

Station 3 – This is bananas

Background:

Have you ever tried to use a smartphone or tablet while wearing gloves? It doesn't work so well, unless you buy special gloves made to do just that. Or have you ever tried to use fruit to swipe a phone? You might be surprised what happens when you do!

Instructions:

1. Predict which item will tap and swipe effectively.
2. Test each fruit, vegetable, fabric and seed on your phones touchscreen to see if it can tap or swipe effectively.

Explanation:

Glass is used for touchscreens because it is transparent, durable and smooth. It is also an electrical insulator. Most touchscreens used today are capacitive.

In a capacitive touchscreen, the glass is coated with a thin layer of a conductor – usually indium tin oxide. When the layer is touched by another conductor, such as your finger or a banana, it changes the electric field of the screen.

This information is sent to software in the device to make the display change.

Touchscreens use strengthened glass to make them less likely to shatter and scratch, but they are not perfect – as you'll know if you've dropped a phone and smashed the screen.

Making better glass for touchscreens is an area of active research. Most phones and tablets use Gorilla Glass, which is a glass that has been altered to make it more durable. The screens of the iPhone 12 and many smart watches are made of other materials, such as sapphire crystal (a crystalline material) or Ceramic Shield (a glass-ceramic).

To operate a capacitive touchscreen, do you need to touch it with a conductor or insulator?