

Name _____

Estimate Volume

I Can use an everyday object to estimate the volume of a rectangular prism.

Florida's B.E.S.T.

- **Geometric Reasoning** 5.GR.3.1, 5.GR.3.2, 5.GR.3.3
- **Mathematical Thinking & Reasoning** MTR.1.1, MTR.3.1, MTR.4.1, MTR.5.1, MTR.6.1, MTR.7.1

Investigate

Izzy is mailing 20 boxes of crayons to a children's-education organization overseas. She can pack them in one of two different-sized shipping boxes. Using crayon boxes as a cubic unit, about what volume is each shipping box, in crayon boxes? Which shipping box should Izzy use to mail the crayons?

Materials ■ rectangular prism net B ■ 2 boxes, different sizes

- Cut out, fold, and tape the net to form a rectangular prism. Label the prism "Crayons." You can use this prism to estimate and compare the volume of the two boxes.
- Using the crayon box that you made, count to find the number of boxes that make up the base of the shipping box. Estimate the length to the nearest whole unit.

Number of crayon boxes that fill the base:

Box 1: _____ Box 2: _____

- Starting with the crayon box in the same position, count to find the number of crayon boxes that make up the height of the shipping box. Estimate the height to the nearest whole unit.

Number of layers:

Box 1: _____ Box 2: _____

Box 1 has a volume of _____ crayon boxes

and Box 2 has a volume of _____ crayon boxes.

So, Izzy should use Box _____ to ship the crayons.



Draw Conclusions

1. **MTR** Explain how you estimated the volume of the shipping boxes.

2. **MTR** If you had to estimate to the nearest whole unit to find the volume of a shipping box, how might you be able to ship a greater number of crayon boxes in the shipping box than you actually estimated? Explain.

Make Connections

The crayon box has a length of 4 inches, a width of 3 inches, and a height of 1 inch. The volume of the

crayon box is _____ cubic inches.

Using the crayon box, estimate the volume of the shipping box at the right in cubic inches.

- The box at the right holds _____ crayon boxes in each of _____ layers, or _____ crayon boxes.
- Multiply the volume of 1 crayon box by the estimated number of crayon boxes that fit in the box at the right.

$$\underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

So, the volume of the shipping box at the right

is about _____ cubic inches.

