Everything around us is made of atoms. Atoms do not have any electrical charge, however, atoms contain even smaller particles called electrons which have a negative charge. If an atom gains electrons it becomes negatively charged and if it loses any electrons, it becomes positively charged.

Electrons are able to move from one object to another. When objects are rubbed together, some electrons are stripped from one object and are left on the other. This leaves one object with extra electrons and therefore a negative charge and the other with fewer electrons and a positive charge.

When an object is positively or negatively charged, an electric field is created. This is an area around the object in which its electric charge exerts a force. If another charged object moves into this electric field a force acts upon it. This means that two objects do not have to touch for a force to act between them. If the two objects both have the same electric charge (both positive or both negative), they will repel each other. If one object is negatively charged and one is positively charged, they will attract one another.

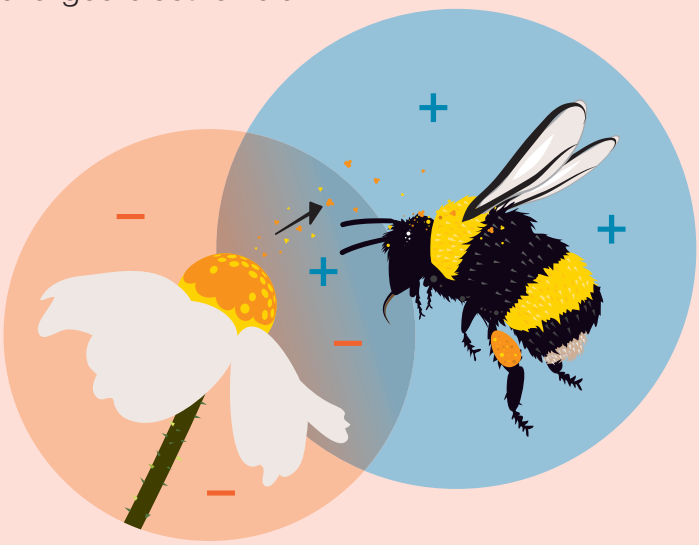
Objects with the same electric charge will repel (push away from) each other.

Objects with opposite electric charges will attract (pull towards) each other.

Bumblebees use static electricity to collect pollen

When a bumblebee flies through the air, it can beat its wings up to 200 times per second. This extremely rapid movement means that the bumblebee frequently collides with tiny particles in the air. These collisions strip negatively charged electrons from the bumblebee. This leaves a bumblebee with a positively charged electric field.

Flowers and therefore the pollen within them have a negatively charged electric field. As a positively charged bumblebee approaches a flower, their electric fields overlap and there is a force of attraction between them. This force causes the negatively charged pollen grains, that are not anchored to the flower, to 'leap' from the flower onto the bumblebee, without the two even needing to touch.



HERITAGE FUND

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