

## Algebra Essentials and Applications Internet Activity

### ***ME1 Ceramics Investigations***

1. What are the dimensions of the teapot?

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2. Suppose that the lid to the teapot box will be made separately. You must design an open-top box in which the teapot barely fits. What are the dimensions of the cardboard you use?

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3. Let  $x$  be the side length, in inches, of the square flap. Write a polynomial for the volume,  $V$ , of the open-top box.

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4. Evaluate  $V$  when  $x$  is equal to the height of the teapot.

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5. The surface area of the open-top box is equal to the area of the cardboard minus  $4x^2$ . Write a polynomial for the surface area,  $S$ , of the open-top box.

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6. Evaluate  $S$  when  $x$  is equal to the height of the teapot.

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7. What are the dimensions of the bowl?

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8. Evaluate  $V$  and  $S$  when  $x$  is equal to the height of the bowl.

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