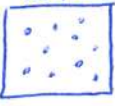
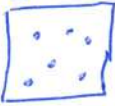
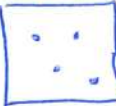
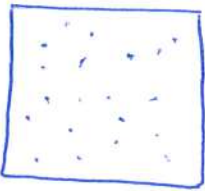


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## Video Notes: Dalton's Law of Partial Pressures

### BIG IDEAS

### DETAILS

<p><b>Pressure &amp; Moles</b></p>	<p>Rearranged to solve for pressure, the ideal gas law is</p> $P = \frac{nRT}{V}$ <p>If temperature and volume are constant, <math>P = \frac{n}{1}</math> times a constant. So the 2-variable relationship between <math>P</math> and <math>n</math> is <u>directly</u> proportional. So doubling the moles <u>doubles</u> the pressure.</p>
<p><b>Combining Gases</b></p>	<p>Imagine you have 3 containers as shown. Sketch/label them:</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;"> <p>A 10 moles</p>  <p><math>P_A = 1.0 \text{ atm}</math></p> </div> <div style="text-align: center;"> <p>B 6 moles</p>  <p><math>P_B = 0.6 \text{ atm}</math></p> </div> <div style="text-align: center;"> <p>C 4 moles</p>  <p><math>P_C = 0.4 \text{ atm}</math></p> </div> </div> <p>If the gases from B &amp; C are added to container A, you get:</p> <div style="text-align: center; margin-top: 20px;">  <p>20 moles <math>P = 2.0 \text{ atm}</math></p> </div> <p>Remember - the TYPE of gas does <u>NOT</u> matter! Each gas in a mixture acts as if it were alone.</p>
<p><b>Partial Pressure</b></p>	<p>Partial pressure is defined as the pressure exhibited by each <u>one</u> of the gases in a mixture if they were in the container <u>alone</u>.</p> <p>Dalton's law of partial pressures tells us how they combine to create the total pressure:</p> $P_{\text{total}} = P_A + P_B + P_C$ <p>In words: the <u>total</u> pressure of a mixture of gases is <u>equal</u> to the <u>sum</u> of the <u>partial</u> pressures</p>
<p><b>SUMMARY</b></p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>