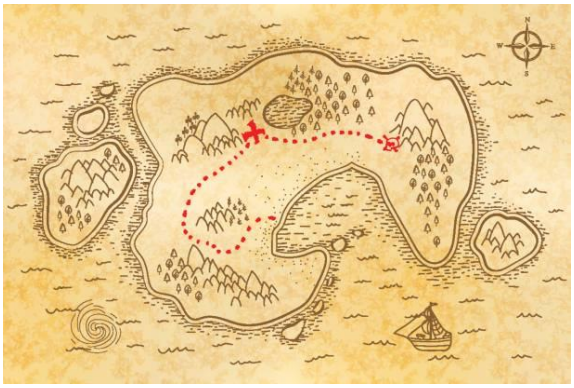
SCIB 265L History of Science
FA19 Week 4: Spanish Empire Mapmaking



NAME: _____
Section: _____

PURPOSE: Using the tools of the Spanish Empire, determine the latitude of Dean College and create a map of the area.

Increase understanding of accuracy and precision and the experimental concept of repeatability.

VOCABULARY:

Accuracy: how true a measurement is to the actual value

Precision: how close multiple measures are to each other

Gnomon: the projecting piece on a sundial that shows the time by the position of its shadow.

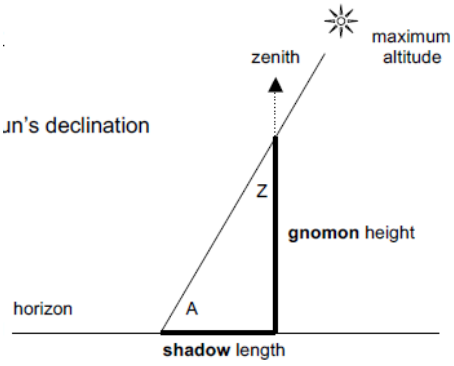
ACTIVITIES:

Part 1: Calculating latitude

Each group will be given a gnomon and shadow length.

1. Use a protractor to measure the angle A

_____



2. Go to http://www.reuk.co.uk/wordpress/solar/solar-declination/ and look up the solar declination for today.

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3. Calculate latitude using the formula

latitude = (90° - angle A) + sun's declination

4. Go to the World Atlas and find out where you are!

Part 2: Drawing a map

Step One: Draw a map of Dean College in the downtown Franklin area on the overhead projector sheet provided.

Include:

- Major streets
- Horne Hall
- Campus Center
- Davis Thayer Elementary
- Union St Cemetery
- The Library Learning Commons
- Science Building
- Ray Building
- Dean Hall
- Grant Field
- the Triads
- the Franklin Library
- Post Office
- Town Common
- North-South-East-West
- relative distances
- any additional features which you noted from walking around town

Step Two: Maps will be overlaid on the document camera using the Science Building as our common feature.