

Unit 8: The Gas Laws

#2.5 Gas Laws Particle Pictures

Explain the following scenarios using either descriptions or pictures as needed for your justification.

- In the space below the prompt, draw a picture of the gas molecules before and after the change is made. The change in condition should be visible.
- Below the pictures, give a short explanation of your drawings in words.

List of variables: pressure, volume, temperature, number of molecules, velocity

1. A rigid canister of propane gas is placed into an oven at 330°C .

CANISTER BEFORE

CANISTER AFTER

Explanation of drawings :

2. A partially filled balloon is taken to the top of a mountain, where less gas molecules are present in the atmosphere.

BALLOON BEFORE:

BALLOON AFTER:

Explanation of drawings :

3. The piston of a gas engine compresses at a constant temperature.

PISTON BEFORE:

PISTON AFTER:

Explanation of drawings :

4. A cork is placed on top of a flask, and the temperature of air inside the flask is greatly decreased.

FLASK BEFORE:

FLASK AFTER:

Explanation of drawings:

5. A nail gets stuck in the tire of a car. Over time, the tire becomes flat. Give an explanation for this problem.

TIRE BEFORE:

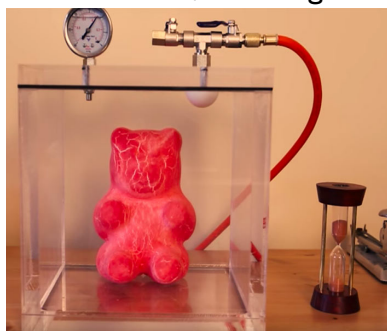
TIRE AFTER:

Explanation of drawings:

6. You accidentally kept your favorite basketball outside during the freezing winter months. Explain what happens to the size of the basketball over the months outside in the cold weather.



7. A giant marshmallow bear is placed inside of a vacuum? Explain what will happen next after the vacuum has been turned on, removing the air from around the bear.



8. Two balloons are placed on a table. One contains helium gas (He) and the other contains carbon dioxide (CO_2) [picture on left]. Over time, the balloons change in size [picture on the right]. Using the concept of effusion, which balloon contains helium and which balloon contains CO_2 ? Explain your answer.

