

Box of Clay Activity

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Summary	Students will compare two cubic functions based on the context of the volumes of a box of clay.
Goals	Address functions of the following formats: a. $y = ax^3$
Materials	Handouts
Duration	50 minutes
Keywords	Contextualized Situations Cubic Functions Full Class Discussion Production of Equations Production of Graphs Small Group Work

Activity Plan:

1. Students will be given a handout about two people who bought different boxes of clay. (Handout Page 1)

Alyssa's clay came in a box that was shaped like a cube.

Target function: $y = x^3 = x*x*x$

Bernie bought a box that had a square base, but the height was twice the length of one of the sides of the base.

Target function: $y = 2x^3 = (2*x)*x^2$

The students will come up with equations and graphs for each persons situation. (Handout Page 2)

2. After the class has been given time to work in small groups, the discussion can become a class discussion.

Handout: Box of Clay Activity

(Page 1)

Name: _____ Date: _____

Two people, Alyssa and Bernie, each bought a full container of clay for an art project.

Alyssa's clay came in a box that was shaped like a cube.

Bernie bought a box that had a square base, but the height was twice the length of one of the sides of the base.

Sketch Alyssa's box of clay and Bernie's box of clay. Show which sides are the *same* lengths and which sides are *different*.

What is the formula for the amount of clay that Alyssa bought as a function of the length of one side of the base of the box?

What is the formula for the amount of clay that Bernie bought as a function of the length of one side of the base of the box?

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(Page 2)

Name: _____ Date: _____

Graph how much clay each person bought as a function of the length of one side of the base of the box.

