Script: How to pop a balloon without touching it?

Topic: Solubility of non-polar substances

Frame	Voice-over	Text on Screen	Design Insights
F1 MCU of the Anchor. Variation of magnification Close up of hand(block frame of just hand and popping of balloons)	Can you pop a balloon without touching it? Watch this…!		There is a row of balloons on the table. Anchor pops them using a carefully hidden orange peel.
F2 MCU of the Anchor	How on earth did I do that?		Anchor speaks on-screen)
F3 Anchor in different magnification	Well, magic is just science that we don't understand yet.		Show scientific icons in the background 
F4 Wide angle Shot of the anchor	Wanna know the secret behind this one?		Anchor speaks (on-screen)
F5 MCU Shot	Join me as I take the mystery out of popping a balloon without touching		Anchor speaks, background changes
F6 Close up of the table where all the required items are placed	For this experiment, you'll need	Things you'll need: 1. Latex balloons 2. Orange 3. A paring knife	Images of things required
F7 ¾ shot consisting items	Alright! Here we go!		Anchor speaks (on screen)

and on the table and Anchor in one frame			
F8 Block shot of the hand and orange	Hold the vegetable peeler or paring knife against the skin of an orange and slide it across the rind. Remember, you only need the zest not pith!	**Zest** ✔ **Pith** X	On a table setting, show how to peel an orange Show images of zest and pith of orange fruit
F9 If we shoot this then shot of the balloon inflating either by mouth or machine in close up	Next, use your breath or an air pump to inflate the balloon. Let's just say, the more the merrier!		Visual showing different ways of inflating balloon: by breath and air pump
F10 Close up of the hand movement over balloon in such a fashion that juice is oozing out like a water spray	Now, for the fun part! Squeeze the orange peel to release the citrus oils onto the balloons. One caveat though: hold the peel zest-down. It's the zest that does the trick!		Orange juice falling on the surface of a balloon in slow motion .
F11 MCU of the Anchor	Exposure to citrus oil weakens the balloons, causing them to pop. But why?		Anchor speaks
F12 Different magnification may be used for the anchor to show the variation	Well, this is because like dissolves like. Limonene, found in orange peel and other citrus fruits, is a hydrocarbon. So is rubber used for making balloons. We also know that hydrocarbons are nonpolar. And, a nonpolar solvent dissolves a nonpolar solute.	**Like dissolves like.** **Non-polar solvent dissolves nonpolar solute**	Animation for limonene found in orange and rubber found in balloons.
F13 EXtreme Close Up of the orange peel whizzing out the juice	Hence, when citrus oil touches the surface of the balloon, it causes the rubber to dissolve in	**Rubber (non-polar solute) dissolves in limonene (non-polar solvent). This**	Show orange juice falling on the surface of a balloon in slow motion, again.

in slow motion	Limonene. The molecular bonds in rubber succumb to this reaction and pop - the balloon bursts!	**weakens the balloon, causing it to pop!**	
F14 Again MCU of the Anchor	Limonene is also found in rinds of lemon, lime and grapefruit. So, don't bother if you can't find an orange. You may pick any of these citrus fruits and still get the same result!	**Did you know?** **Orange peel or zest is a natural mosquito repellent.**	'You may pick any of these citrus fruit and still get the same result!' When anchor recites the above line, Show pop up of lemon, lime and grapefruit
F15 Wide shot of the entire Scene	So, there you have it - a cool trick to wow your friends!		Anchor speaks
F16 Variation of the MCU	Comment and let us know how your friends react to this trick! We'd love to hear from you!		Anchor speaks
F17 Same as Frame 16	Until next time, Keep embibing Keep learning!		Embibe logo in the end

Questions?

1. Why can't you use non-citrus fruits for this experiment?
2. Will this trick work on balloons made from vulcanized rubber?
3. What are the other examples for nonpolar solvent and nonpolar solute?

Quick recap: (2-3 lines)

1. Peel the skin of the orange using a vegetable peeler/paring knife.
2. Inflate a balloon
3. Squeeze the orange peel, zest down onto the balloon.

Ingredients :

1. Latex balloons
2. Orange
3. Vegetable peeler/paring knife

Learning outcome/science involved:

Like dissolves like:
Polar solvent dissolves in a polar solute. (e.g. water and ethanol)
Nonpolar solvent dissolves in a nonpolar solute. (hexane and pentane)