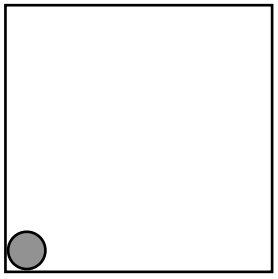
LAD B1 (pg 1 of 2) Compressibility and Fluidity

Name_____Per___

Compressibility − Observing the macroscopic level, describing the particulate level.

1. Can you compress the edge of the desk top between your fingers?

Side view

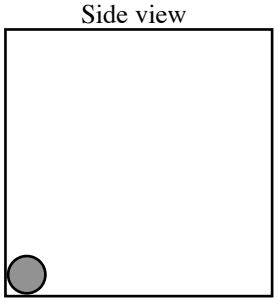


2. Give a **nanoscopic** explanation as to why you can't compress the solid desk material. Make a sketch with 15-20 particles to support your answer.

3. Can you squeeze the syringe with water?

4. Give a **nanoscopic** explanation as to why you can't compress the water. Make a sketch with 15-20 particles to support your answer.

Side view

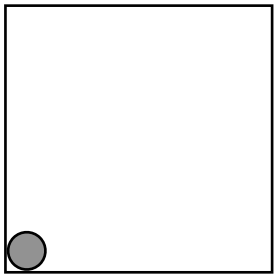


5. Is your syringe with air in it, full?

6. Can you squeeze the syringe with air?

7. Give a **nanoscopic** explanation as to why you can compress the air. Make a sketch with 15-20 particles to support your answer.

Side view



 Compressibility and Fluidity

Fluidity − Observing the macroscopic level, describing the particulate level.

8. The first gas is colorless, and difficult to see, what observation tells you that the gas was actually poured down the ramp?

- You eat carbon compounds (sugar is a carbohydrate) and you breath: $C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O$
- Wax is a hydrocarbon: $C_{25}H_{25} + O_2 \rightarrow CO_2 + H_2O$

9. Is this first gas more or less dense than the air? How do you know?

10. The second gas is also colorless, and difficult to see, what observation tells you that the gas was actually poured down the ramp?

- Hexane is a hydrocarbon: $C_6H_{14} + O_2 \rightarrow CO_2 + H_2O$

11. Is the second gas more or less dense than the air? Again, how do you know?

12. Why did the flame travel up the ramp?

13. Do liquids flow? Do solids flow?

Let's go back to the front page to develop a nanoscopic explanation for the fluidity or lack thereof for solids, liquids, and gases.