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Crash Course - PHYSICS 46 Episode Series Bundle

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Crash Course Physics #20: Temperature

Name: _____ Date: _____

You can access the video here → https://youtu.be/6BHbf_gB0k0?si=hEaa3xmO8hJuckWn

- _____ is a measure of the average kinetic energy in a system.
- When heat is no longer transferred between two systems, they are in _____.
- An increase in temperature usually causes a solid to undergo _____.
- The equation for linear expansion involves the coefficient of linear expansion, initial length, and _____.
- The Greek letter used to represent the coefficient of linear expansion is _____.
- The purpose of _____ joints in bridges is to allow materials to expand and contract with temperature changes.
- Volume expansion affects all three dimensions and uses the coefficient represented by the Greek letter _____.
- A(n) _____ gas is a hypothetical gas that follows specific rules and behaves predictably.
- _____ Law states that if the temperature is constant, increasing pressure decreases volume.
- _____ Law says that increasing the temperature of a gas (while pressure stays constant) increases its volume.
- Gay-Lussac's Law says that increasing temperature while keeping volume constant increases the _____.
- The combined equation that relates pressure, volume, temperature, and amount of gas is called the _____.
- The letter "n" in the ideal gas law represents the number of _____.
- A mole is a unit used to count particles or molecules, equal to _____.
- The universal gas constant, represented by the letter _____, remains the same for any ideal gas (in consistent units).

Crash Course Physics #20: Temperature KEY

- Temperature** is a measure of the average kinetic energy in a system.
- When heat is no longer transferred between two systems, they are in **thermal equilibrium**.
- An increase in temperature usually causes a solid to undergo **thermal expansion**.
- The equation for linear expansion involves the coefficient of linear expansion, initial length, and **temperature change**.
- The Greek letter used to represent the coefficient of linear expansion is **alpha**.
- The purpose of **expansion joints** in bridges is to allow materials to expand and contract with temperature changes.
- Volume expansion affects **all three dimensions** and uses the coefficient represented by the Greek letter **beta**.
- A(n) **ideal gas** is a hypothetical gas that follows specific rules and behaves predictably.
- Boyle's Law** states that if the temperature is constant, increasing pressure decreases volume.
- Charles's Law** says that increasing the temperature of a gas (while pressure stays constant) increases its volume.
- Gay-Lussac's Law says that increasing temperature while keeping volume constant increases the **pressure**.
- The combined equation that relates pressure, volume, temperature, and amount of gas is called the **ideal gas law**.
- The letter "n" in the ideal gas law represents the number of **moles**.
- A mole is a unit used to count particles or molecules, equal to **6.02×10^{23}** .
- The universal gas constant, represented by the letter **R**, remains the same for any ideal gas (in consistent units).

15 Questions

Answer Key Included

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