



Density Column Exploration

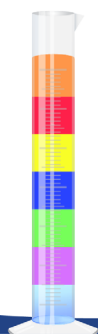
Grades
6-8

Student Activity Workbook

Name: _____

Date: _____

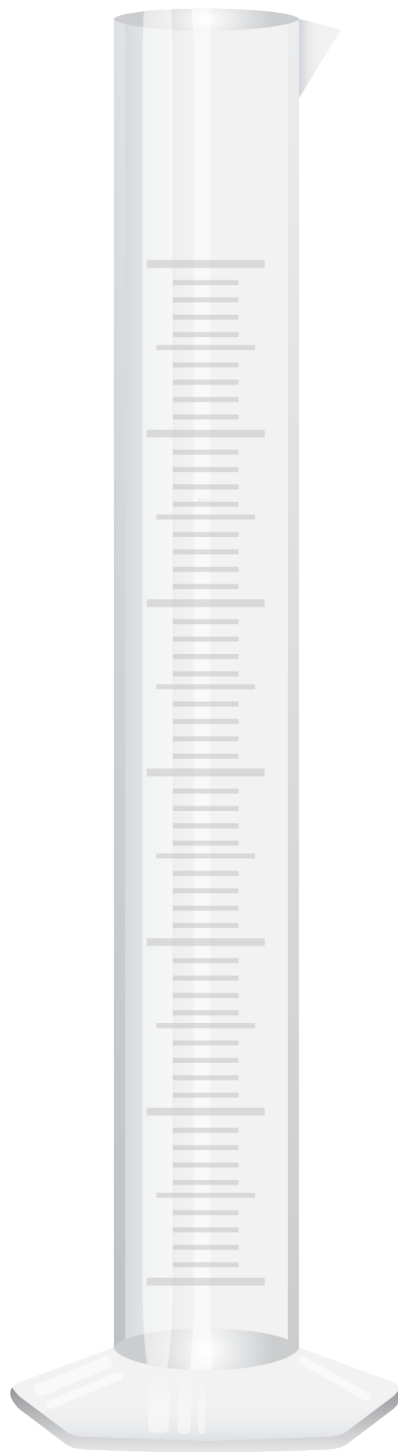
Engineering Notebook



Seaworthy STEM™ in a Box Series

Density Column Exploration

I Part I: Sketch and label the Density Column from the Demonstration.



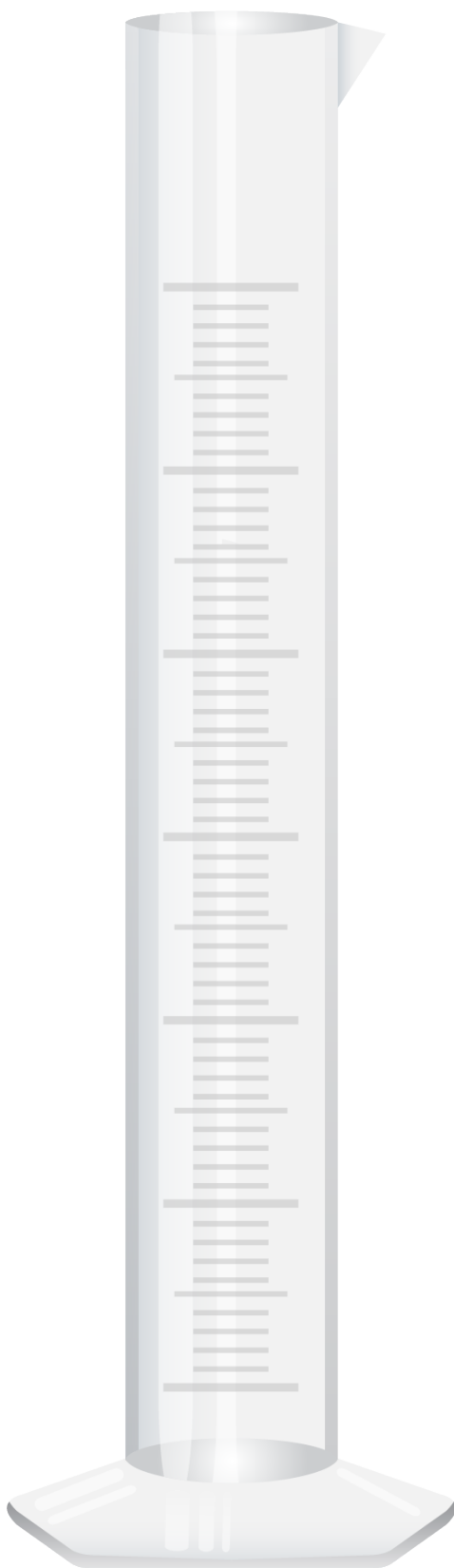
- 2** Part 2: Prepare 4 different types of solutions. You can experiment with changing the temperature and adding salt and sugar. Use food coloring to tell them apart.

Cup	Color	Description
A		
B		
C		
D		

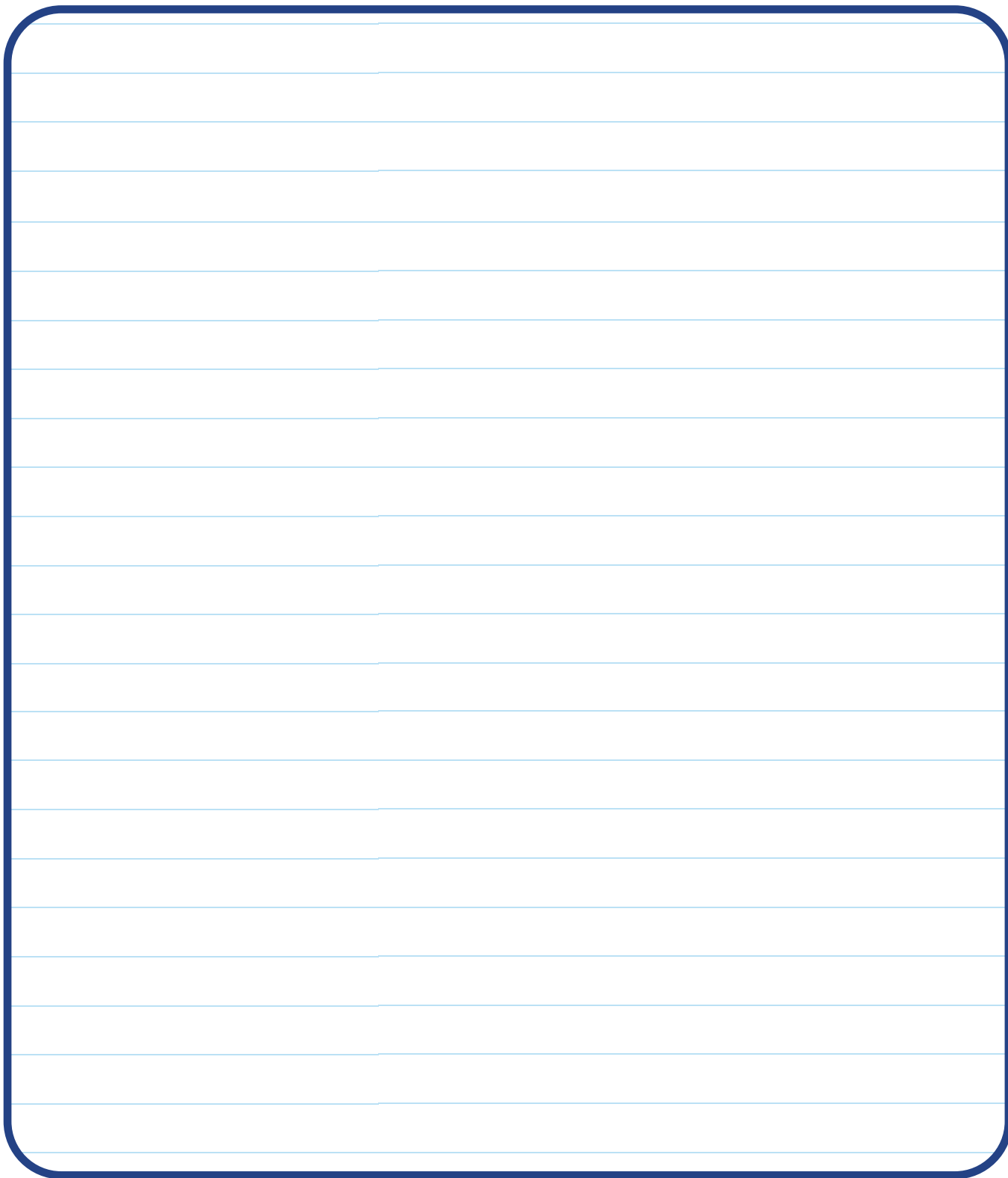
- 3** Part 3: Now try layering different combinations. Which combinations are stable? Which ones mix?

Top	Bottom	Result?

4 Part 4: Try to stack at least 4 layers in your tube. Sketch your result here.



- 5 Navy Design Challenge:** The Navy wants to set sonar buoys at different depths so they can detect intruders within your 40 ml column of liquids. It is your mission to find a combination of fluids and solids that will allow you to place one buoy at 10ml, one buoy at 20 ml, and one at 30ml.



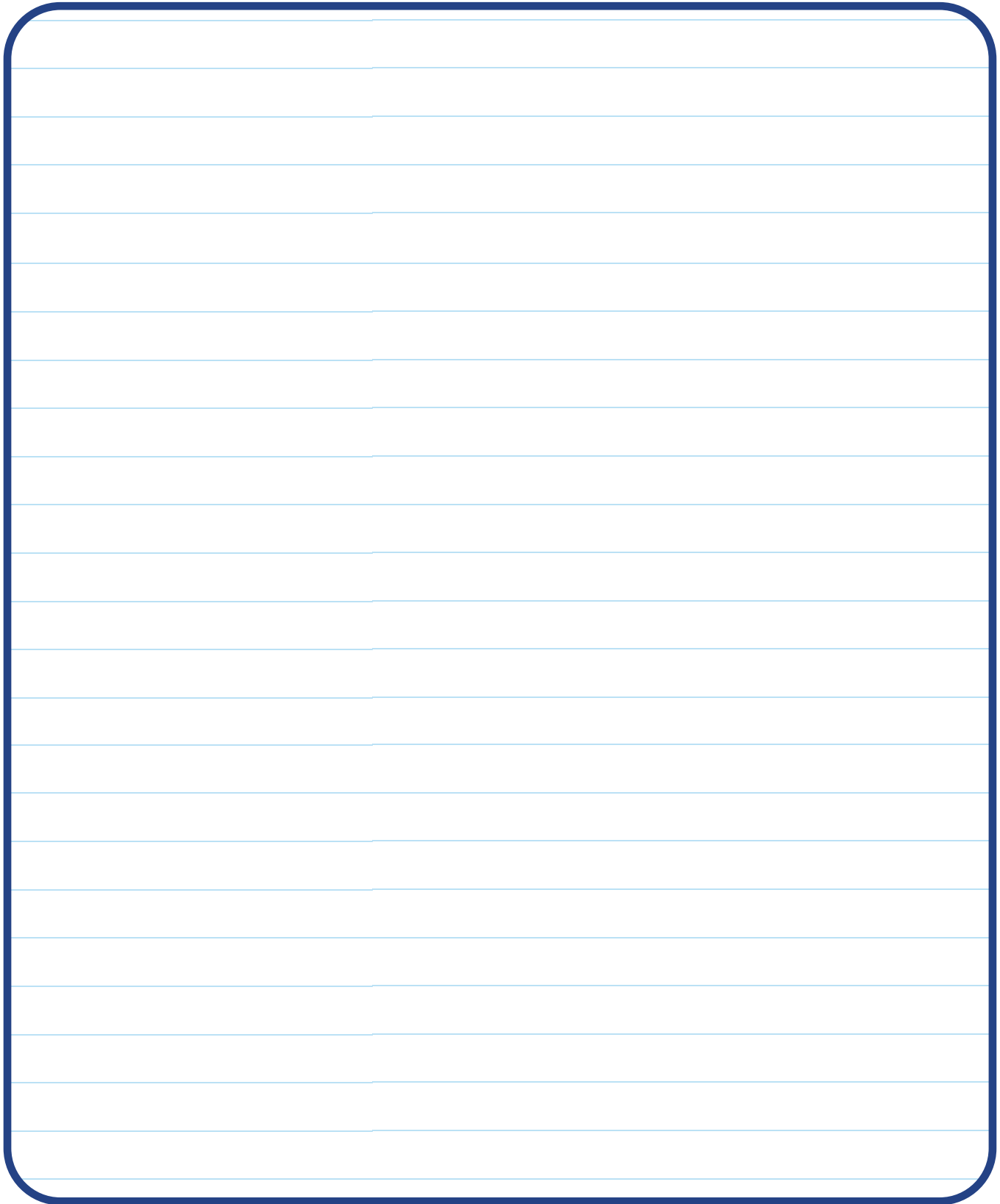
- 6** Use your graduated cylinder and digital scale to calculate the densities of your objects (including your fluids). Remember that Density equals Mass/Volume. What do you think your density column will look like once you put all of your objects in the graduated cylinder? Draw your prediction in the box below? Be sure to include labels for both the fluids and the objects.



- 7** Draw a labeled picture your completed density column.



- 8 Did your density column turn out as planned? Why? Why not? How is knowing the densities of objects useful in the real world?



#SeaworthySTEM

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