

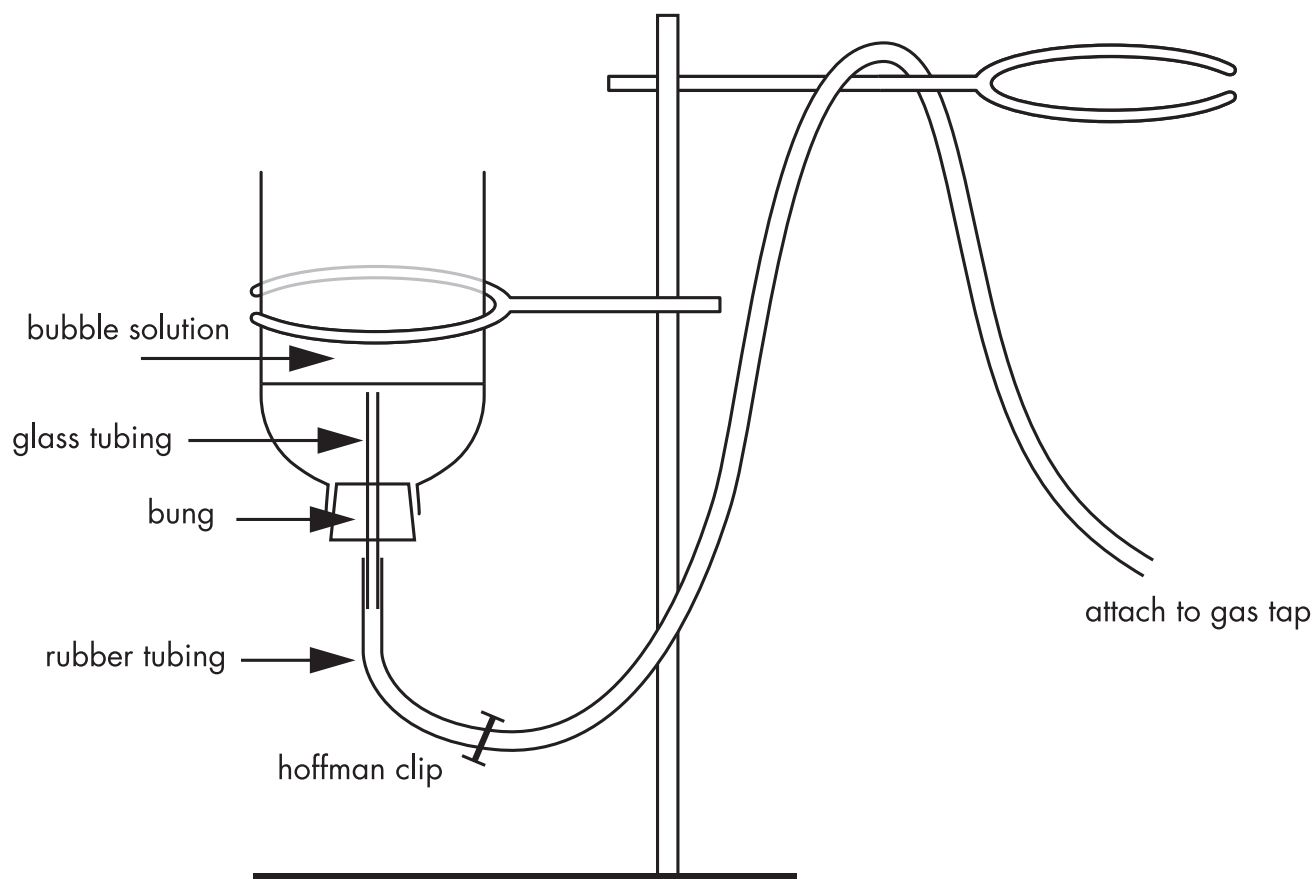
Top 10 Flash Bang Demos

Number 2 Flaming hands

Set light to bubbles of methane on your hands to **delight** and **amaze** your students

Equipment

- 500ml drinks container with the bottom removed, inverted and fitted with a bung and delivery tube
- 16ml washing up liquid for bubble solution (cheaper brands work best), plus a bit extra for coating hands
- 8ml glycerol
- 150ml water
- Ruler with spill attached
- Clamp stand



Safety precautions

Do not perform this demonstration on pupils.
Methane is extremely flammable.
Demonstrator should have hair tied back and wear safety goggles.
Hands must be properly covered with washing up liquid.
Ensure ceiling height is 3 metres or more from demonstration.
See CLEAPSS supplementary risk assessment SRA03
Always carry out your own risk assessment for this demonstration.



Top 10 Flash Bang Demos

Number 2 Flaming hands

Method

- Mix together the washing up liquid, glycerol and distilled water to make the bubble solution (this demonstration works best if solution is prepared at least one week beforehand)
- Assemble apparatus as shown in diagram, ensuring glass tube is just below bubble solution
- To prevent solution from sucking back into the gas tap, ensure a portion of the rubber tubing is higher than the bubble solution by hanging over a clamp
- Turn gas on, adjusting the flow with the Hoffman clip to ensure a steady rise of bubbles
- The bubbles will start to form a column above the apparatus, discard first 10cm of bubbles as these will contain air
- Cover your hands with washing up liquid
- Scoop up a handful of bubbles and hold at arms length
- Ask an assistant to light a spill attached to a metre rule and ignite the bubbles

The science bit

Methane becomes trapped in the bubbles and the slight heat from the spill ignites the gas and causes the bubbles to burst. The heat from each bubble causes a chain reaction, causing more bubbles to burst, but as the amount of methane being ignited is relatively small, the heat produced is easily bearable.

Demonstration tips and interesting facts

Methane is a gas produced by cows in large quantities.

Methane is 100 x more dangerous to the environment in terms of climate change than carbon dioxide.

Discuss with your students whether the column of bubbles resemble Marge Simpsons hair!

Other things to try

Slice off a section of the bubbles using a ruler, causing them to float towards the ceiling. Using a spill on the end of a wooden ruler ignite the bubbles as they float upwards. Only do this if the ceiling is over 3m in height and does not contain any combustible materials. Make sure you ignite the bubbles in plenty of time before they reach the ceiling.

Instructions are in accordance with CLEAPSS guidelines and safety information.