apply mathematical concepts (area) by creating your own dog park!

Targeted Math Skills: Finding are of different sized rectangles.

Materials: Paper (any kind); parameters (see below); writing utensil; calculator (optional).

Steps:

1. Read over the parameters paper to know the guidelines.
2. Create different sized parts for the dog park that will meet those parameters.
3. Questions to Consider:
    a. Which area do you think should be the largest? Why do you think that?
    b. When thinking about your space, what did you think about to help you choose the different areas that you selected?

Further Extension:

- Find the perimeter of each of your stations and decide if there could be a way to DECREASE the fencing needed to go around each part.
- Is there another way to configure the parts of your dog park to keep the total area of each part the same?

Activity 2: Add 1 foot!
(Appropriate for BEFORE the Broadcast Lesson)

Activity Goal: Explore how the area changes when 1 foot is added onto one side of a triangle (Note*: 1 foot otherwise does not just add 1 foot to the total area).

Targeted Math Skills: Recognize that area and length are related.

Materials: Sheet of different rectangles (attached); optional: pencil/paper.

Steps:

- Choose a rectangle to explore and find the original area.
- Choose a side to add 1 foot to and extend the rectangle.
- Find the new area and compare how it changed.
- Repeat the process with different rectangles.

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Questions to Consider:

- Why do you think adding 1 foot to a side changes the area as it does?
- Do you think there is a way to predict hot much area will change for different sized rectangles?

Further Extension:

- Would the area by different if a foot was added to a different side of the rectangle? Explore and explain why it is consistent or different.
- Determine would the area always be different or consistent if a foot was added to a different side of the rectangle?

Additional Resources for Lesson-Related Extension Activities:

- **Helpful Tips:**
  - While students work on different spaces, remind them to find the area of each space and keep a running total of all the area.

- **Student-Facing &/or Teacher-Facing:**
  - Introduction to mathematical concepts: Area - https://www.youtube.com/watch?v=_uKKl8R1xBM

- **Teacher-Facing:**
  - Exploring how changing side measurements can change area- https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/WSP-Area-of-Rectangles/

- **Additional lesson plans/subsequent practice with mathematical concepts (area)**:
  - https://everydaymath.uchicago.edu/parents/3rd-grade/em4-at-home/unit_4/

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Activity 1 Materials

- Dog Park Parameters:
  - Create 5 separate spaces for dogs to play in at this dog park.
  - The 5 spaces are:
    - Fetch Zone
    - Agility Alley
    - Puppy arena
    - Relaxation station
    - Group Play
  - It's up to you how big each section is but your total area must be 1000 square feet. All of these have different uses so they should look different. Be creative!!

Activity 2 Materials

- Different rectangle area sheet: