Geography and Technology

1. What does it mean?

Geography is a 'living' subject about the 'here and now' that can be greatly enhanced by technology provided it is used to support and strengthen the geography and not detract from it. Using technology successfully involves the application of devices, machines and technical processes to support geographical enquiry, communication and understanding.

GIS
Geographical information systems (GIS) are devices which can record, log and communicate spatial data. There are three elements to any GIS: a digital map, data located on the map, and a software application (GIS) that links the two together.

See GIS in geography teaching and learning
http://www.geography.org.uk/gtip/thinkpieces/gis/#2

Getting started with GIS  http://www.gis.rgs.org/whatisgis.html

Spatially speaking projects and think pieces using GIS
http://www.geography.org.uk/projects/spatiallyspeaking/furthermaterials/#top

Although these pieces are mainly aimed at those teaching older students they do offer all practitioners a deeper understanding of what this software does and how it works.

GPS
Geographical positioning systems (GPS) are devices that use satellites to accurately pinpoint a location on the Earth. This might be for example a Sat Nav or a Garmin hand held device.

GIS articles in GA journals:
- Creating digital maps with primary pupils (Primary Geography)
- A new look at GIS in the primary classroom (Primary Geography)
- Putting the world in the palm of their hand (Primary Geography)
- HOTShot GIS (Primary Geography)
- Progressive GIS (Teaching Geography)
- Why use GIS? (Teaching Geography)
- Talk the talk: Mapping mobile phone masts with GIS (Teaching Geography)
- The application of UK web-based GIS in geography teaching (Teaching Geography)
- Beyond 2012: using GIS to investigate the sustainability of the Olympic site (Teaching Geography)
- Mapping out the future (Teaching Geography)
- The Journal of Maps (Teaching Geography)
Multi-media technology and digital mapping supports the development of graphicacy, a core skill set that contributes to geographical understanding.

*Graphicacy is the ability to interpret and use visual images, maps, texts, patterns, images, graphs and diagrams.*

**Digital Maps**
Digital maps are maps available online that can be manipulated in terms of scale and orientation. Most digital maps can be annotated, measured and linked to other media.

**Audio and video recorders**
Digital audio and video can be used to capture elements of fieldwork and can be stored online and hyperlinked to maps and reports.

**Infographics**
The representation of information in visually diverse and attractive ways, e.g. a combination of images, graphs and text or using word clouds.

**Internet**
The internet can be used to research and enquire about the world using a range of different sources.

**Data Loggers**
These are devices that measure and gather data such as e.g. temperature.

2. What does effective practice in primary schools look like?

Pupils use appropriate technology confidently and enthusiastically to help them enquire about the world, map it, gather data and communicate with others. They are able to select the best technology for the job and can be critical about its use. Pupils might use:

- *Google earth to investigate where places are and what they are like*
- *digital mapping to enquire about and record information about the world and where they live.*
- *data loggers to record temperature inside school to map hot and cool spots or outside to map micro-climates and decide where is the best place to plant....*
- *digital video and audio devices to log comments, role play, show aspects of fieldwork*
- *cameras to capture environmental features*
- *Hand held GPS devices to do simple treasure hunts*
- *the internet to research and watch information media*
- *communication software such as Wordle or Tagxedo to highlight patterns of words and ideas*
• shared media sites such as Wishing wall just with members of their class to share enquiry questions or YouTube to post a video about their work
• A class Twitter account to represent a place in less than 140 characters, to share a great web link or to ask a question
• A Blogging site to Blog about their geography work
• Interactive White board to draw over images to demonstrate annotated mapping or label features
• a class phone or tablet to use Apps when out in the field such as 'Educreation' that allows you to capture images, draw over them, record animated sequences and record commentary.
• a critical approach when gathering information from different sources on the internet, thinking about bias and accuracy.

See the Young Geographers project where children used audio and video technology to investigate and record their views on the safety of their local area [http://www.geography.org.uk/projects/younggeographers/resources/southborough/](http://www.geography.org.uk/projects/younggeographers/resources/southborough/)


Geographical Association members can view examples of pupils' work and teachers planning on the Primary Geography Quality Mark vle [http://pgqm.geography.org.uk/](http://pgqm.geography.org.uk/)

3. How do we develop effective practice?

• Always foreground the geography.
• Give children time to play and explore digital mapping software and locating and recording devices by making sure they are easily accessible.

• Build on play based exploration by teaching techniques and strategies.
• Use a mix of globes, atlases paper maps and digital mapping software regularly in class.
• Use research based tasks to stimulate enquiry and support learning.
• Update resources.
• Use a progression guide such as that available from OS Digimap for Schools to support appropriate planning.
• Discuss with children if and how technology will enhance their geographical enquiry and develop their ability to select the most appropriate software, application or device for the task.

4. Which resources may be most helpful?

See Appendix 1 for some suggested links.