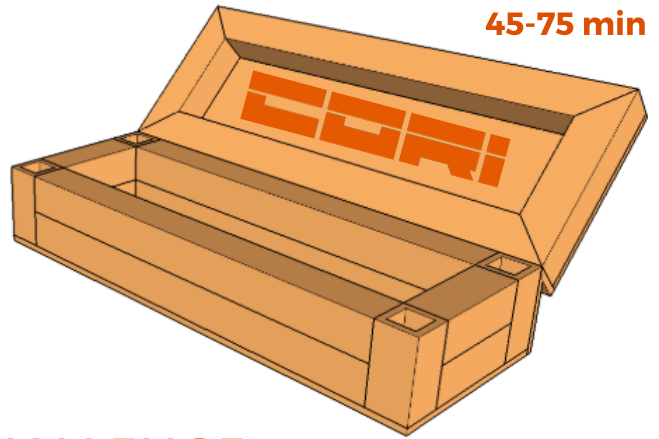## CORI PENCIL BOX

CORI lessons are designed to use math skills through applied experiences. The CORI-Box lesson plan challenges students with the following math concepts: Volume, Measurement and Estimation. Design and construct a pencil box to fit your favorite pencils, markers and erasers. Students will learn to measure, construct and decorate their very own pencil box using CORI beams.

Build Time 45-75 min

DESIGN CHALLENGE

CORI-Box Design Challenge Prompt: Using CORI beams, design and construct a pencil box with the appropriate width, length and height to fit your standard pencil size of 7.5" while leaving room for otheritems such as erasers, expo markers, and pens. You will need to cut the CORI beams at appropriate dimensions, as well as precise angles for successful fit. Good luck Eduneers!

MATH FOR EVERYONE!

The CORI-Box starter kit series presents math problems in an experiential way. The CORI-Box lesson integrates common core math standards 3rd through 8th grade. Below are example math problems and prompts to facilitate applied math conversations with students. The math section will have the following components for teachers to use with students.

- Math prompts that directly apply with student CORI designs and creations
- Sample math word problems
- Additional open education resources related to lesson plan
- Reflection questions

FOUNDATIONAL MATH CHALLENGE

CORI Area, Perimeter and Volume?

1. What is the perimeter of the CORI Pencil Box top component based on your measurements?
2. What is the area of the CORI-Box top piece based on your measurements?
3. What is the volume of the CORI-Box based on your measurements?

Sample Word Problem

- What is the volume of a pencil box with a length of 7 inches, width of 9 inches, and height of 4 inches?
- Find the volume of the following rectangular prism on the right.

W = 3in
L = 11in
H = 5in
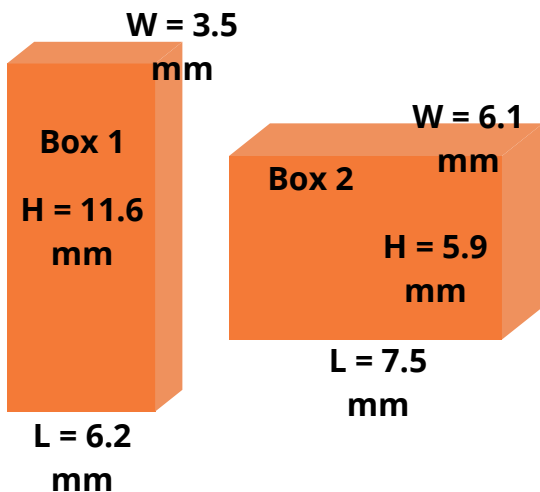
CORI

STEPPING IT UP MATH CHALLENGE

CORI Volume

1. Based on the volume calculated from your measurements, how many cubes with dimensions of 1" x 1" x 1" can fit into your pencil box?
2. Which rectangular prism has a larger volume on the left? Why? Show your math.

W = 3.5 mm

Box 1

H = 11.6 mm

L = 6.2 mm

W = 6.1 mm

Box 2

H = 5.9 mm

L = 7.5 mm

Sample Word Problem

An aquarium tank has a height of 24 inches, length of 35 inches, and width of 8.5 inches. A solid aquarium treasure box is placed inside the aquarium with a height of 3.5 inches, length of 4.25 inches, and width of 2.5 inches. The tank is filled with water. What is the volume of the water in the aquarium?

FOLLOW UP DISCUSSION AND QUESTIONS

1. Did the pencils fit into your CORI-Box on the first try?
2. How do you rate your teamwork 1 through 5? (1 - No Cooperation to 5 - Excellent Teamwork)
3. What other items could you build with the CORI-Box design as the foundation?
4. What are real life situations that CORI-Box could be used if they were real steel beams?
5. What careers do you think use volume in their profession?

ADDITIONAL OPEN EDUCATION RESOURCES

1. Basic Volume and Surface Area from Khan Academy: https://www.khanacademy.org/math/basic-geo/basic-geo-volume-sa
2. Volume and Surface Area from Open Education Resources (OER): https://www.oercommons.org/courseware/lesson/2484/overview
3. National Council of Teachers for Mathematics: https://www.nctm.org/Classroom-Resources/Illuminations/Interactives/Cubes/

#CORICREATE COMMUNITY

Our growing #CoriCreate Community is a place to share your designs, ideas and connect with other Cori enthusiasts. We would love to have you share your projects to the various social media platforms using our hashtag #CoriCreate. See you online!