

# What's the best colour of light for fibre optics?

(Ireland)

## Background

In internet transfer the infrared regions are most suitable to send information. These messages are converted into infrared messages and sent down fibre optic cables at nodes. However, these terminals that convert information from text to infrared light overheat and the most suitable wavelengths for transferring information aren't always the ones that are outputted. The heating effect at the terminals warps the wavelength outside the desired range ~1310 to 1550 nm. Thus the main cost for our internet transfer across the globe is the cooling of these terminals so they can operate at the ideal temperature and send messages in the infrared

region. Thus, the name for the sequence of activities "The internet too hot to handle"

## You will need:

- ✓ A mobile phone
- ✓ Remote control



## Follow these steps:

1. Face a remote control towards a mobile phone.
2. Turn on the camera function on the mobile phone.
3. Press some of the buttons on the remote control.
4. Observe the camera screen on the mobile phone.

## So what happened?

The mobile phone camera can observe the infrared signal given off by the remote control, but our eyes can't.

## What next?

Have students discuss why the receivers in data terminals are infrared sensitive and why the light packets are sent via infrared light.

