Future-tech televisions set to dominate CES The Consumer Electronics Show in Las Vegas will see big name manufacturers debuting their upcoming OLED and 4K televisions in an attempt to boost a flagging consumer market ORGANIC LIGHT-EMITTING DIODE OLEDs emit light through a process OLED screens require no backlight to called *electrophosphorescence* work, as pixels illuminate themselves, **Emissive laver** Cathode allowing displays to be much thinner Electron ► Active-matrix OLED Thin Film Transistor Supporting substrate: (TFT) matrix: A - Hole Activates individual pixels Glass, plastic or flexible layer Conductive laver Electrical current flows from Anode cathode to anode, driving electrons and holes into emissive layer. Passivecreating light matrix OI FD JAKE PIXEL Similar to active-matrix but cheaper. Uses cathode and anode strips to activate pixels Anodes Current applied to selected anodes and cathodes where they intersect determines Cathode: Red, Green, which pixels Cathodes Blue (RGB): Transparent *illuminate* electrode Organic polymer

ACTIVE VS PASSIVE

Active-matrix screens consume less power and are more efficient for large screens like TVs, monitors, electronic signs

Passive-matrix screens use more power so are better suited to small screens, like cell phones

4K TECHNOLOGY

Also known as *Ultra HD*, uses four times as many pixels as 1080p displays – 8 million pixels
Sources: CES, howstuffworks.com

Displays can be flexible

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