



# Moving Images:

Bringing the world closer

## Dr Who and HD / Teacher notes

### Focus

The focus of this activity is the changing range of video formats and the exact meaning of the terminology used to describe them.

### Objectives

Students will:

- learn about the different video formats and the meaning of resolution, pixel and other relevant terms.

### Outcomes

All students will:

- answer some questions about video formats.

Most students will also:

- answer all questions about video formats, most will be correct.

Some students will also:

- answer all questions about video formats, all will be correct.

### Equipment

- Worksheet: *Dr Who and HD* (1 copy per student).

It is possible to download images from the BBC showing the Doctor in various incarnations. These illustrate the change in resolution very clearly when shown on a digital whiteboard.

### Running the activity

The great advantage of Doctor Who is that he has been around since the days of 405 line TV and a number of videos and clips are available to illustrate these changes in image quality. A great start to the lesson would be a selection of these clips or stills - a number are available from the BBC website.

Most students will feel familiar with the different video formats from adverts but may find the technical meanings of words like resolution and pixels more demanding. Be careful to ensure they have a rigorous understanding rather than a common sense approach.

Hand out the worksheets and let them work through either individually or in groups. A useful point to make during any follow up to this work is that the resolution on HD screens is not much greater than the old 405 lines - because of the larger screen the number of pixels need to be spread over.

### Answers to questions

- 1 a The resolution of an image describes how much detail it can hold: high resolution images show more detail than low resolution images.
- b Phosphor is a chemical which gives out line of a particular wavelength when a beam of electrons hits it.
- c A pixel is the smallest part of an image, usually a dot which can be on or off.

- 2 a 2.1 million.
- b Increased resolution.

3 a	405 line system	20x 20	400	400
	MacBookPro laptop computer monitor	32 x 18	576	1388
	A 1080p plasma television screen	96 x 45	4320	486

- b MacBookPro laptop computer monitor.

- 4 a A pattern of red, blue and green dots and black spaces.
- b A black and white screen would only show white dots and black spaces.