

Po Leung Kuk Ma Kam Ming College

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(Science teacher)

Background of My School

- CMI School
- Students are in general weak in English.
- English enrichment programme (ELA) is conducted in Junior Forms

Sharing:

Supporting S 1 and 2 students to
write longer texts

1. Using Sentence or Table
2. Sequential
Explanation
3. Consequential Explanation
4. Video clip by Wong Sui Bun (on
learning and teaching of F.4 Biology)

Part 1: Using a Sentence

F. 2 Unit 11
Sensing the Environment

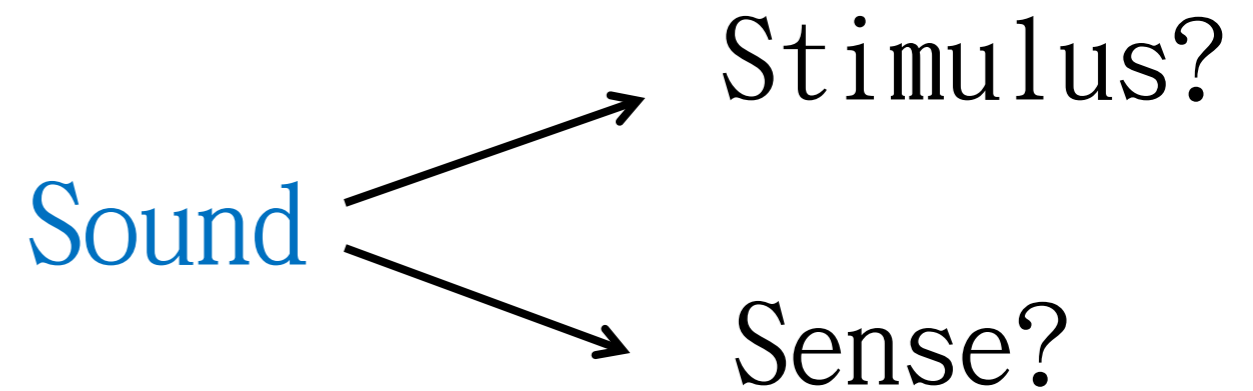
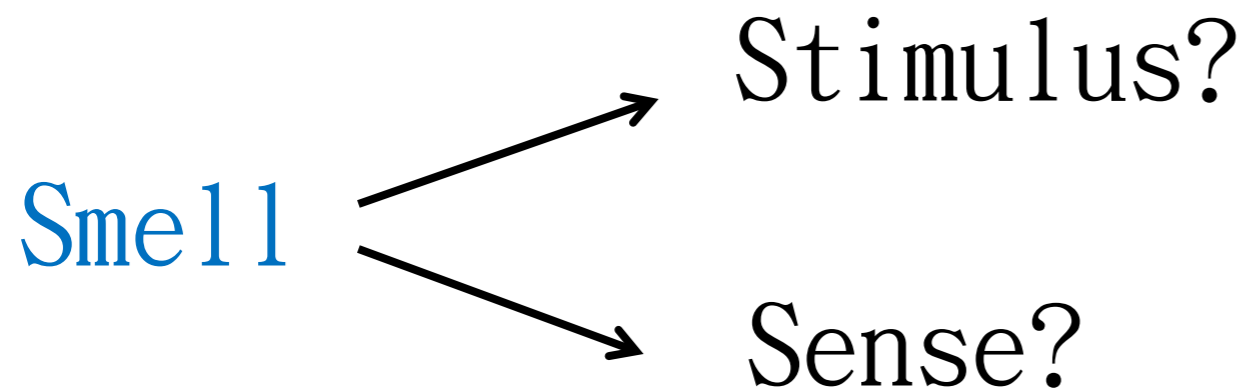
LMC and WSB
PLK Ma Kam Ming College

Using Category Table

Sense organ	Stimuli	Sense
Eye	Light	Sight
Ear	Sound	Hearing
Nose	Chemicals in air	Smell
Tongue	Chemicals in food	Taste
Skin	Touch, Temperature, Pain	Sense of touch, Sense of hotness and cold

What happened?

Firstly, students mixed up the concepts!



Secondly, students did not know how to describe the phenomenon either orally or in a written text.

Solutions?

Is a **sentence** better than a
table?

Redesign the notes...

Sentence (fill in the blanks)

Sample: We use our eyes to detect light.

We are using our sense of sight.

sound	smell	nose	hearing	ear	chemicals in air
-------	-------	------	---------	-----	---------------------

1. We use our _____ to detect

_____.

We are using our sense of

2. We _____ our _____ to _____.

We _____ our _____ of _____.

3.

_____.

_____.

Why do we use Sentences?

a Table is a good organizer of information

but a Sentence conveys **fuller meaning !!**

Sentence (fill in the blanks)

e. g. We use our eyes to detect light.
We are using our sense of sight.

sound	smell	nose	hearing	ear	chemicals in air
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something
can be used

it belongs
to us

We use our _____ to detect _____.

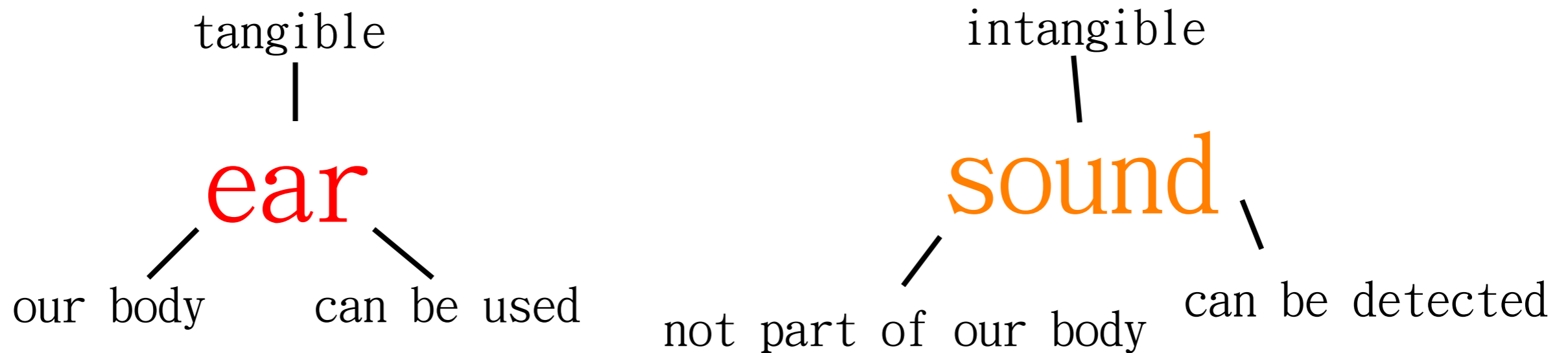
We are using our sense of _____.

2. We _____ our _____ to _____.

We _____ our sense of _____.

Implicit Learning

Concepts are associated with one another better!!



1. We use our _____ to detect

_____.

ear sound

We are using our sense hearing

_____.

reinforcing that hearing is a sense

Concepts are associated better

and

Students learn how to describe a phenomenon
either in oral or written form by using
complete sentences

Teaching Strategy

Teaching with sentence

sound	smell	nose	hearing	ear	chemicals in air
-------	-------	------	---------	-----	------------------

1. We use our _____ to detect _____.
We are using our sense of _____.
2. We use our _____ to detect _____.
We are using our sense of _____.

Table as summary

Sense organ	Stimuli	Sense
Eye	Light	
Ear	Sound	
Nose	Chemicals in air	
Tongue	Chemicals in food	
Skin	Touch, Temperature, Pain	Sense of touch, Sense of hotness and cold

Bonus (Nominalisation)

- Seeing is a result of the detection of light by our eyes.
- Hearing is a result of the detection of sound by our ears.

Nominalisation allows students to express concepts more efficiently!!

Nominalisation

Nominalisation is a process whereby a number of words or a process of events are turned into nouns

Nominalisations are found in more technical, written texts to express abstract ideas.

Class practice:
(on students' notebook / on the board)

action	nominalisation
detect	detection
protect	protection
move	movement
interpret	interpretation
...	...

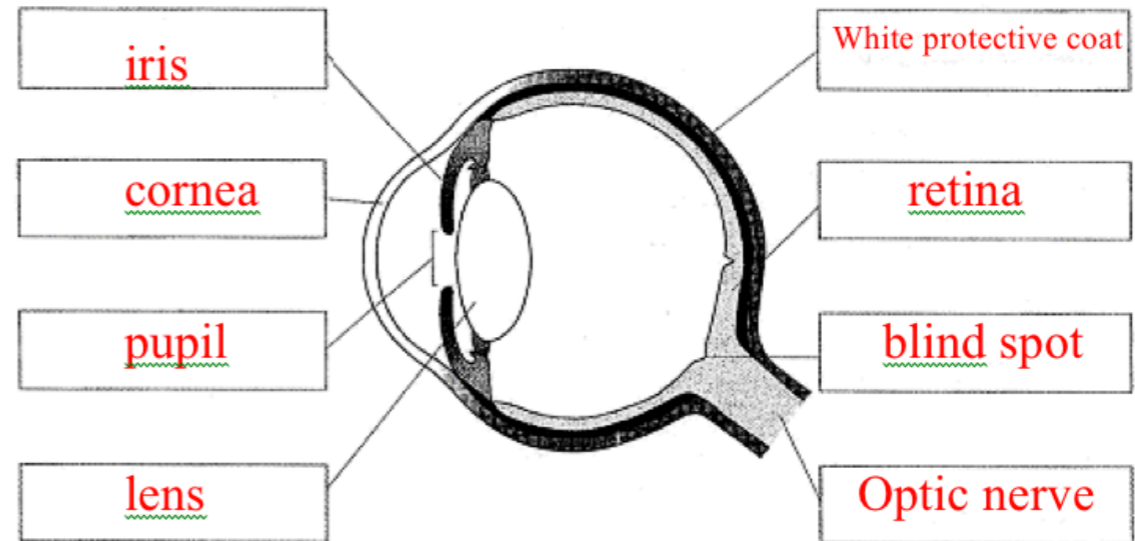
Part II: Sequential Explanation

F. 2 Unit 11 *Sensing* the Environment

by WSB and LMC

Traditional notes

Good for
summary or tests



Structure	Main Function
Cornea (角膜)	It allows light to pass through.
Pupil (瞳孔)	It controls the amount of light entering the eye.
Iris (虹膜)	It controls the size of the pupil.
Lens (晶狀體)	It focuses light onto the retina.
Retina (視網膜)	It contains light sensitive cells (感光細胞) for detecting light
Protective coat (外保護層)	It protects and gives shape to the <u>eye ball</u> .
Optic nerve (視神經)	It carries signals to the brain. The brain then interprets (詮釋) these signals.
Blind spot (盲點)	No light sensitive cell can be found at this spot.

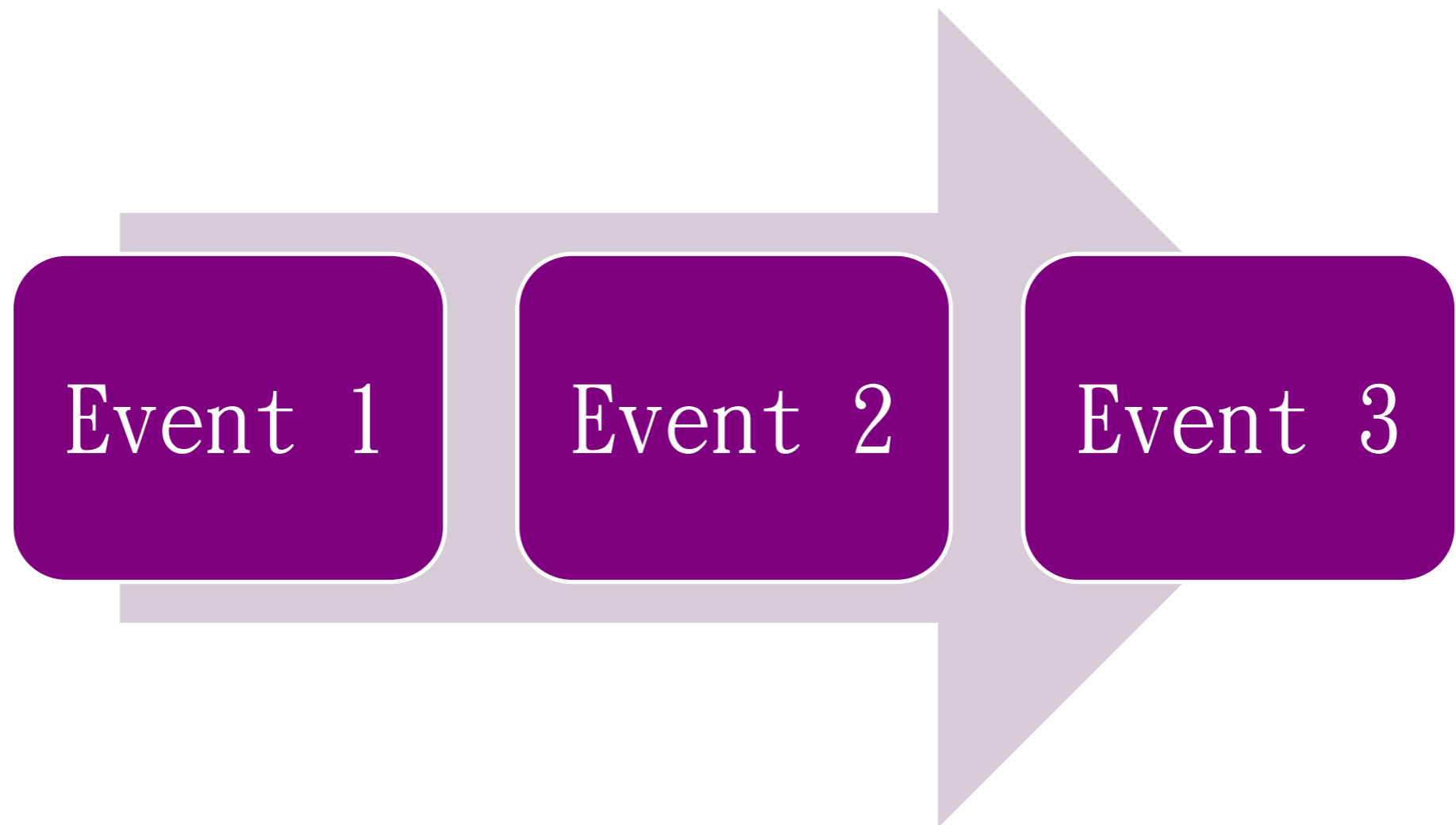
Is it easy for students to understand the concepts and put them into their long-term memory ?

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What should we do?

Sequential Explanation

One sequence follows the other,
just like a flowchart:



Sequential Explanation

Good for reading, writing, understanding
and long-term memory

Light from an object enters the eye through the **cornea**

and the **cornea** and the lens focus the light onto the **retina**

On the **retina**, an **image** is formed.

The signal of the **image** is sent through the optic
nerve to the **brain**.

At the **brain**, the signal is interpreted and this is
how we can see.

Class activity:
(Cut up the text and ask students to re-arrange them.)

the brain, the signal is interpreted and this is how we can see.

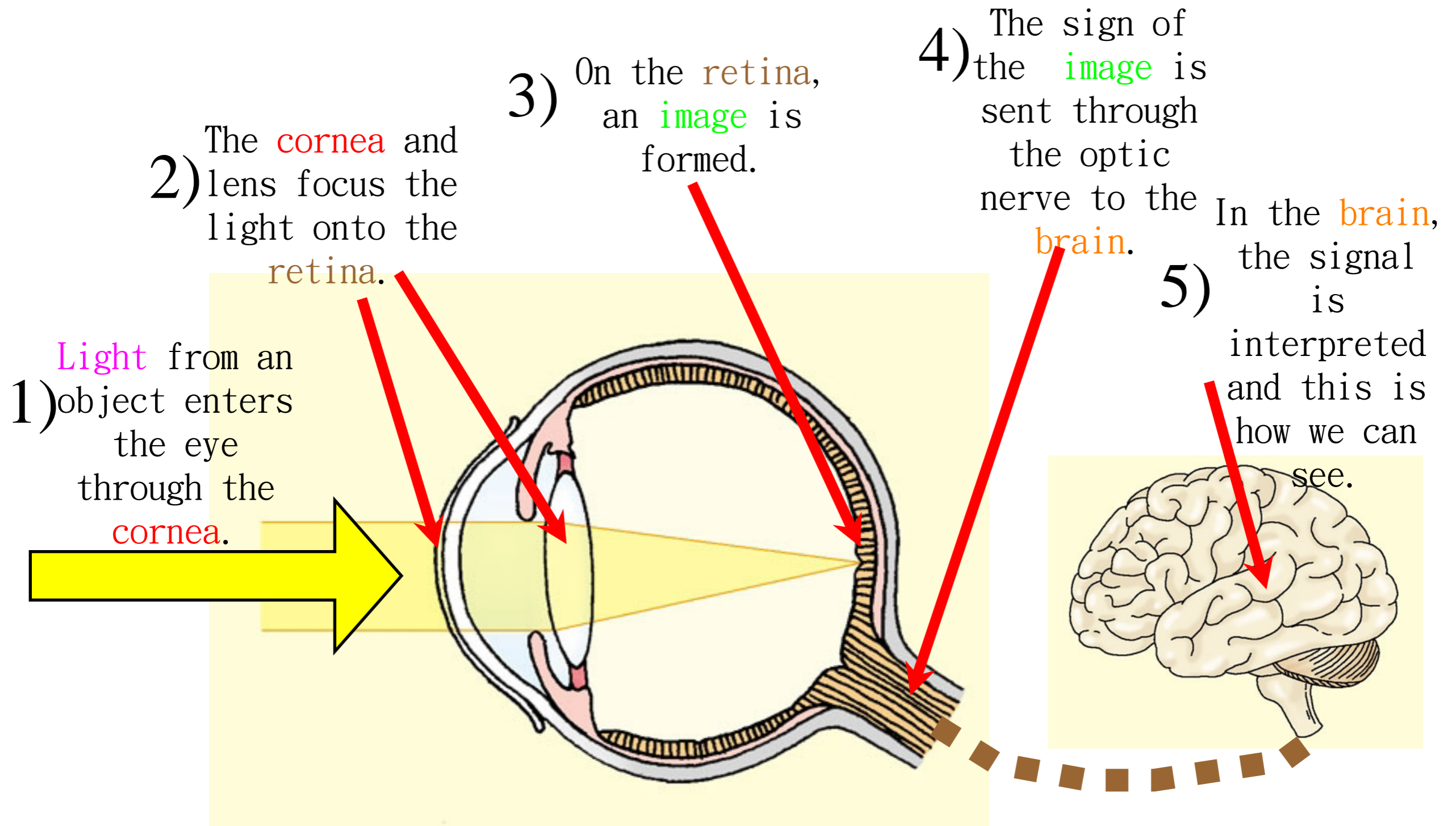
The signal of the image is sent through the optic nerve to the brain.

Light from an object enters the eye through the cornea

On the retina, an image is formed.

The cornea and the lens focus the light onto the retina

Sequential Explanation and Visualization



Part III (another genre): Causal Explanation

F. 1 Unit 6 Matter as Particles

by LMC

Causal Explanation

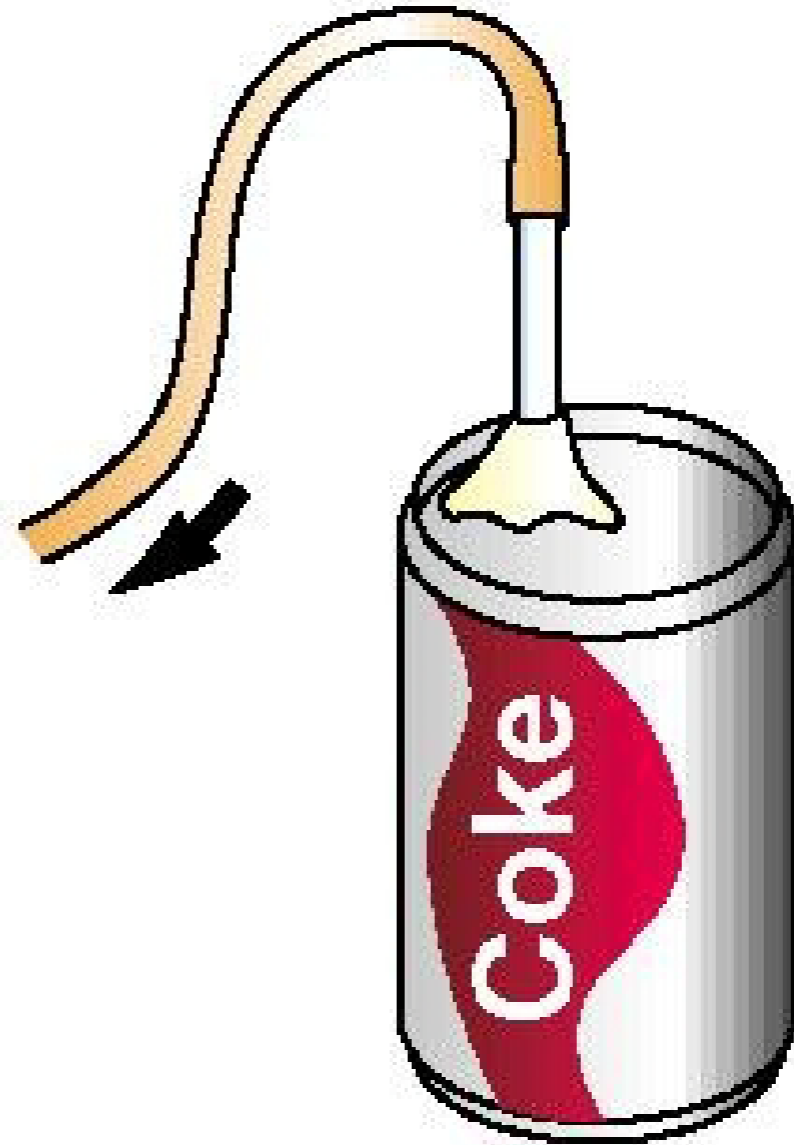
A causal explanation unfolds according to time and also gives reasons for things happening.

Air pressure

By LMC 2009

- What happens when we switch on the vacuum pump?

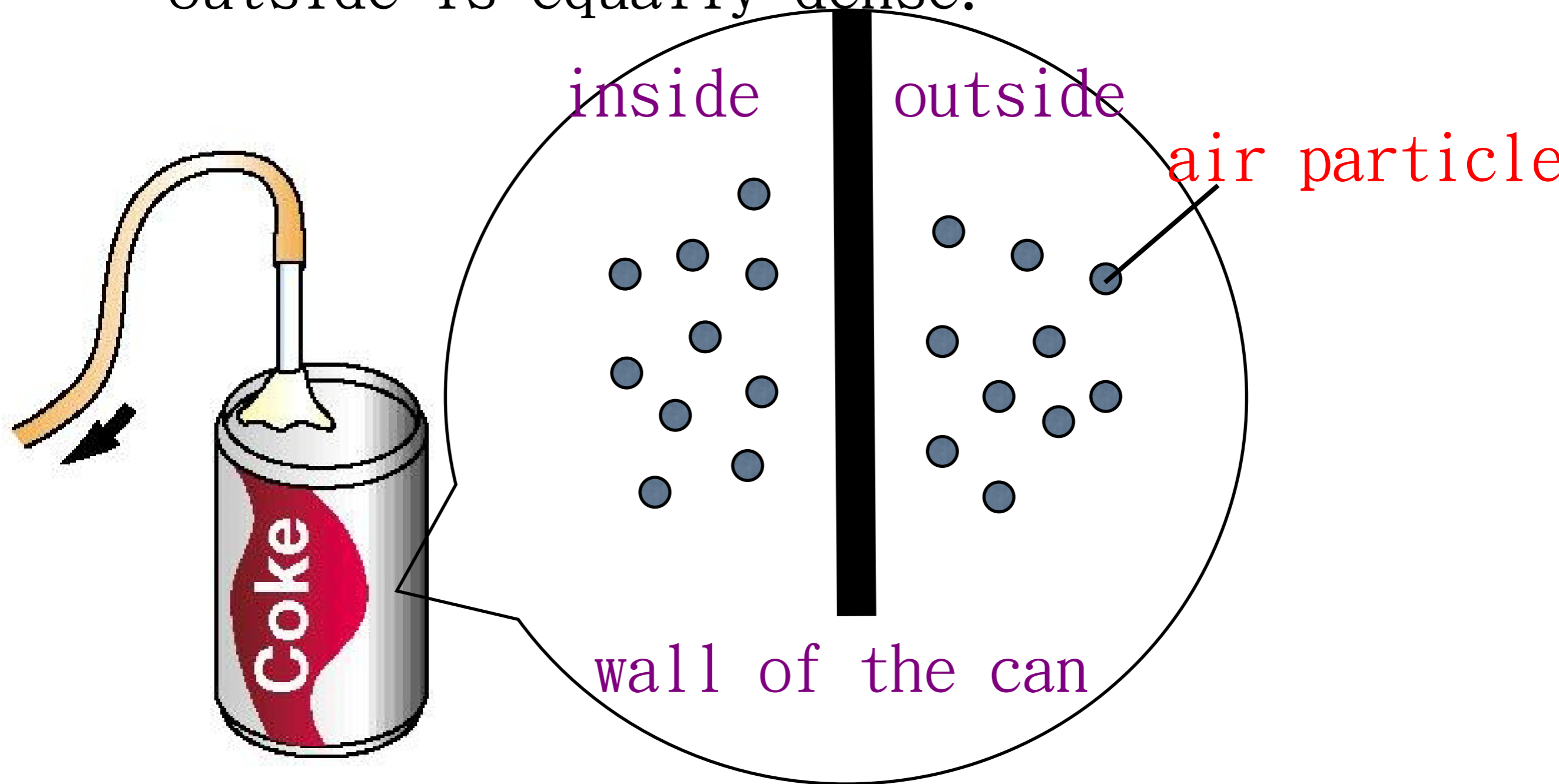
To vacuum pump



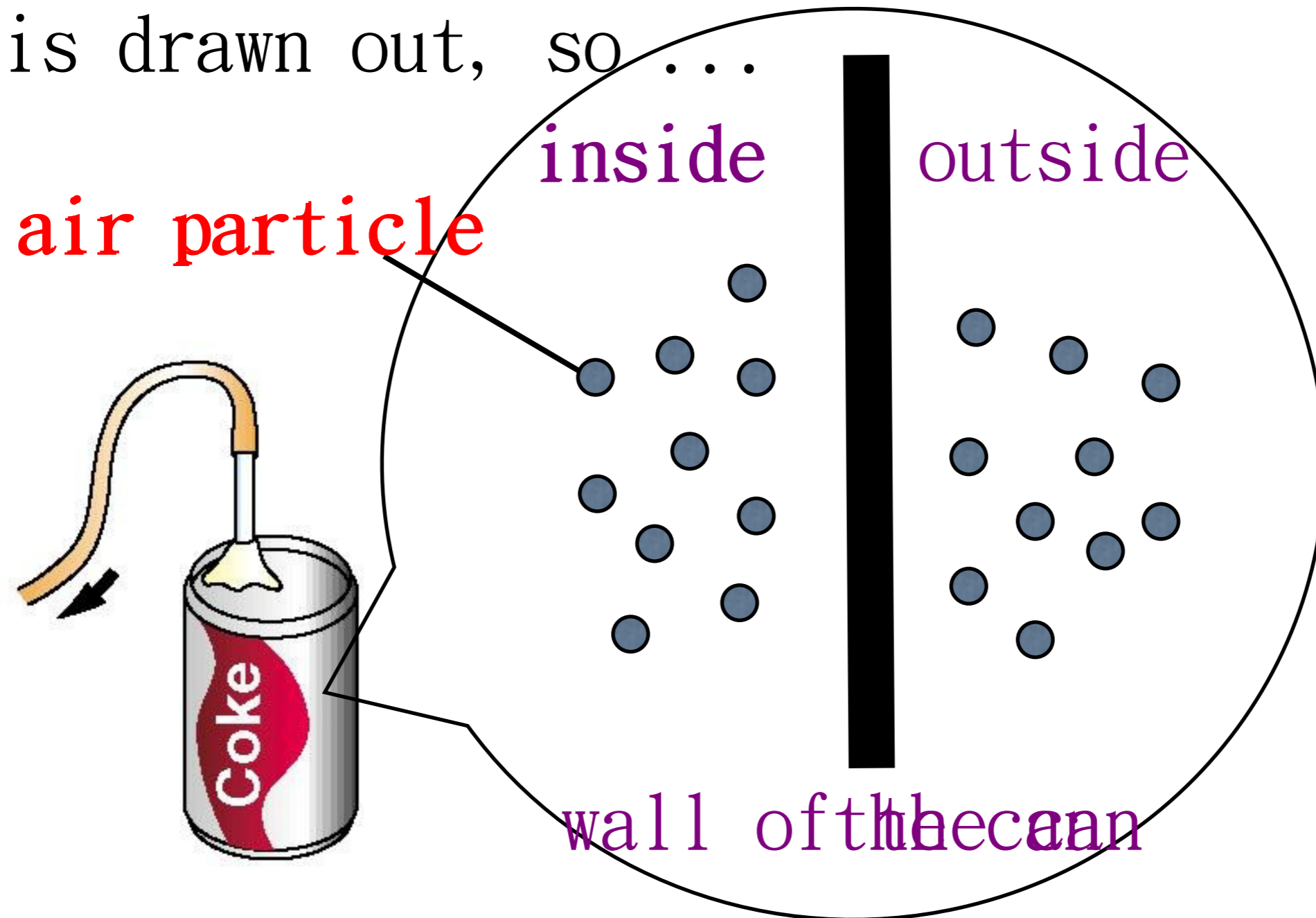
Why? Explain!



- Before we switch on the vacuum pump, the air inside and outside is equally dense.

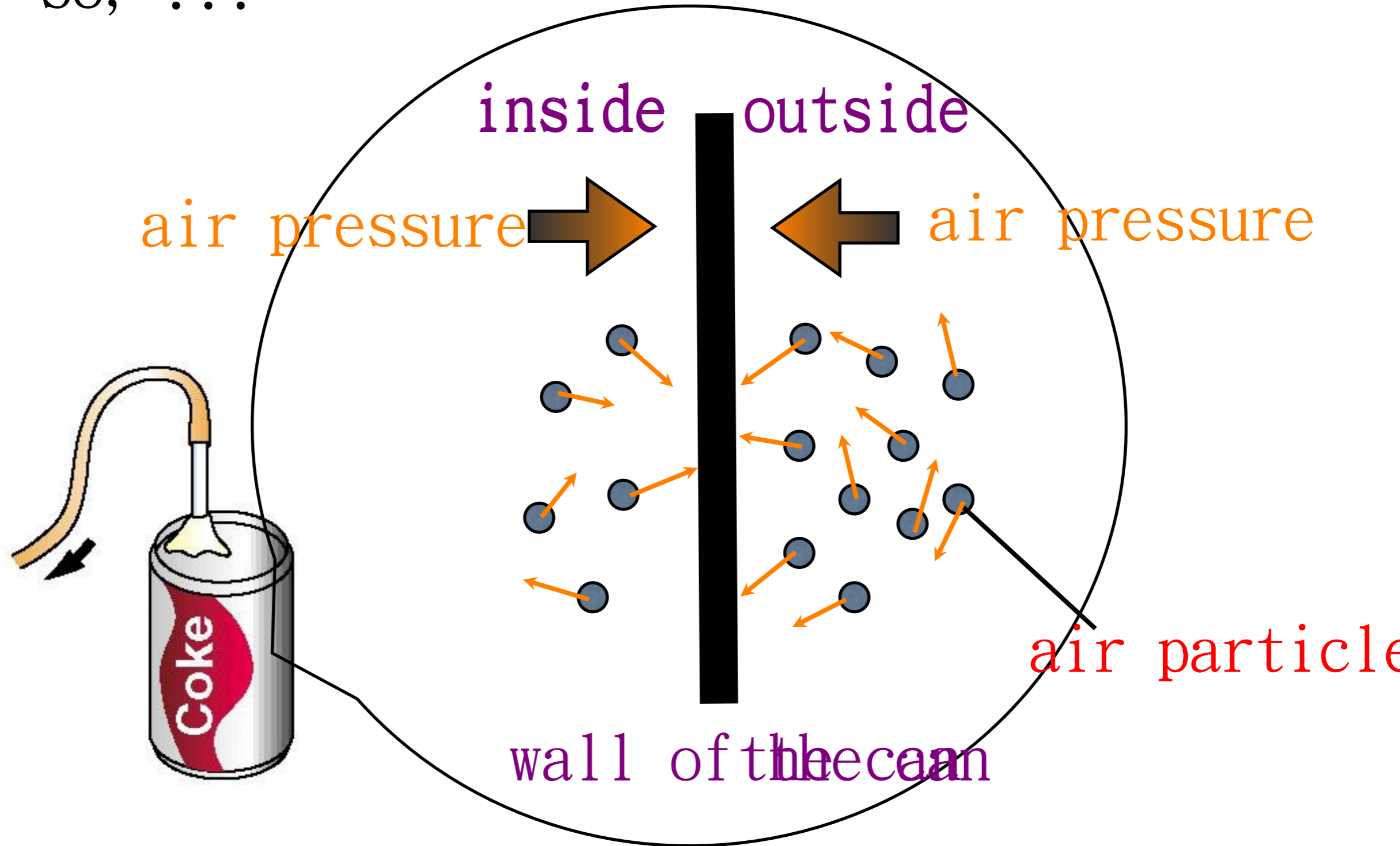


- When the vacuum pump is switched on, some particles inside the can is drawn out, so ...



the number of _____ s inside the can
(increases / decreases).

- So, ...



the air pressure _____ is (smaller/greater)
 than the air pressure _____.



Therefore, the air pressure crushes the can and the can collapses.

Answer (6 marks)

- When the vacuum pump is switched on, the number of air particles decreases. (2 marks)

So, the air pressure inside the can is smaller than the air pressure outside the can. (2 marks)

Therefore, the air pressure crushes the can and the can collapses. (2 marks)

- Explain what happens when we blow air into a plastic bag?



Part IV: Video Clip

By WSB

- Subject : Biology
- Level : S. 4
- Teaching strategy used:
Teaching-learning cycle
- Genre : Causal Explanation
- Content : Notes and worksheets, student texts and interviews with students on the learning outcomes.

End of my sharing

Thank you