Understanding surface area of a cube essays examples

ASSIGN BUSTER

Introducing the concept of surface area to students in grade five and grade six requires slightly different approaches based on their current mathematics skills.

Introducing the concept of surface area to students with grade four mathematics skills will require that a revisit of finding the area of a square be revisited. In addition, boxes and block shapes need to be incorporated into the learning exercise to familiarize them with the idea of three dimensional objects. After each student can visualize a three dimensional object, the focus will shift to cubes.

The skills grade five students need to have to solve a problem involving the surface area of a cube include: addition, performing multiplication accurately, finding the area of a square, and geometry skills. Grade six students will need similar skills in addition to being able to differentiate the number of open surfaces on a cube.

Arithmetic addition skills will be needed in teaching the students how multiplication works. After successfully explaining how to add numbers to solve multiplication problems, students will begin using two and three digit numbers to multiply. Using these larger numbers (tens to hundreds) the concept of stepwise multiplication will be taught using both addition and multiplication tables. Successful completion of this activity will signal a move to finding the area of squares using progressively larger sides (from one digit to higher two digit numbers).

When each student is thoroughly conversant with the prerequisite skills and is comfortable in finding the area of a square, focus will shift to forming a cube using paper cut outs. At this stage, each student is expected to be

comfortable drawing geometric shapes particularly a square. Each student will have to draw a template similar to the one below using measurements of between 1. 5 inches to 2. 2 inches on an A4 piece of paper.

In the template, there should be four squares connected in a row (S-B-S-T). A square will be attached on either side of the row of squares. Some students may decide to have the squares flanking the row of four attached squares to have different placement. This variation should be encouraged since the placement of squares to the right and left of the row of squares does not affect the outcome, which is a cube. Students demonstrating such behavior are to be encouraged to explore their creative sides.

The students are to cut out the shape along the edges. The result of cutting the shape is a 14-sided shape. Any student with a form having more or less sides will be helped to cut out a 14-sided shape. The resulting shape will be folded along the common edge of two squares to ensure the sides marked with letters B, T, and S are on in the inside. The side marked B will serve as the bottom while the surface marked T will work as the top side of the cube. Students who used a different arrangement should have an identical cube if the labeling of the surfaces used a similar convention as the example provided.