

**1) Explain the differences in meaning between the sentences in each group:**

1

He likes his sister's friends and colleagues.

He likes his sisters' friends and colleagues.

He likes his sisters, friends and colleagues.

2

Her brother, who works in America, is a film extra.

Her brother who works in America is a film extra.

3

Rambo was dreadful.

"Rambo" was dreadful.

4

I don't watch television – much!

I don't watch television much.

5

They said it was marvelous.

They said it was marvelous!

They said it was marvelous!!

They **said** it was marvelous...

They said, "It was marvelous."

**They** said it was marvelous...**2) Read this excerpt from a news article and add punctuation if needed: commas, apostrophes, quotation marks, etc.*****'Fake news' named Collins Dictionary's official Word of the Year for 2017***

The term fake news has been named Collins Word of the Year 2017. Usage of the term which has often been used by US President Donald Trump has risen by 365% since 2016. Defined as false often sensational information disseminated under the guise of news reporting fake news will now be added to the next print edition of Collins Dictionary.

Lexicographers the people who compile dictionaries found other politically relevant words had been significant over the last 12 months including antifa an abbreviation of anti fascist and echo chamber which refers to those who share their opinions in environments especially social media where the only people who hear or read their views will be of a similar disposition.

Helen Newstead Collins head of language content said Much of this years list is definitely politically charged but with a new President in the US and a snap election in the UK it is perhaps no surprise that politics continues to electrify the language.

Fake news either as a statement of fact or as an accusation has been inescapable this year contributing to the undermining of societys trust in news reporting given the terms ubiquity and its regular usage by President Trump it is clear that Collins Word of the Year fake news is very real news.

**Class topic: TOUCHSCREENS**

**1) Do you use touchscreens? What are the devices utilizing touchscreens? What do you usually use it for?**

**2) Put the important events in touchscreen development in the correct chronological order.**

1965 – 1970 – 1971 – 1982 – 1984 – 1993 – 2002 – 2007

- a) Sony's SmartSkin introduces mutual capacitive touch recognition, thus improving capacitive touch technology
- b) Apple introduces the iPhone
- c) PLATO IV – the first touchscreen to be used in a classroom
- d) First touchscreen phone, the Simon Personal Communicator, launched by IBM and BellSouth
- e) First finger-driven touchscreen invented by E.A. Johnson
- f) First multitouch device developed at University of Toronto
- g) First official multitouch screen overlay (Bell Labs)
- h) Dr. G. Samuel Hurst invents the first resistive touchscreen

**3) Look at the article below and put its paragraphs into the correct order. The first and last paragraphs have been identified for you.**

**4) Match the words in bold from the text with their correct definitions below.**

- |  |  |
|--|--|
| a) How wide something is   | f) Include something so that it is a part of something else  |
| b) To adjust something for particular requirements                   | g) To print something/make something available to the public |
| c) If there is a _____ of something, there is less of it than needed | h) A separate part of a process                              |
| d) Something that can be done successfully                           | i) To be greater than a particular number or amount          |
| e) To add details  |  |

**5) What are the advantages of touchscreen technology over other control methods (such as keyboard and mouse)? Can you also think of disadvantages?**

Areas to consider: accuracy, speed, proximity to the screen, type of work required, or tiredness. However, do not be afraid to come up with your own ideas.

## Physicists Develop New Touchscreen Technology

*Phys.org*. 14 Sept. 2016. Science X Network. <http://phys.org/news/2016-09-physicists-touchscreen-technology.html>

- 1)** *Physicists at the University of Sussex are at an advanced **stage** of developing alternative touchscreen technology to overcome the **shortfall** in the traditional display, phone and tablet material that relies on electrodes made from indium tin oxide (ITO).*
- a) Previous research by Professor Dalton's group has shown that silver nanowires not only match the transmittances and conductivities of ITO films but **exceed** them. This makes the material very attractive for touch screens. However, the group have now shown, for the first time, that this type of nanomaterial is compatible with more demanding applications such as LCD and OLED displays.
- b) The study, led by Sussex Professor of Experimental Physics Alan Dalton, investigates some of the intricacies of patterning silver nanowire films to produce detailed electrode structures. The paper, "Finite-size scaling in silver nanowire films: design considerations for practical devices," is **published** in the journal *Nanoscale*.
- c) Professor Dalton said: "Display technologies such as LCD and OLED form images using pixels. Each pixel of these displays is further broken down into subpixels; typically, one each for red, green and blue colours. In the display in a smartphone, for example, these subpixels are less than a sixth of the **width** of a human hair - which is also similar in length to the silver nanowires used in our research."
- d) They have now shown that not only is the material suitable for touchscreens, but that it is possible to produce extremely small patterns (pixels), small enough for high definition LCD displays, such as smartphones and the next generation of television and computer screens.
- e) Dr Matthew Large, the lead author of the paper, **expanded**: "In this research we have applied a mathematical technique to work out the smallest subpixel size we can make without affecting the properties of our nanowire electrodes. This method was originally developed to describe how phase changes like freezing happen in very small spaces, The results tell us how to **tune** our nanowires to meet the requirements of any given application."
- f) In collaboration with their industrial partners, M-SOLV based in Oxford, the team – which is now looking to apply these research results to commercial projects – has also demonstrated that the **incorporation** of silver nanowires into a multi-touch sensor actually reduces the production cost and energy usage.
- 8)** *Professor Dalton said: "Silver nanowire and silver nanowire/graphene hybrids are probably the most **viable** alternatives to existing technologies. Others scientists have studied several alternative materials, but the main issue is that the majority of other materials do not effectively compete with ITO or they are too costly to produce, at least at the moment."*