

Tujuan

Menunjukkan kewujudan cas elektrostatik
To show the existence of electrostatic charges

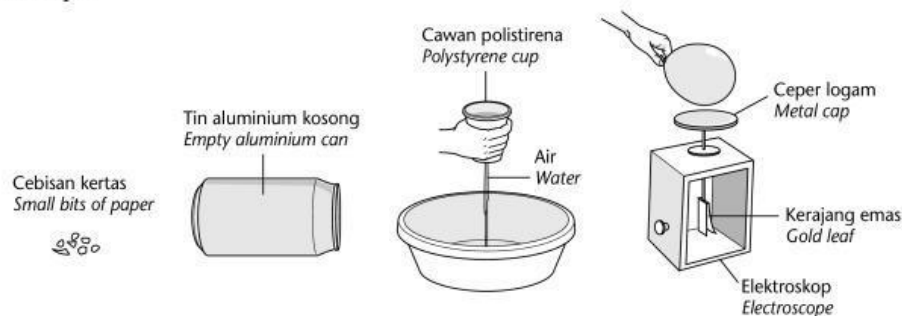
Bahan dan Radas

Kain bulu (atau kain sutera), belon (jalur selulosa asetat atau rod politena), cebisan kertas, tin aluminium kosong, cawan polistirena dengan satu lubang kecil di dasarnya, air, elektroskop
Woollen cloth (or silk cloth), balloon (strip of cellulose acetate or polythene rod), small bits of paper, empty aluminium can, polystyrene cup with a small hole at its bottom, water, electroscope

Prosedur



Video



- 1 Gosok sebiji belon dengan kain bulu./Rub a balloon with a woollen cloth.
- 2 Dekatkan belon itu kepada cebisan-cebisan kertas dan catatkan pemerhatian.
Hold the balloon near small bits of paper and record the observation.
- 3 Ulang langkah 1 dan 2 dengan menggantikan cebisan-cebisan kertas dengan tin aluminium kosong, aliran halus air dan elektroskop.
Repeat steps 1 and 2 by replacing the small bits of paper with an empty aluminium can, a fine stream of water and an electroscope.

Pemerhatian

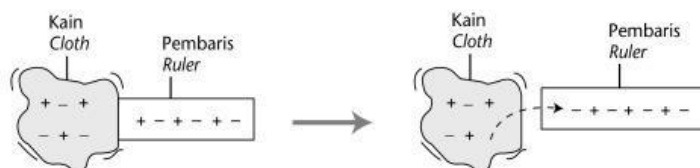
- 1 Cebisan-cebisan kertas, tin aluminium kosong dan aliran halus air _____ ke arah belon.
The small bits of paper, empty aluminium can and fine stream of water are _____ to the balloon.
- 2 Kerajang emas elektroskop _____.
The gold leaf of the electroscope _____.

Perbincangan

- 1 Apakah cas elektrostatik?/What are electrostatic charges? **TP1**
Cas-cas elektrik yang/Electrical charges that _____.
- 2 Apakah cas yang terhasil pada belon selepas digosok dengan kain bulu? **TP2**
What are the charges that are produced on the balloon after it is rubbed with the woollen cloth?

- 3 Tandakan (✓) jenis-jenis cas elektrik./Tick (✓) the types of electric charges. **TP1**
☐ Cas positif ☐ Cas negatif ☐ Cas neutral
Positive charge Negative charge Neutral charge
- 4 Tandakan (✓) apa yang berlaku kepada pembaris plastik selepas digosok dengan kain bulu. **TP1**
Tick (✓) what happens to the plastic ruler after it is rubbed with the woollen cloth.
☐ Pemindahan proton ☐ Pemindahan elektron ☐ Tindak balas kimia
Transfer of protons Transfer of electrons Chemical reaction
- 5 Apakah kegunaan elektroskop?/What is the use of an electroscope?
Mengesan/To detect _____.

- 6 Pilih jawapan yang betul untuk menyatakan jenis cas yang diperoleh apabila kain dan pembaris di bawah digosok bersama. / Choose the correct answers for the types of charge gained when the cloth and the ruler below are rubbed together. **TP2**



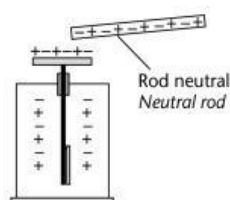
- (a) Kain kehilangan (proton, elektron) kepada pembaris. Kini, kain bercas (positif, negatif) kerana kain mempunyai (proton atau cas positif, elektron atau cas negatif) yang berlebihan.
The cloth loses (protons, electrons) to the ruler. Now, the cloth is charged (positive, negative) because it has excess (protons or positive charges, electrons or negative charges).
- (b) Pembaris menerima (proton, elektron) daripada kain. Kini, pembaris bercas (positif, negatif) kerana pembaris mempunyai (proton atau cas positif, elektron atau cas negatif) yang berlebihan.
The ruler receives (protons, electrons) from the cloth. Now, the ruler is charged (positive, negative) because it has excess (proton or positive charges, electrons or negative charges).

- 7 Nyatakan ciri-ciri cas elektrostatik. / State the properties of electrostatic charges.

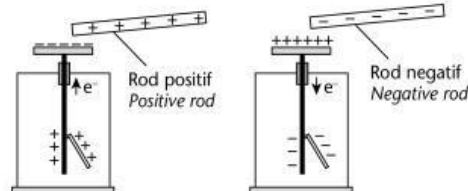
Cas-cas yang sama saling _____ manakala cas-cas yang berlainan saling _____
The same charges _____ while different charges _____ to one another.

- 8 Rajah di bawah menunjukkan bagaimana elektroskop berfungsi. Pilih perkataan yang betul.
*The diagram below shows how electroscopes work. Choose the correct words. **TP2***

- (a) Rod neutral / Neutral rod



- (b) Rod bercas / Charged rods



Kerajang emas (mencapah, tidak mencapah) kerana cas-cas positif dan negatif (menarik, menolak) antara satu sama lain.
Gold leaf (diverges, does not diverge) because the positive and negative charges (attract, repel) each other.

Kerajang emas (mencapah, tidak mencapah) kerana cas-cas yang sama akan (menarik, menolak) antara satu sama lain pada kerajang emas.
Gold leaf (diverges, does not diverge) because the same charges (attract, repel) each other on the gold leaf.

- 9 Bulatkan keadaan yang menghasilkan cas-cas elektrostatik dalam kehidupan harian.
*Circle the situations that produce electrostatic charges in everyday life. **TP2***

Menyikat rambut pada hari yang panas
Combing hair during a hot day

Mencuci baju
Washing cloth

Menseterika kain nilon
Ironing nylon cloth

Kesimpulan

_____ dapat dihasilkan pada objek secara geseran.
 _____ are produced on objects by friction.