Unit-4
Where We Are In Place And Time

Central Idea:

People use geographical tools to explore world around them.

LINES OF INQUIRY

Types & function of geographical tools

Exploration/ Advancement of tools over a period of time

Purpose of geographical tools

Attributes of Learner profile:

- Knowledgeable
- Thinkers

Key Concepts:

- Function
- Change
- Causation

Transdisciplinary Skills:

- Research skills
- Thinking skills

Line Of Inquiry

1. Types And Function Of Geographical Tools
2. Purpose Of Geographical tools

What are Geographical tools?

They are tools related to geography, a science that deals with the earth and its life. Commonly used geographic tools are maps, atlases, gazetteers (geographical dictionaries), and postal guides.

Different Geographical tools And their function:

1. Shovels:

Round-edged shovels are used to remove surface material to reveal the strata where the artifacts are expected to be found. When the desired layer is unearthed, flat-edged shovels are used to carefully remove very thin layers of material.

2. Mason's Trowel and Small Pickaxe:

As they get closer to the artifacts, smaller tools are employed. The flat bladed, pointed trowel used in the bricklaying trade allows archaeologists to scrape the soil away in very fine layers. A small pickaxe is sometimes used to loosen compacted soil for easier removal.

Brushes

A variety of brushes are employed. The goal is to remove the dirt from around the artifact and slowly reveal it. Great care must be taken to not damage the artifacts during the excavation process. Stiff brushes, such as paint brushes or whisk brooms, remove larger material. Finer material can be removed from around the artifact with soft bristled artist's brushes.

4. Paper and Plastic Bags:

Artifacts are placed in bags and labelled with the location where they were found.

5. Buckets, Dustpans, Wheelbarrows:

Soil removed from the site is transported away, as the excavation proceeds down to the next layer.

6. Shaker Screens:

These are constructed of 3/8 inch or 1/4 inch wire mesh. Dirt is loaded onto the screen. It is then shaken so the soil falls through the mesh allowing the artifacts—even tiny ones—to remain. Again, any artifacts found during this process are placed in bags and labelled according to the location that theu came from.

Camera:

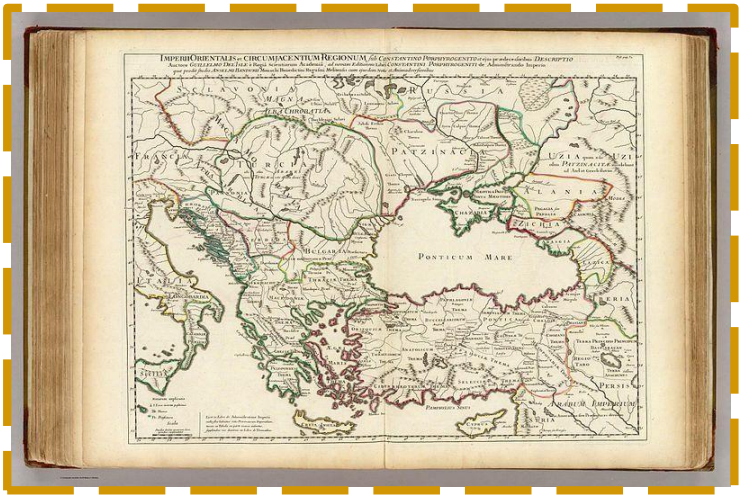
Pictures are taken of artifacts as they are being removed in an excavation site. It is important to understand the site around where the artifact was found when scientists study it back in the lab. The relative position of various artifacts provides important information for later study, helping archaeologists piece together a picture of how people of that time period lived.

8. Map:

It is a flat representation of a part of Earth. Geographers use many types of maps. Maps can show lots of different information, including locations of places in the world. Maps use projection to display a round object (Earth) on a flat surface (map). Cartographers (map makers) have long struggled to find the most accurate projection to use on maps.

9. Atlas:

An atlas is a book of maps. It contains maps of the world or a region of the world. Some atlases also include more information about the places they include in the maps. Atlases can be very helpful for traveling, instead of bringing many maps, you can bring one atlas.



10. Globe:

It is a model of the Earth used to avoid distortions in spatial relations on the world. Maps of the world are distorted during the process of plotting a round object on a flat surface. A globe is round, so it remains accurate. The globe provides an accurate scale of how far apart locations are. A globe can be used to compare the size of different locations.

11. Aerial Photography :

It is a technique of photographing the Earth's surface or features of its atmosphere or hydrosphere. Aerial photographs are photographs taken from the sky and used to take measurements or create maps. They can be taken with cameras mounted on aircraft, rockets, or Earth-orbiting satellites, spacecraft, balloons, or even kites.

Valuable data on topography, geology, hydrology, soil and vegetation, meteorology, ocean currents, and fish resources have become accessible with it. Views of cloud patterns obtained from orbiting satellites are valuable in weather forecasting. Aerial photography also has vital military reconnaissance and intelligence-gathering applications.

10. Surveying Transit:

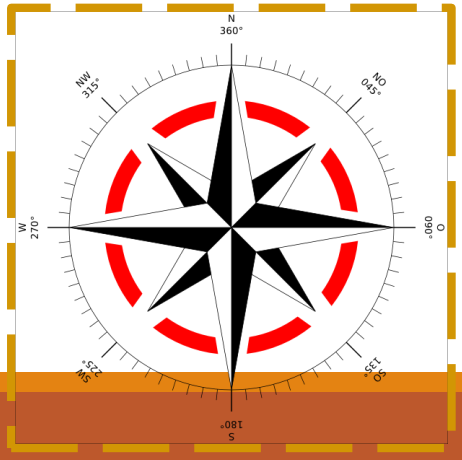
It is also called as theodolite. Itis a precision optical instrument for measuring angles between designated visible points in the horizontal and vertical planes. The traditional use has been for land surveying, but they are also used extensively for building and infrastructure construction, and some specialized applications such as meteorology and rocket launching. A Surveying transit is an optical instrument, or a telescope, complete with a built-in spirit level that is mounted on a tripod. Transit levels are used mainly for surveying and building, but they can be used to determine the relative position of lines and objects as well.

They are very precise and are used to establish a reference line, but they are also used to provide readings of angles in precise measurements.

11. Compass Rose :

It is a tool to find direction. It is sometimes called a windrose, or Rose of the Winds, is a figure on a compass, map, nautical chart, or monument used to display the orientation of the cardinal directions: North, East, South, and West—and their intermediate points. It is also the term for the graduated markings found on the traditional magnetic compass.

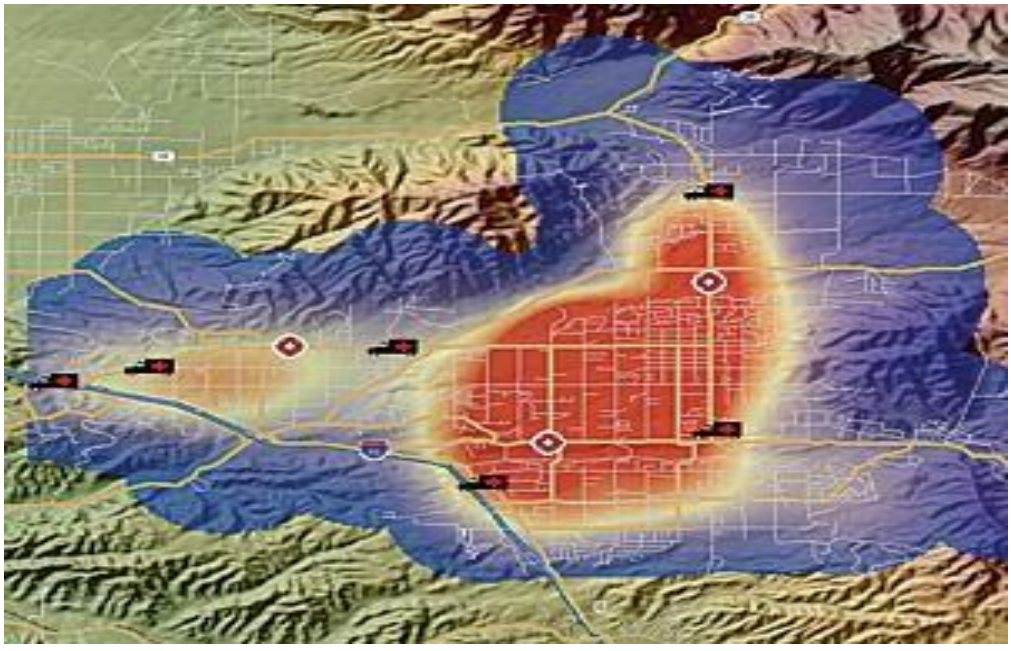
Besides navigation, the compass is used in building and construction for marking landmarks and borders, and to measure horizontal lines and vertical lines for maps. The compass is a valuable tool used in the military, Navy etc. as well as in mining to assist in underground navigation.



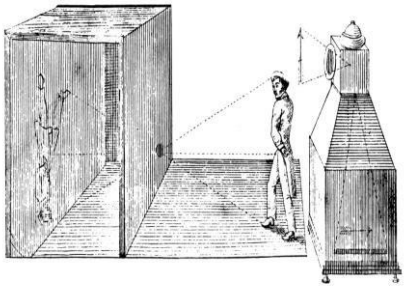
3. Exploration/ Advancement of tools over a period of time.

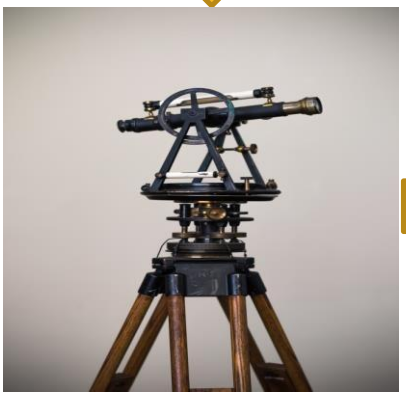
The invention of computers as information processing tools and the development of GIS have measurably assisted geographers in their work.
These new tools are being added to the discipline. The advancement of the tools of GIS has impacted the discipline of geography.

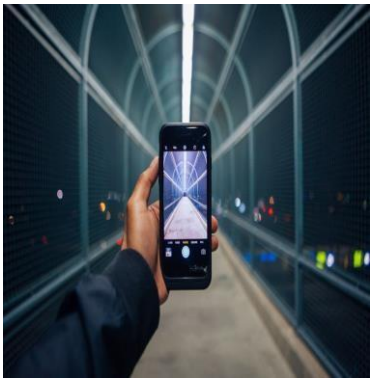
For Example: The process of prepositioning ambulances for better service is one way in which GIS is used to examine spatial situations.



Advancement of camera over time





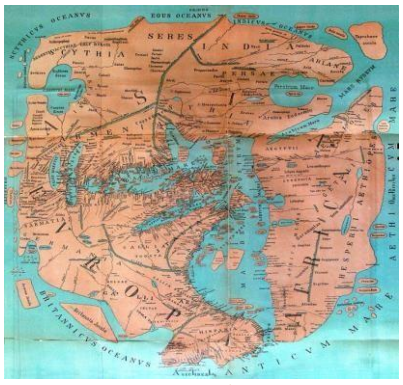


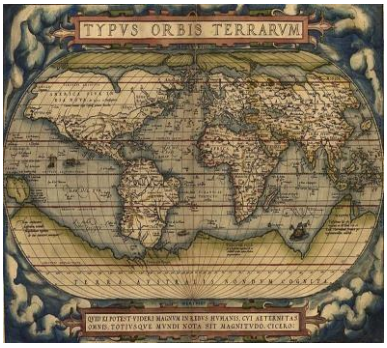
Long before traditional cameras, people employed camera obscuras. Images projected using this natural phenomenon were larger than normal but inverted. In 1816, Nicephore Niepce successfully made a partial photograph using a camera he built, and a paper coated with silver chloride. Instant cameras, such as the famous Polaroid, first appeared on the market in 1948.

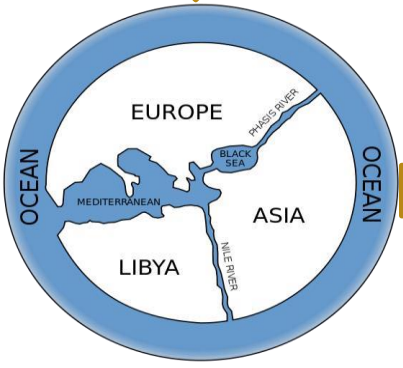
Unfortunately, the history of the digital camera is far too dense to cover in its entirety here, but to give you a rough idea of where they started: the very first digital cameras stored their images on floppy disk.

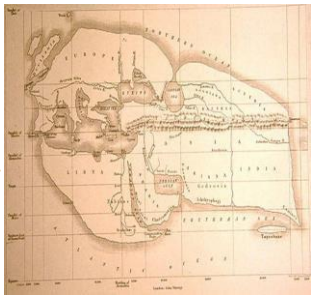
It's hard to imagine where cameras will go from here when now professional-grade images can be produced with nothing but a timer button and a selfie stick. At the same time, however, it's fascinating to think that just over 200 years ago, photographs, as we know them, were still experimental. Technology can change drastically in a short amount of time; maybe in ten years' time, we'll have camera eyes.

Advancement of maps over time









Humans have long recognised the importance and value of maps to their lives. Indeed, the history of mapping can be traced to more than 5,000 years ago. Maps are essentially tools which:
for the map maker, record the location of places of interest. for others, are a source of learning about the geography of the mapped area.
The oldest recorded route that we have evidence is a 9ft wall painting, found in 1963 of a town plan, showing buildings and a volcano, found in Anatolia, dated 6100-6300BC.

Compared to modern maps, early maps:

1. Depicted small areas (a city, a trade route, a hunting ground, a military campaign etc.)
2. Were pictorial in nature. While they look crude compared to modern maps, they were able to show the features that the map maker wished to record.
3. Had no rules relating to how they were oriented – modern maps usually have north at the top.
4. The relationship between features on the map and reality on the Earth was often not accurate.

Modern maps

Using modern satellite systems and surveying techniques, contemporary cartographers are now able to measure and map with very high precision and consistency. As a result, maps have become absolutely critical to most fields of human endeavour.

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