Explain Scientific Phenomenon

DOLACEE

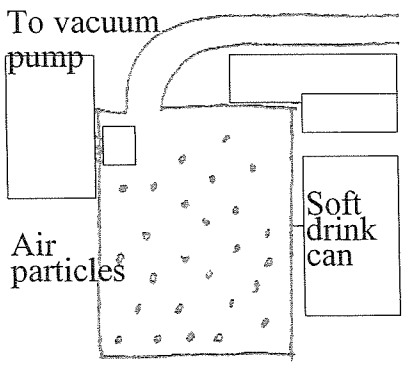
Development of Language across the Curriculum for English-medium Education

Aim

- Teach students to write a passage to explain scientific phenomenon
- Build up student's logical mind

Example

- The power of Air Pressure
- A soft drink can is connected to a vacuum pump



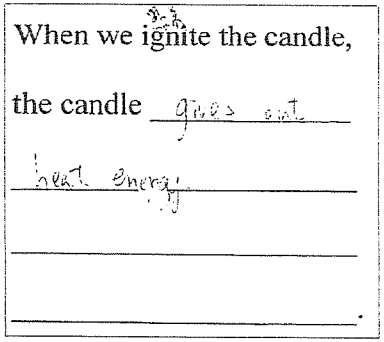
What's going on here?

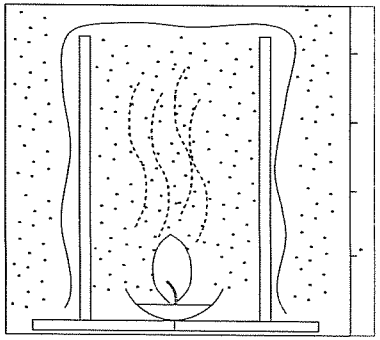
Student's work (B)

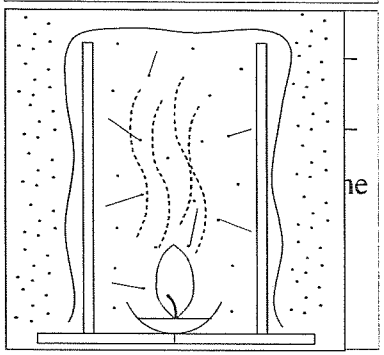
When we ignite the candle,

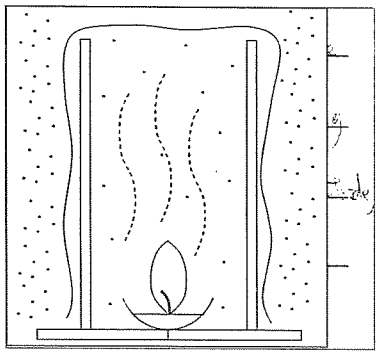
the candle gives out

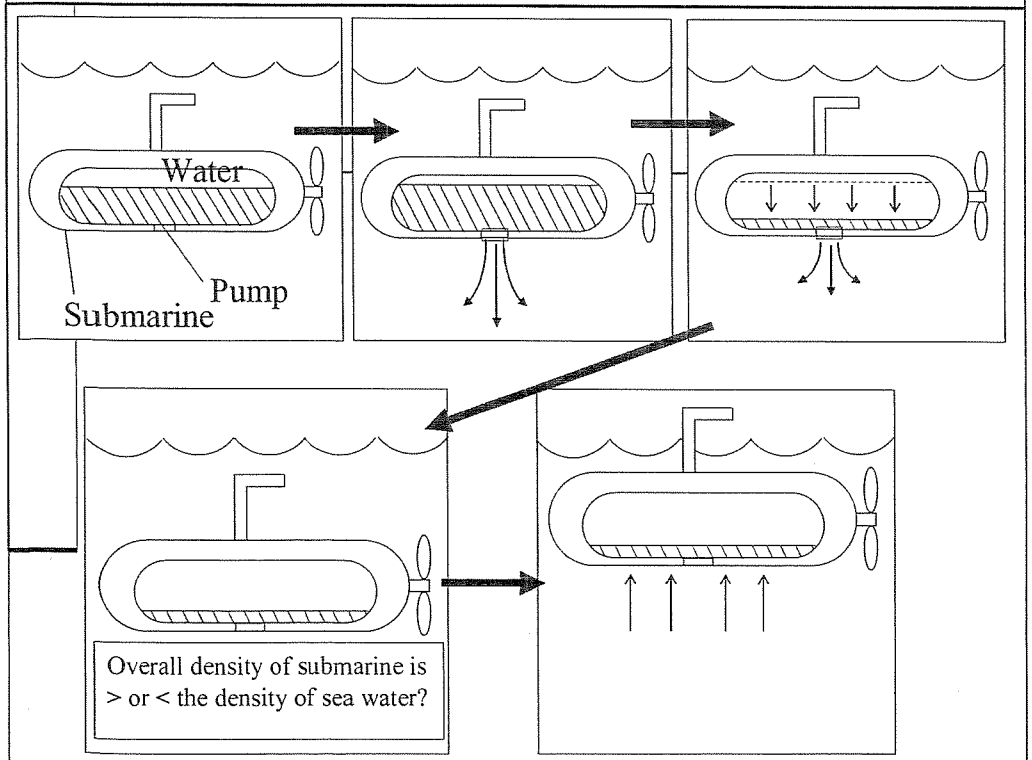
heat energy







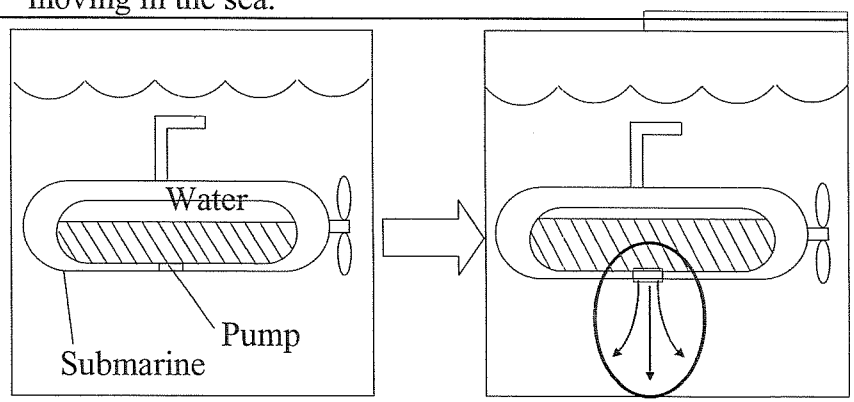




Density - Submarine

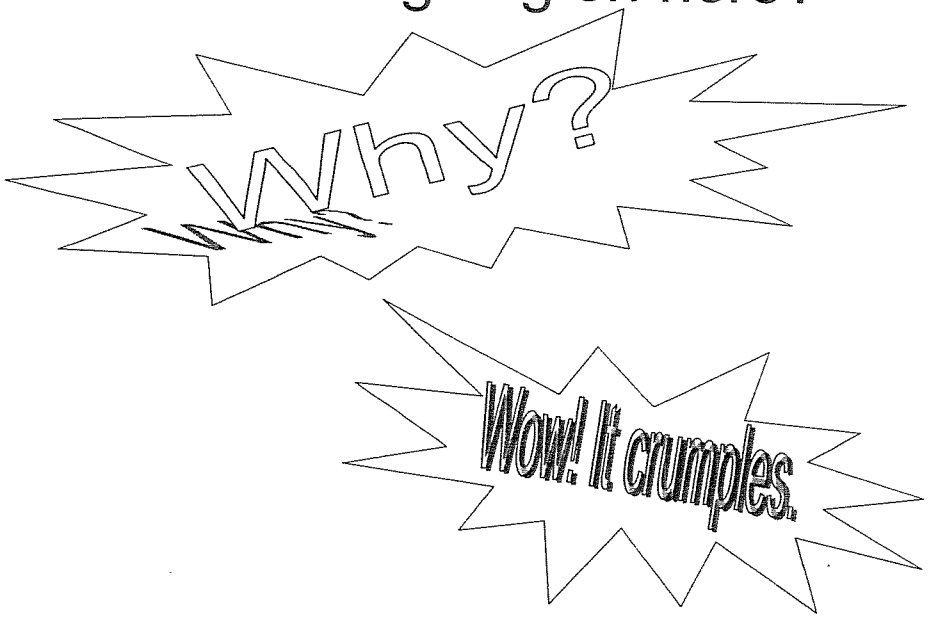
Explanation Exercise 4

A submarine with same density as sea water is moving in the sea.



When the pump is turned on, it draws water away from the submarine. .....

What's going on here?



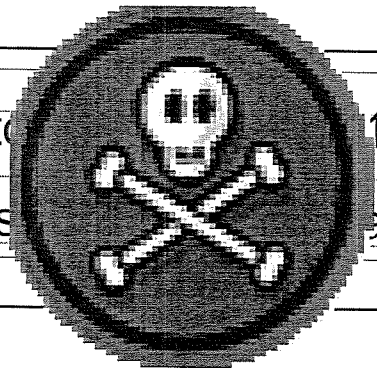
So.....

- **Make use of comic**

to help students to understand the phenomenon and write a passage on it.

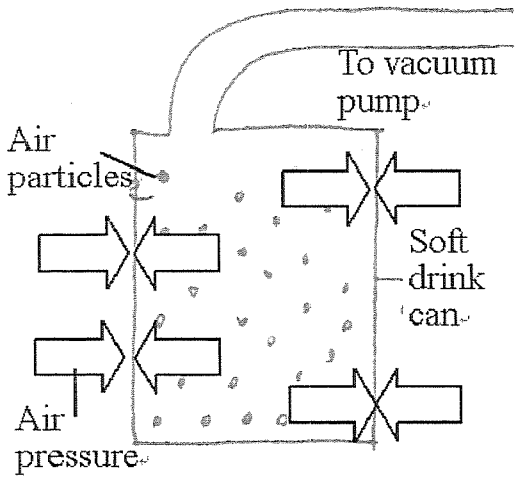
Explain this phenemon

This is t 1
students age on it.



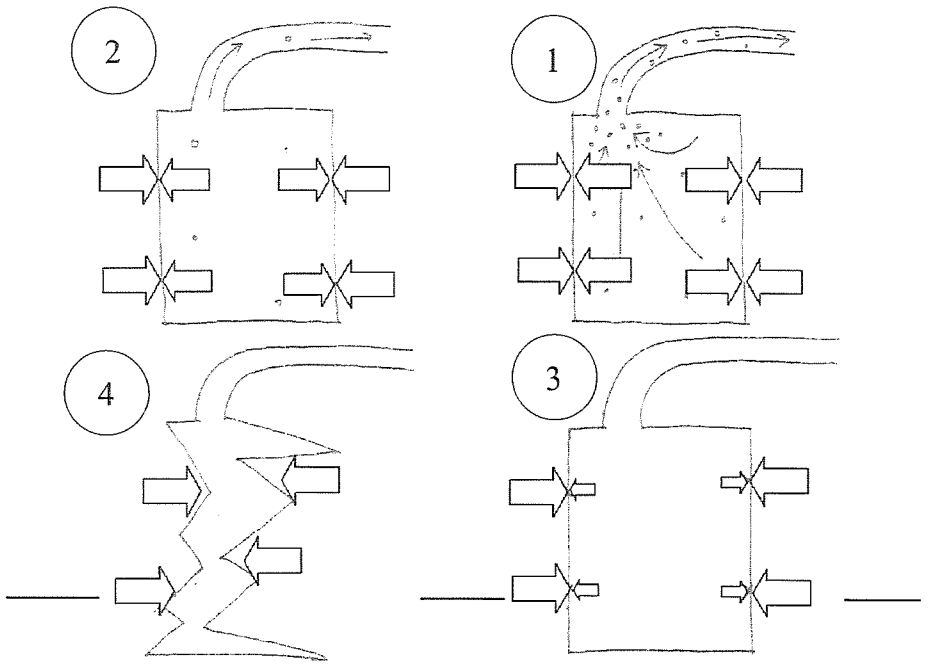
Explanation Exercise 1

Power of Air Pressure

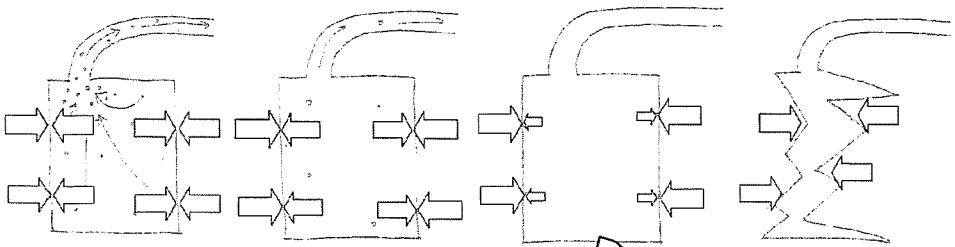


Initially, the air pressure inside and outside the can are equal.

Arrange the pictures in correct order



Write down some keywords for each picture



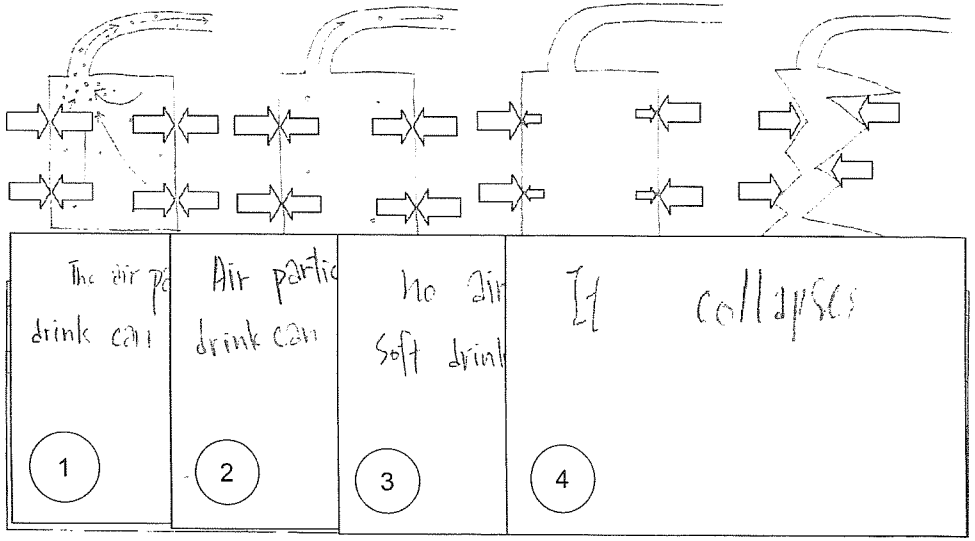
Pumped away

Decrease

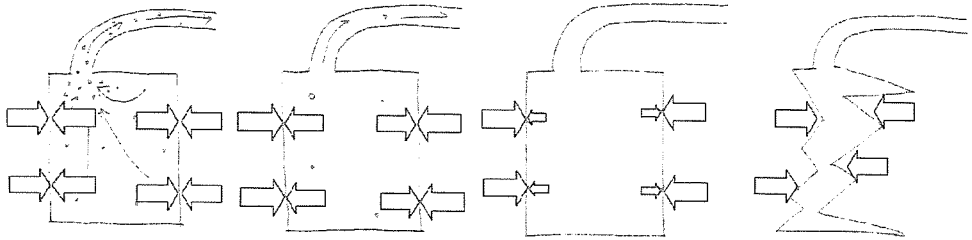
Push

Crumple

Student's work (A) – without training



Student's work (B) – without training

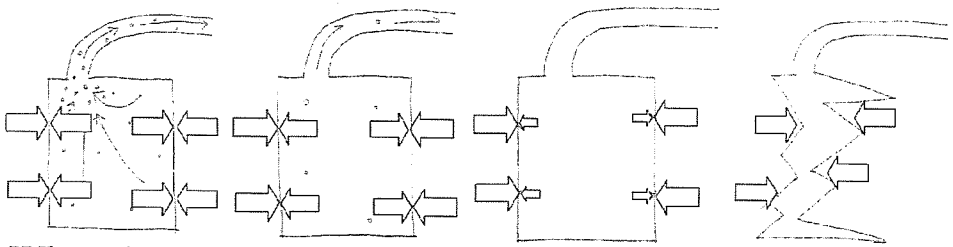


?

?

The gas ... The wall of the can cannot ... can bec... withstand the air pressure ... the air outside.

Describe the changes in each picture



When the vacuum pump is turned on, it draws air away from the can.

As the air is pumped away from the can, the amount of air particle in the can decreases.

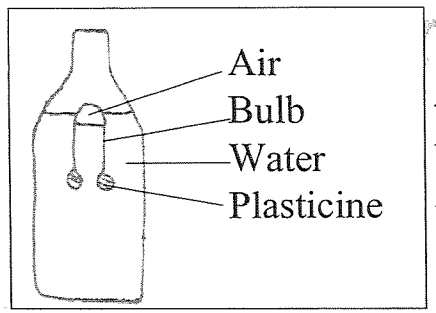
As the amount of air particle in the can decreases, the air pressure outside is greater than the air pressure inside.

The greater air pressure outside compresses the can and the can crumples.

Explanation Exercise 2
Beauty of Density

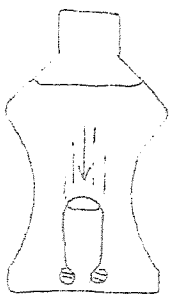
Experiment Demonstration

- Video about the experiment will be added later



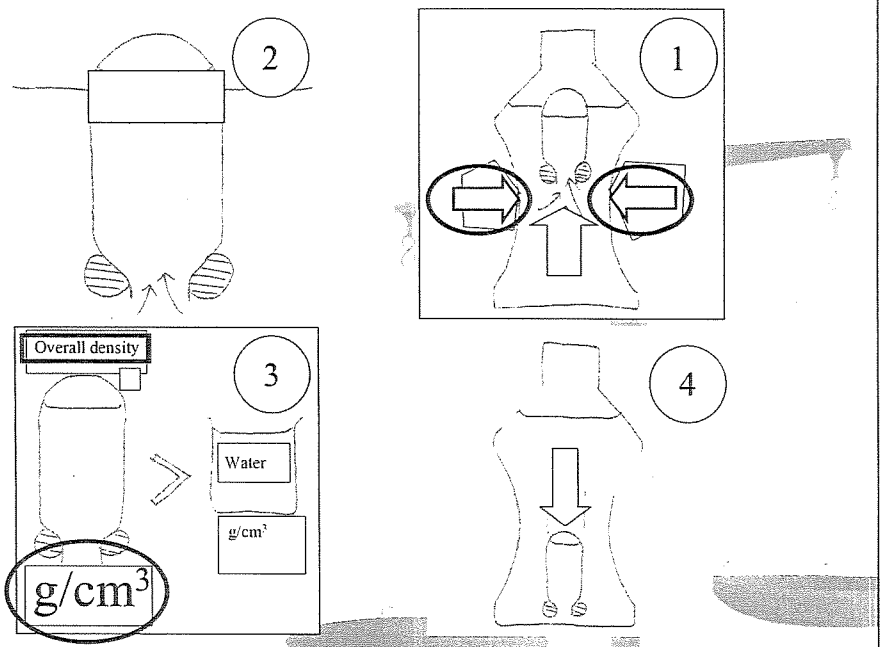
A bulb filled with water floats on the water surface.

Student's work (A)



As the density of the bulb is greater than the density of the water, the bulb sink.

When we squeeze the bottle, water rushes into the bulb.
As water rushes into the bulb, the air is compressed and the amount of water inside the bulb increases.
As the amount of water inside the bulb increases, the overall density of the bulb increase and higher than the density of water.
The higher density of the bulb, makes it move downward.



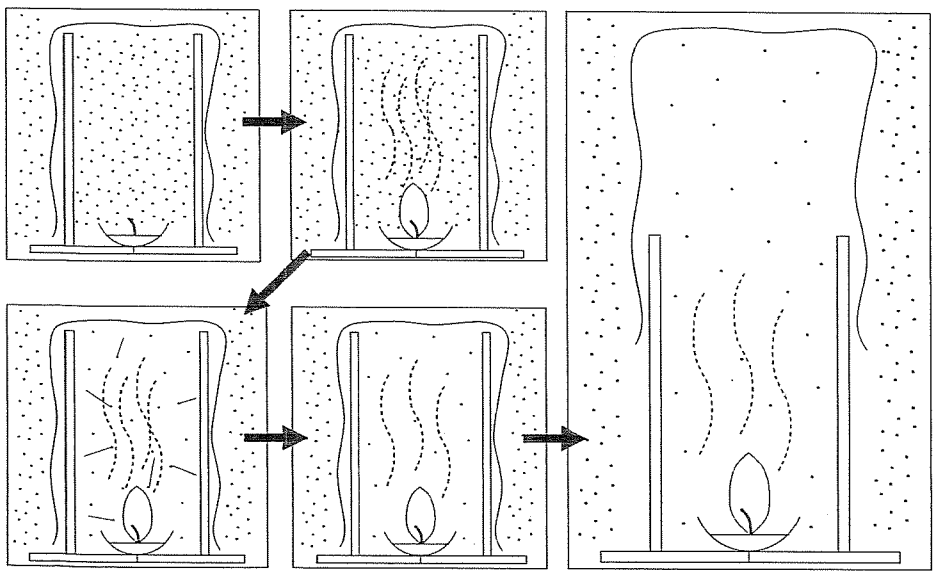
Student's work (B)

As the amount of water inside the bulb increases, the overall density higher than the water, the bulb sink.

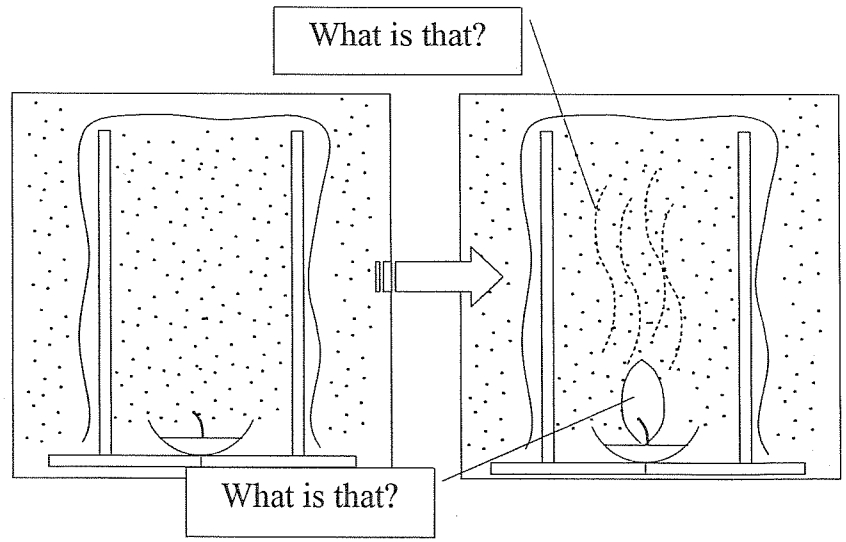
When we squeeze the bottle, water rushes into the bulb.
As water rushes into the bulb, the air is compressed and the amount of water inside the bulb increases.
As the amount of water inside the bulb increases, the overall density of the bulb increase and higher than the density of water.
The higher density of the bulb, makes it move downward.

Explanation Exercise 3

Thermal Expansion

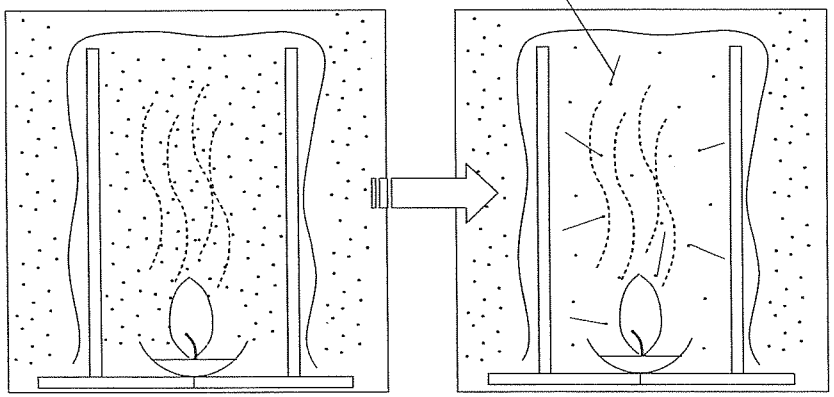


Experiment Demonstration

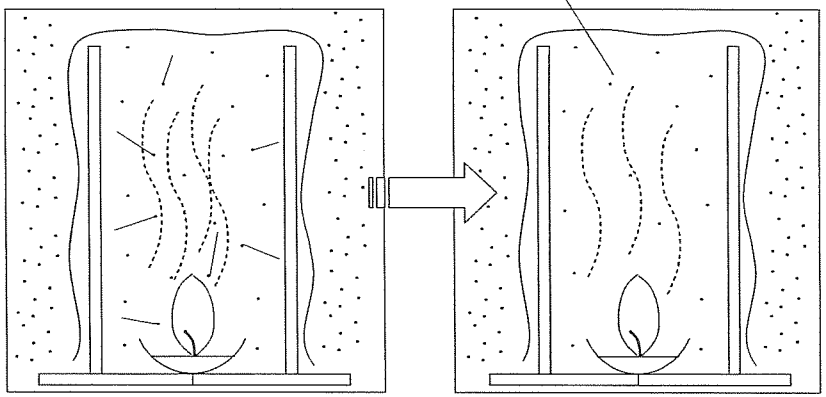


When we ignite the candle, the candle _____.

What does it mean?

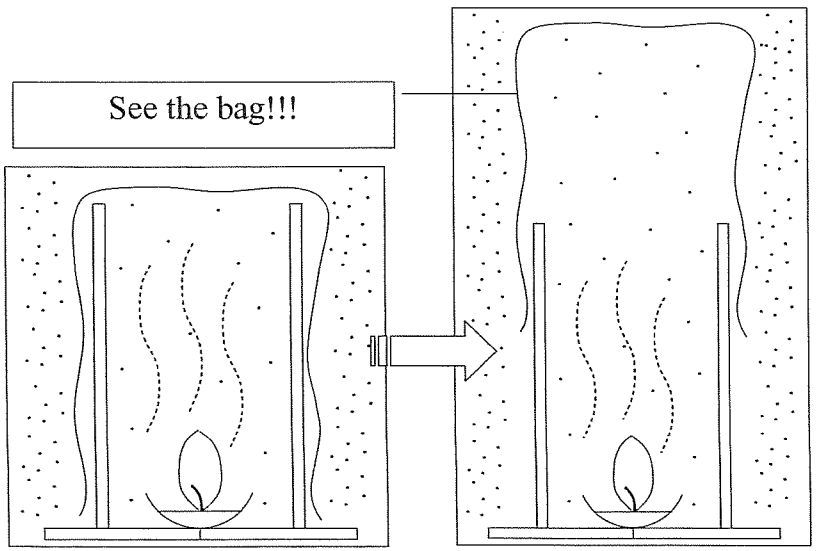


What happens to the density inside?



the density of the air inside the plastic bag is lower than that of outside.

See the bag!!!

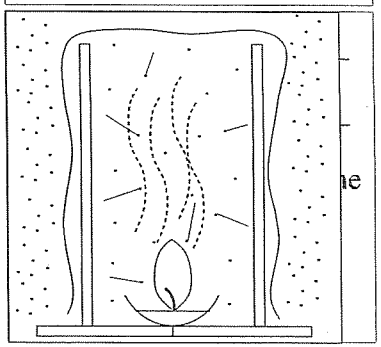


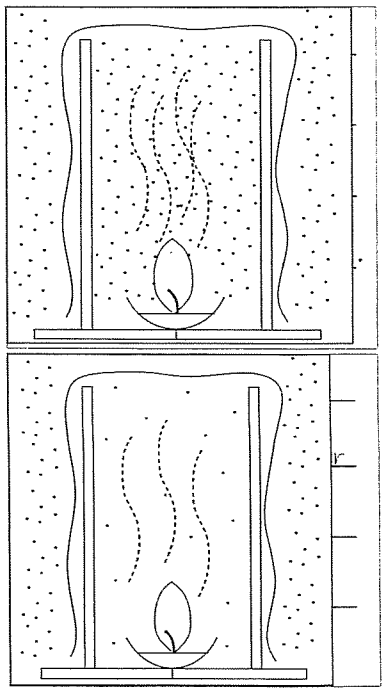
Student's work (A)

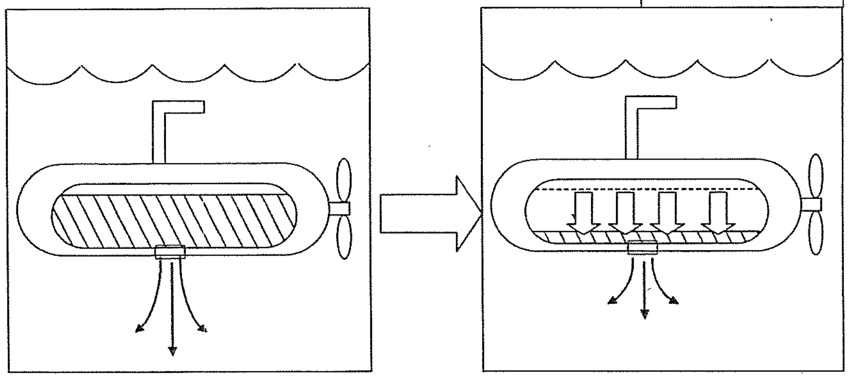
When we ignite the candle,

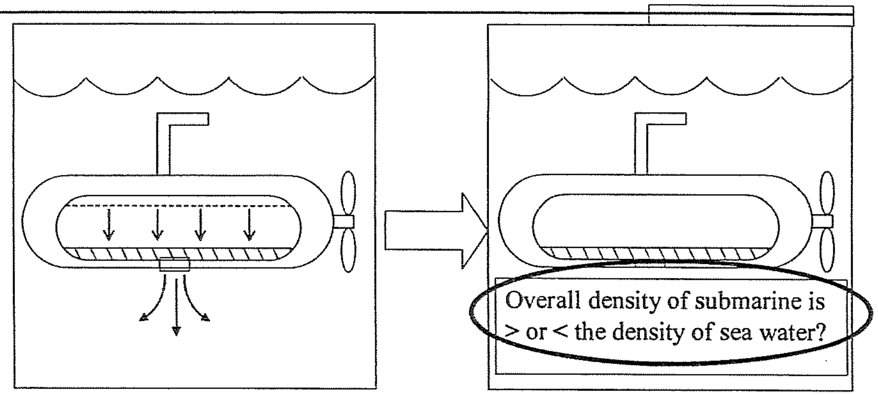
the candle give out

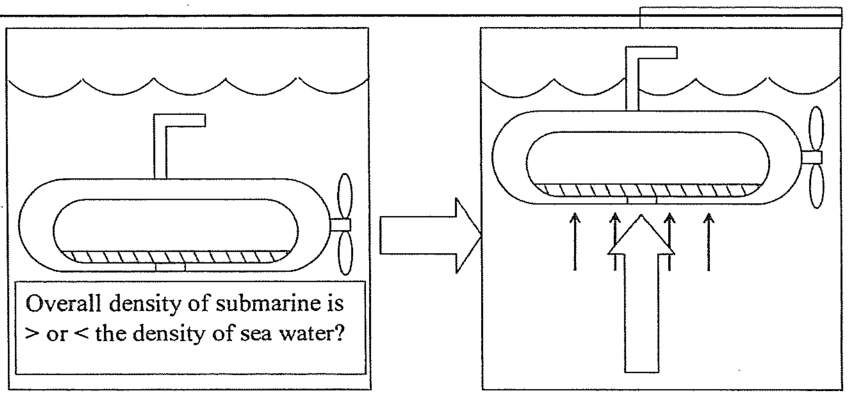
heat energy.



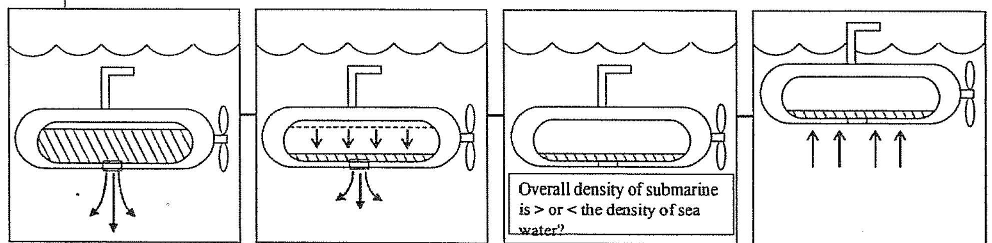








Student's work (A)



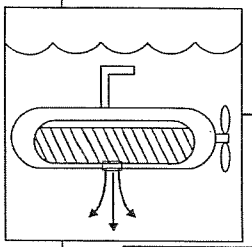
1. When the pump is turned on, it draws water away from the submarine.

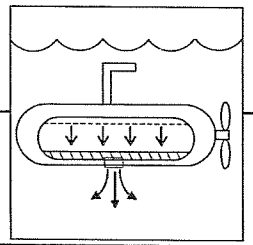
2. As it draws water away from the submarine, the water in the submarine become less

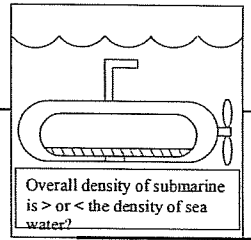
3. As the water in the submarine becomes less, Overall density of submarine is < the density of the sea water.

4. As the overall density of submarine is < the density of sea water, the submarine rise up.

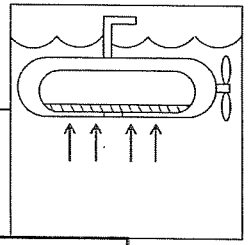
Student's work (B)







Overall density of submarine is > or < the density of sea water?



1

When the pump is turned on, it draws water away from the submarine.

2

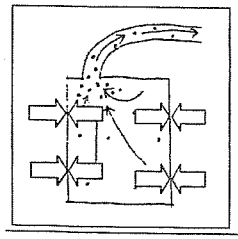
[illegible] the water is drawn away from the submarine, the air [illegible] the space.

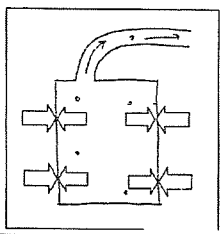
3

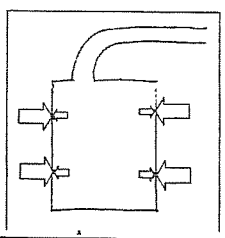
[illegible]

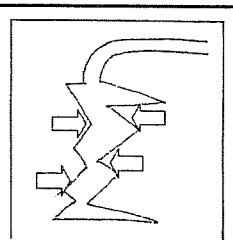
4

[illegible]



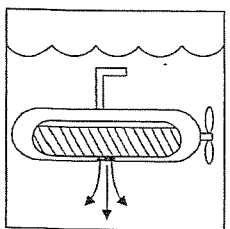




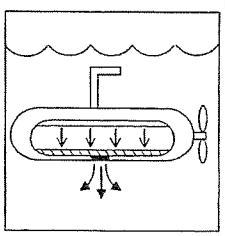


The gas pressure inside the can becomes smaller than the air pressure outside

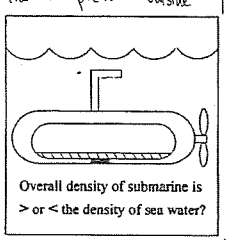
The wall of the can cannot withstand the air pressure outside.



When the pump is turned on, it draws water away from the submarine.

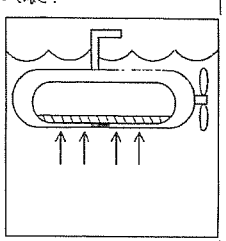


as the water is drawn away from the submarine, the air [illegible] the space.

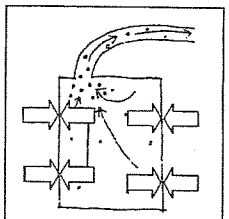


Overall density of submarine is > or < the density of sea water?

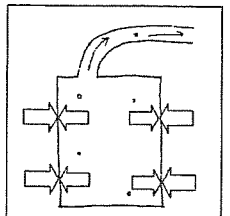
as the air [illegible]



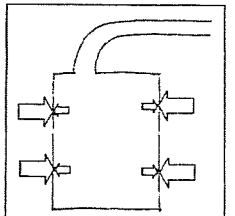
when the pressure [illegible] the density of [illegible] the submarine [illegible]



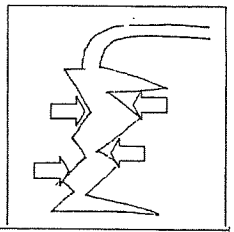
The air particles inside the soft drink can drawn out



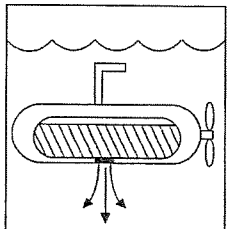
Air particles inside the soft drink can becomes smaller

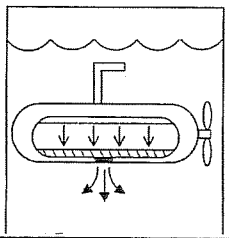


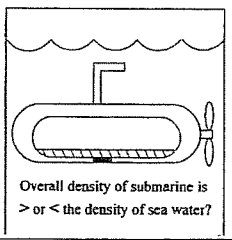
no air particles inside the soft drink can



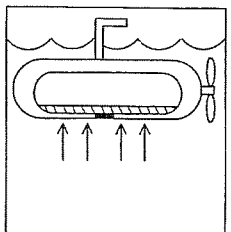
It collapses







Overall density of submarine is > or < the density of sea water?



When the pump is turned on, it draws water away from the submarine.

As it draw water away from the submarine, the water in the submarine becam less

As the water in the submarine becomes less, overall density of submarine is < the density of the sea.

As the overall submarine is < the density of sea water, the submarine rise up.