
2. Play around with the simulation. List what you can do.

3. Exploring different materials and different sizes.
   a. Which materials sink? ________________________________
   b. Which materials float? ________________________________
   c. In your words, what do the following labels mean?
      mass: ________________________________
      volume: ________________________________
   d. What happens when you make the block bigger or smaller? [Use a complete sentence to explain.]
      Does the mass change? _______ Why or why not?
      ____________________________________________
      ____________________________________________
      ____________________________________________
      ____________________________________________
      Does the density change? _______ Why or why not?
      ____________________________________________
      ____________________________________________
      ____________________________________________
      ____________________________________________
      Does the sinking or floating change? _______
4. Design your own block. Experiment with making your own block out of your own material with “My Object.”
   a. What properties of the block can you change?

   b. What makes a block more likely to sink? How does this change the block’s density?

   c. What makes a block more likely to float? How does this change the block’s density?

   d. Try to create a block with a very high density.

      Do you think your block will sink or float? __________

      What is your block’s volume?__________ What is your block’s mass? __________

   e. Try to create a block with a very low density.

      Do you think your block will sink or float? __________

      What is your block’s volume?__________ What is your block’s mass? __________

5. Your friend has three blocks (A, B, and C) of the same size, but they each float differently in water.
a. What do you think makes them float differently?

b. Using “My Object”, check your answer by playing with your block so it behaves like A, B, and C. Which slider did you need to change?__________________________

Could A, B, and C be made out of the same material?_________Why or why not?


c. Order the objects from most to least mass: ________________________________

6. Test your ideas using the objects of “same volume.”
a. All of these blocks are the same______________.

b. Besides being different colors, the blocks also have different______________________________.

7. Explore objects of the “same mass.”
a. All of the blocks have a mass of______________kg.

b. All of the blocks have different colors and different______________________________.

c. Observe how they float. What do you notice? ________________________________

______________________________

______________________________

d. If all of the blocks have the same mass, why do you think some are floating and some are sinking?

______________________________

______________________________

______________________________
8. Mystery Blocks

<table>
<thead>
<tr>
<th>Object</th>
<th>Mass (kg)</th>
<th>Volume (L)</th>
<th>Density (kg/L)</th>
<th>Sink or Float?</th>
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<tbody>
<tr>
<td>A</td>
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<td>B</td>
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