## Unit 8 Lesson 10: Edge Lengths, Volumes, and Cube Roots

### 1 Ordering Squares and Cubes (Warm up)

#### Student Task Statement

Let $a$, $b$, $c$, $d$, $e$, and $f$ be positive numbers.

Given these equations, arrange $a$, $b$, $c$, $d$, $e$, and $f$ from least to greatest. Explain your reasoning.

* $a^{2}=9$
* $b^{3}=8$
* $c^{2}=10$
* $d^{3}=9$
* $e^{2}=8$
* $f^{3}=7$

### 2 Card Sort: Rooted in the Number Line

#### Student Task Statement

Your teacher will give your group a set of cards. For each card with a letter and value, find the two other cards that match. One shows the location on a number line where the value exists, and the other shows an equation that the value satisfies. Be prepared to explain your reasoning.

### 3 Cube Root Values

#### Student Task Statement

What two whole numbers does each cube root lie between? Be prepared to explain your reasoning.

1. $\sqrt[3]{5}$
2. $\sqrt[3]{23}$
3. $\sqrt[3]{81}$
4. $\sqrt[3]{999}$

### 4 Solutions on a Number Line

#### Student Task Statement

The numbers $x$, $y$, and $z$ are positive, and:

$x^{3}=5$

$y^{3}=27$

$z^{3}=700$



1. Plot $x$, $y$, and $z$ on the number line. Be prepared to share your reasoning with the class.
2. Plot $-\sqrt[3]{2}$ on the number line.



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