

Power point Example

NEUROHEADWAY

Neuroscience Into Education

What does 'Telecommunications' mean?



The word 'Telecommunications' comes from the Greek prefix 'tele' (τηλε), meaning distant, far off, or afar and the Latin 'communicare', meaning to share [Wikipedia].

Mobile telephony is an important branch of telecommunications.

Insert cartoon of two children placed a distance from each other communicating using a mobile phone.

How are Mobile Phones useful?



People like to use Mobile Phones because they can use them to communicate with their friends and family and do other useful things such as booking flights and playing music.

Insert cartoon of two people having a conversation with each other on their mobile phones

What can we do with Mobile Phones?



With Mobile Phones we can:

- Make Voice Calls
 - Surf the Internet
 - Email and Text
 - Use App's
- *Insert cartoon of child with mobile phone*

But how do they work???



Let's begin with a voice call:

When you have a conversation on a landline your voice signal is converted into an electrical signal using an electronic circuit.

Insert cartoon of children talking on a landline with a diagram of a voice signal propagating along the wire connection.

What are Airwaves?



Airwaves or electromagnetic waves are a lot like the waves of water that you see by the sea but they are mostly invisible and many of them travel through things. Light, which we can see, is comprised of electromagnetic waves.

Insert cartoon of airwaves (sinusoids) propagating from a mobile phone to a celltower

How fast do Airwaves travel?



Do you want to know how fast??? Well its really fast, almost 300,000 Kilometers per second!

This speed is known as 'Light Speed'. All electromagnetic waves travel at this speed.

How fast do Airwaves travel?



Because signals travelling over the airwaves or down cables travel so fast we don't really notice any delay.

Insert cartoon of child talking into mobile phone with fast (swoosh!) 'airwaves' emanating from the phone

How are Airwaves useful?



The data we send (voice, text, internet) is carried on these electromagnetic waves like a surfer travelling on a wave on the sea.

Insert cartoon of child surfing on a wave while talking into her mobile phone.

How are Airwaves useful?



Because we can send information over the airwaves we don't need cables so we can carry our phones around with us!

Insert cartoon of child talking into her mobile phone while walking down the street

What happens when you call?



When you call your friend the cell tower nearest to you asks (by way of an electrical signal by cable or an electromagnetic signal using waves) the Mobile Switching Centre (a telephone exchange) to connect you to your friend's phone via the cell tower closest to her.

Insert diagram of connection from child using mobile phone to her local celltower and then to the Mobile Switching centre and on to child receiver via her local celltower.