

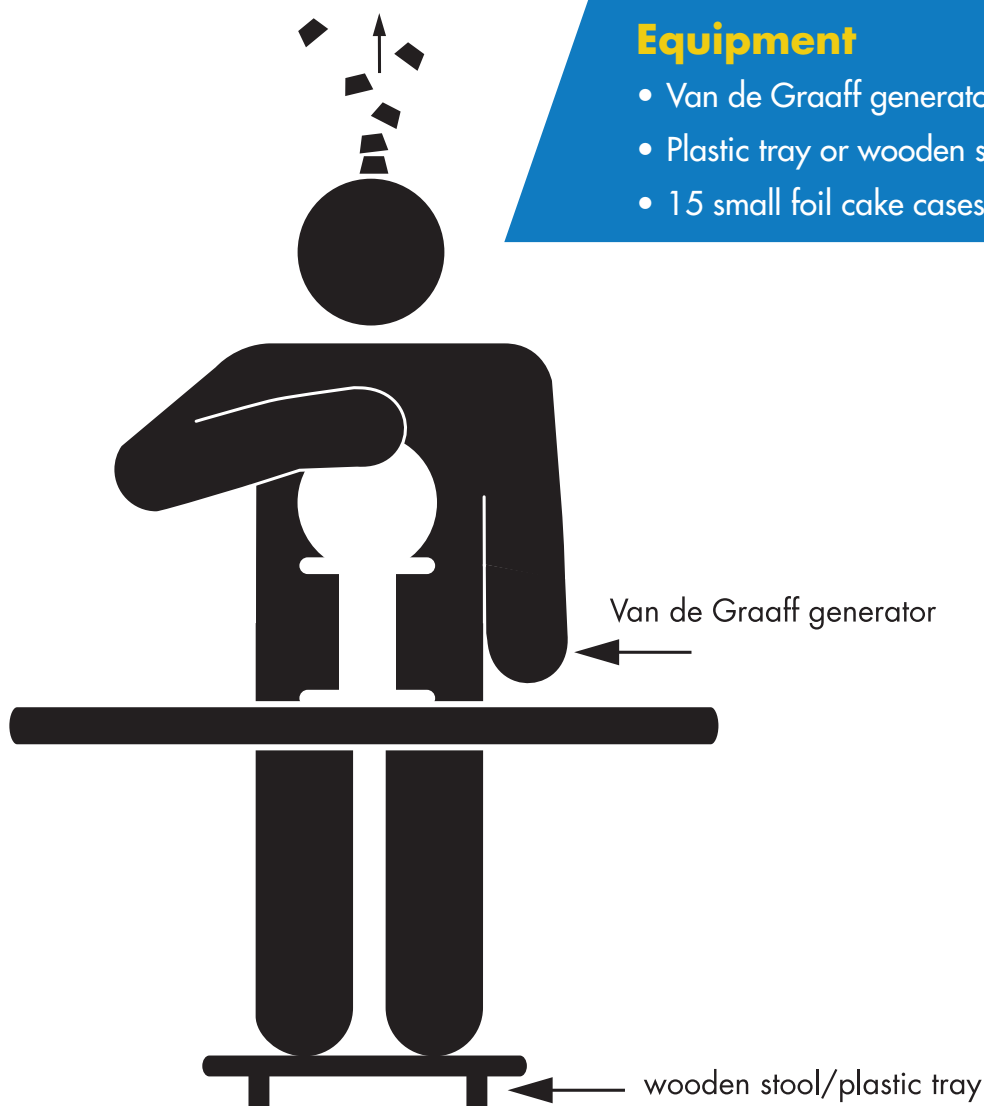
Top 10 Flash Bang Demos

Number 3 Flying cake cases

The **Van de Graaff** can be used for a variety of **demonstrations**, here's one you might not have seen!

Equipment

- Van de Graaff generator
- Plastic tray or wooden stool to stand on
- 15 small foil cake cases



Safety precautions

Do not allow students to operate the Van de Graaff. Always ensure the person touching the Van de Graaff is insulated by standing on something wooden or plastic.

The following pupils/adults should not stand close to the Van de Graaff:

- anyone with electrical implants e.g. hearing aids;
- people with coronary heart disease (e.g. angina, history of heart attacks); and
- those suffering from epilepsy.

To protect equipment keep the Van de Graaff away from USB sticks, computers, mobile phones and handheld devices.

Always carry out your own risk assessment for this demonstration.





Top 10 Flash Bang Demos

Number 3 Flying cake cases

Method

- Stand on the tray
- Ensure the Van de Graaff is discharged by touching the dome with the conductor sphere
- Turn cake cases upside down and place on your head (works best on those with little or no hair!)
- Touch the Van de Graaff with one hand and ask an assistant to turn the generator on
- The cake cases should start flying off your head!
- Turn off the generator

The science bit

The electrostatic charge created by the Van de Graaff goes through your body and charges the foil cake cases. The cases repel each other and fly off due to their minimal weight. When they settle on the ground they release any remaining charge to earth.

Demonstration tips and interesting facts

A Van de Graaff generator works best on a dry day.

In humid conditions you may need to dry the belt using a hair dryer.

If you do not have someone available for the demonstration, or simply can not get it to work, place the cake cases directly on top of the dome.

Instructions are in accordance with CLEAPSS guidelines and safety information.