Surface Area of a Rectangular Prism

@BootstrapWorld

Surface Area

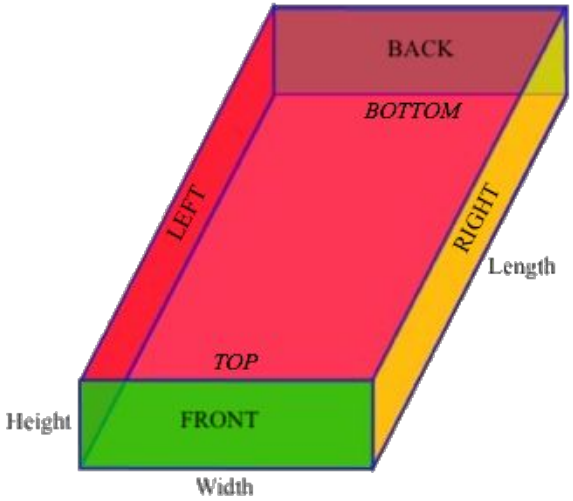
Turn to Surface Area of a Rectangular Prism - Explore.

- What do you picture in your mind when you hear ***rectangular prism***?
- What do you picture in your mind when you hear ***surface area***?

Surface Area

Now, open the Surface Area of a Rectangular Prism Starter File in a new tab, save a copy, and click "Run".

Type `prism` into the Interactions Area to see an image of a rectangular prism. What do you notice about the prism?



Surface Area

- *Faces* are the flat surfaces on the outside of a solid figure.
- *Edges* are the line segments where the faces meet in each of the three dimensions.
- The *surface area* of a prism is calculated by adding the areas of its faces.

Surface Area

- Go to PART 1 and look at the definition for `front` and `back`. Type `front` into the Interactions Area.
- What do you get?

`Front` has been defined to draw a rectangle whose dimensions are width and height.

- Write definitions for each of the other faces of the prism!
- Click "Run" and test each of them in the Interactions Area to make sure that they match the prism you started with.

Surface Area

- Go to PART 2 in the code. Type `print-imgs(faces)` into the Interactions Area.
- How many rectangles do you see?

The code in PART 2 says `faces = [list: front, back, ]`, which defines `faces` to be a list of values.

This list will include all of the faces of the prism, but right now it only includes `front` and `back`.

- Add the names of each of the remaining faces to the list.

(Order doesn't matter - but be sure to put commas in between list items, and do not use the word “and”.)

Surface Area

- When you're ready, click "Run" and type `print-imgs(faces).`
- What do you Notice? What do you Wonder?
- Do you have enough shapes to cover all of the faces of the prism?
- Now, read the comments in PART 3 of the file to learn how to print the faces to build your prism.

Surface Area

1. Cut out and tape together the images you defined to form a 3D model of a rectangular prism.
2. Use your model to calculate the surface of the figure.
3. Turn to PART 4 in the Surface Area of a Rectangular Prism Starter File and define `surface-area` using length, width, and height.

Surface Area

- What code did you write to define `surface-area`?
- How many different versions of the definition can we generate as a class?
- How did building the prism help you to understand surface area?
- How did writing the code for surface area help you to understand surface area?