Do Now

- Hand in your lab if you have not done so already.
- Check the homework.
- Get a whiteboard.

Quiz Review

- Boyle's, Charles' & Gay-Lussac's Laws.
- Combined Gas Law.
- Ideal Gas Law.
- Graphs.
- Conceptual Understanding.

Solve, Name and Graph the Relationship

- A closed, rigid, 3.7L container is at STP. The pressure is 1.2atm at 37°C. If the temperature increases to 55°C, what is the new pressure? Answer in kPa.

Solve, Name and Graph the Relationship

- Calculate the volume of a gas at a pressure of 100kPa if its volume at 1.2x10^(2)kPa is 1.5x10^(3)ml. Answer in liters.

Solve, Name and Graph the Relationship

- A massless balloon contains 14g of nitrogen gas and has a volume of 11.2L. at STP. What would the balloon weigh at STP if it were 42L?

Solve, Name and Graph the Relationship

- A ball on the surface of a pool (P=101.3kPa) is 2.3L. When a diver takes it to a depth of 5m, the pressure is 75.3kPa. What is the volume of the ball?

Quizzes

- I am handing back the quizzes from last Friday.
- Check IC that the grade posted is correct.
- I will take questions after all quizzes have be returned.

History of Gas Laws
0:00-5:00

Pick a Card

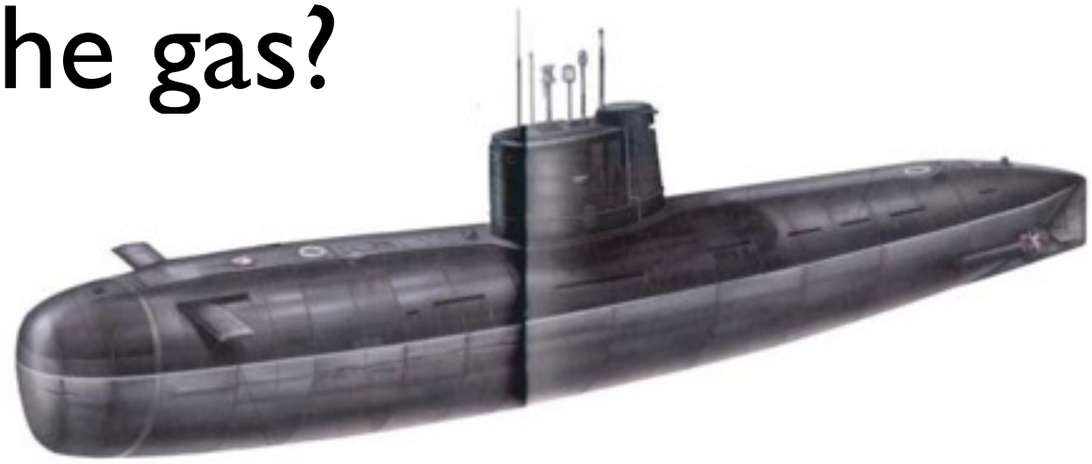
- Find the person (1) with your card.
- Sit with them.
- Leave the whiteboards.

Write the conditions for an ideal gas. Think of Avogadro's hypothesis. Use these conditions to solve for R. Label with the correct units.

___g of oxygen gas occupy a __ml balloon. If the pressure is ___psi, what is the temperature of the balloon?

How many moles of a gas are in a container when T=___°K, P=___mmHg, and V=___L

A submarine contains 11,000mol of gas at STP. If the sub dives to where the pressure is ___kPa and temp is -___°C, what is the volume of the gas?



Demo

Short answer: Why does heating a gas in a closed container increase the pressure?

- Write it on your white board.
- Draw a before and after picture.
- Explain it to the group next to you.

What is a physical property that is shared with both liquids and gasses. What is a difference?

- Write the property.
- Describe (in words) why these similarities and differences.

Ideal Gas Problems: Crash Course Chemistry #13

I've got problems... gas problems... I mean gas law problems

Fire Syringe

Fire from Air