1. SCALE AND DISTANCE

Scales are using to measure distance on a map or real life is a fundamental skill in studying maps. The way how to show how much smaller a map is than the actual area is to use scale.

A scale on a map shows what proportionate size has been used to make the map.

Scale on a map shows you

* How big the map is in comparison to the real place (every centimeter on this map means 100km on the ground)
* ***Distance*** – how closer or far apart places are
* ***Time*** – how long it might take you to get to a place.

There are 3 types of Scale

i. Words/ Statement

Example: one centimeter = one kilometer This means that 1cm on the map is the same as 1km on the ground

ii. Ratio/ Representative Fraction

Example: 1:100 000 This means that 1cm on the map is the same as 1km on the ground because the map is 100 000 times smaller than the place

iii. Line/ Linear Scale

Example: 0 1 2 3 4 5 Kilometers (km) This means that 1cm on the map is the same as 1km on the ground

Activity

Use the map below to answer the following questions

a. Identify the type of scale used.

_____

b. Use the map above to calculate the distance between these places. Give your answer in miles.

i. Hobart – Melbourne _____

ii. Brisbane – Sydney _____

iii. Wellington – Hobart _____

iv. Adelaide – Canberra _____

v. Auckland – Christchurch _____

CONTOUR LINES/ CROSS SECTION

Relief – the general term describing the shape of the land, including height and steepness.

- The main techniques used by cartographers to show relief are spot heights, contour lines and patterns.

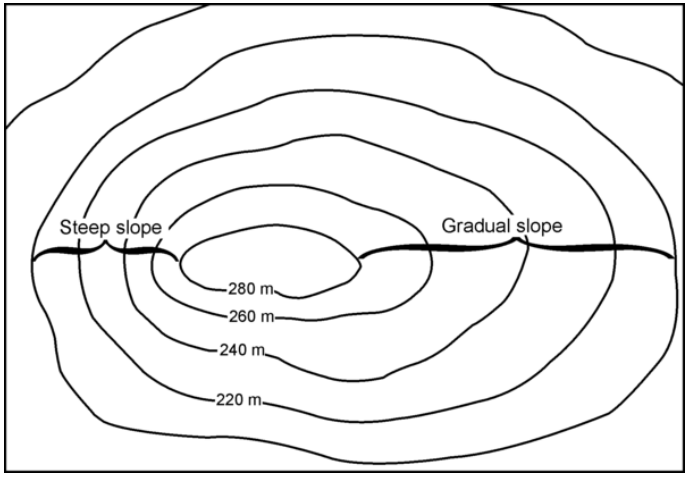
Spot Height

- Shows on a map as a black dot with the exact altitude or height written next to it.

Contour Lines

- Joint places of equal heights above sea level
- Every point along the line has the same heights
- Provide geographers with information about the shape and slope of the land.

Contour interval – the differences in heights between 2 adjacent contour lines.

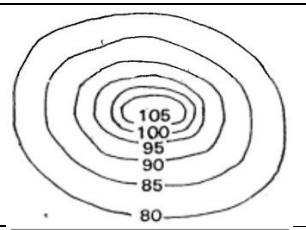
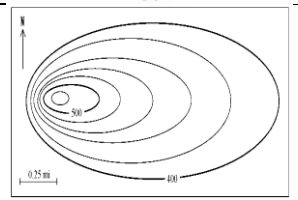
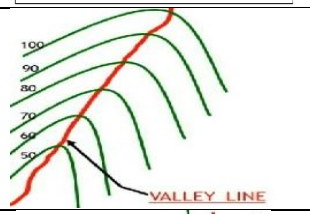
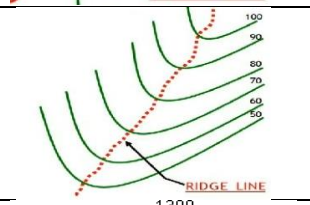
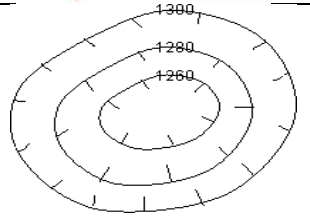


Calculating contour interval

240 – 220 = **20**

The contour interval is 20m

Contour Lines of common features

Hills & Mountains Contour lines get higher towards the middle		
Steep slopes have contour lines close together because the height goes up quickly over a short area.		
Valley has a V-shaped pattern on its contour lines; the Vs point uphill		
Ridge has A-Shaped pattern on its contour lines: the Vs point downhill		
Depression (hole) has contour lines with heights getting lower instead of higher: contour lines have small marks on them pointing towards the middle.		

Remember:

- The closer the contour lines the steeper the hills are
- The far apart the contour lines the flatter the shape of the land

Activity

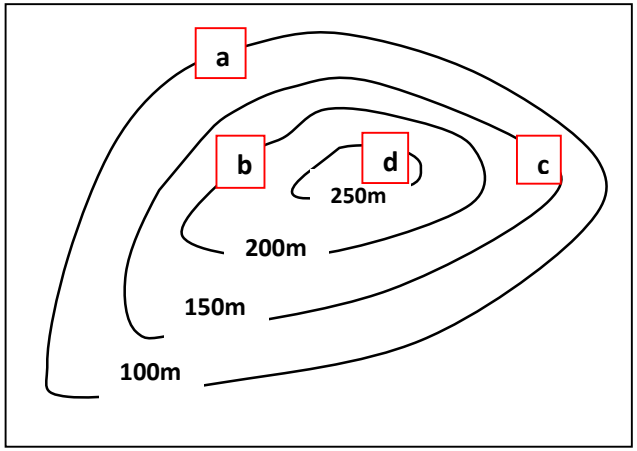
1. Give the height of the points marked

a. _____

b. _____

c. _____

d. _____



2. Identify the contour interval

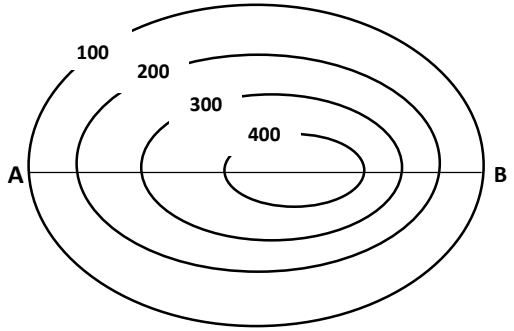
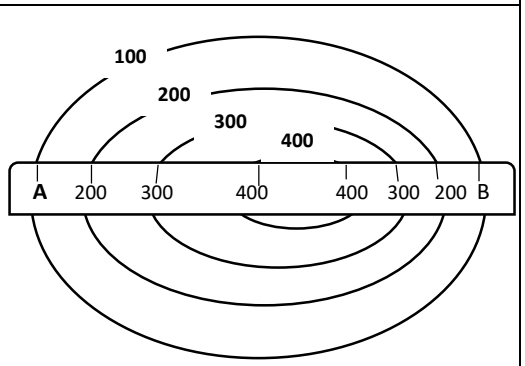
_____

_____

Cross – Sections

- ✓ a side-view or profile of a landscape
- ✓ starts out from a map and ends up a graph
- ✓ is made using contour lines
- ✓ gives a picture of the relief – where land goes up and down
- ✓ is called a cross section

How to draw a cross section

Aim: to draw a cross – section of the island along the A-B line. (*ko ho'o taumu'a ke ke ta e cross-section pea mei a laine A kia B*)	
1. put straight edge of a piece of paper along the line. (*fokotu'u ha ki'I la'ipepa 'I 'olunga 'o lele meia **A** kia **B***) **2.** each time a contour line crosses the paper mark the paper with a line and the height *(taimi kotoa pe 'e kolosi ai e contour line he ki'I la'I pepa, pea ke maaka'I he pepa 'aki ha laine pea hiki fakatatau pe he tafa'aki e laine takitaha hono ma'olunga.)*	

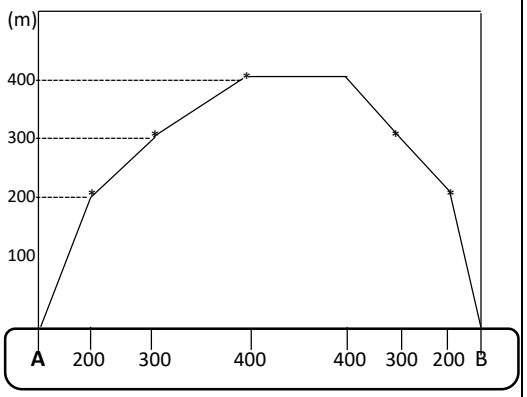
3. draw a vertical and horizontal axis for a graph
(ta e line x moe y axis)

4. label vertical axis in meters
(fakafika e laine vetikale 'I he mita)

5. put paper with contour lines along horizontal axis
(ngaue'aki leva e ki'i la'ipepa na'ake ngaue'aki 'ia fika 1 mo 2 ke faka'ilonga'I'aki e contour line ke ke hili o fakatatau ki he laine holisonitalee.)

6. put crosses on graph to show height of contours.
(faka'ilonga'I leva 'I he kalafii 'a e ma'olunga 'o e contour takitaha)

7. join crosses with a line. This is your cross-section.
(ta leva e laini loloa ke hoko 'aki e ngaahi poinii, mei A ki a B, pea teke ma'u leva ai ho'o cross-section)

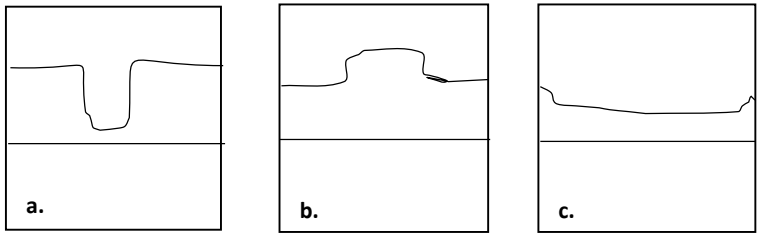


(Plateau)

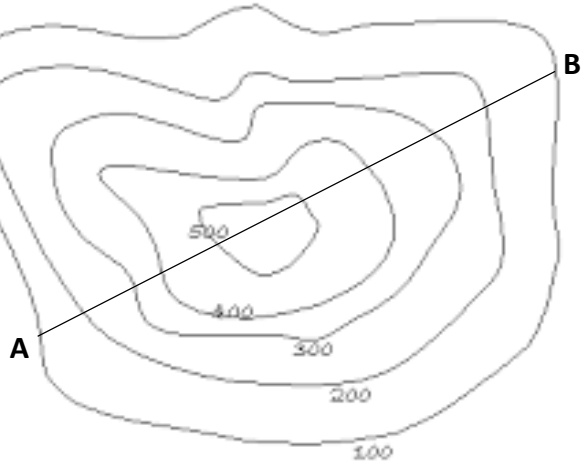
(Plain)

Activity

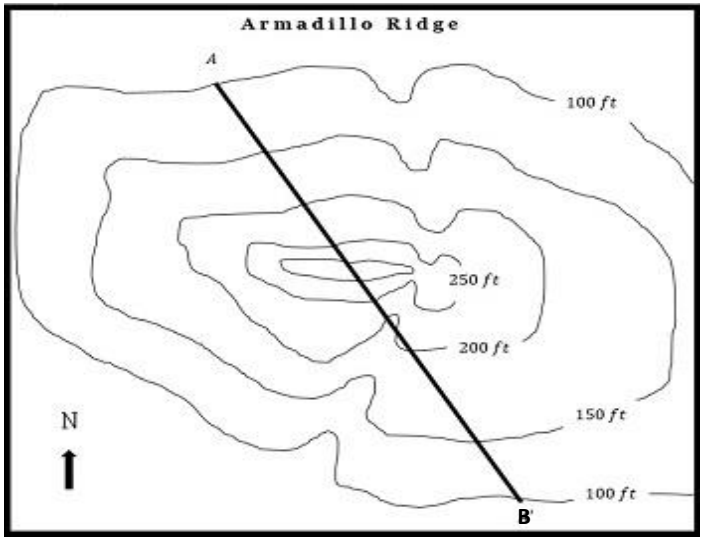
1. Label the following cross-sections with river, plateau or plain. Colour them in:



2. i. Construct a cross-section from line **A** to **B.** *(Do this activity in your exercise book)*



ii.



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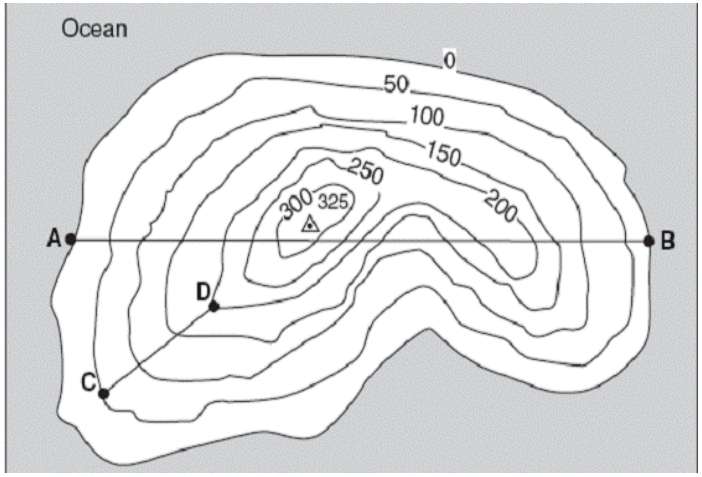
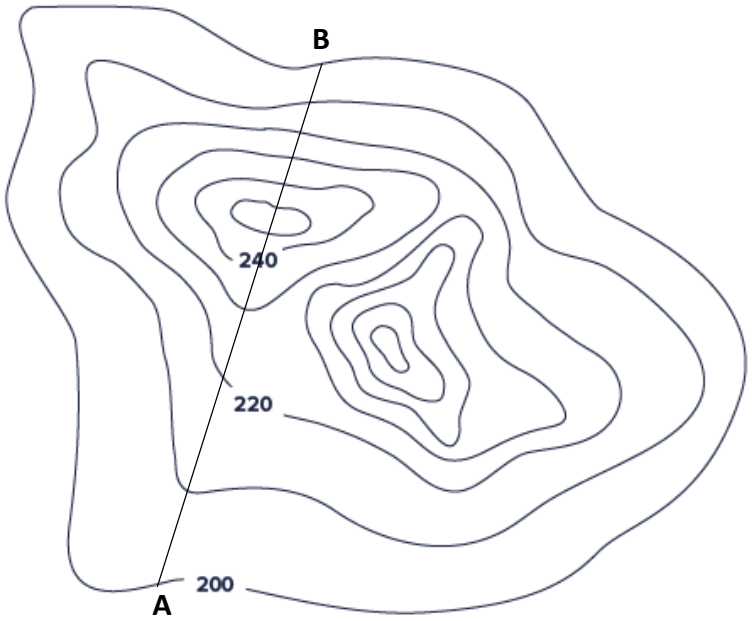


iv.



3. What happens when contour lines are close together?

_____

_____

4. What happens when the contour lines are far apart?

_____

_____

DIRECTIONS

Direction - The point towards which you face or move

Compass – an instrument used to find direction; it has magnetized needle that point North

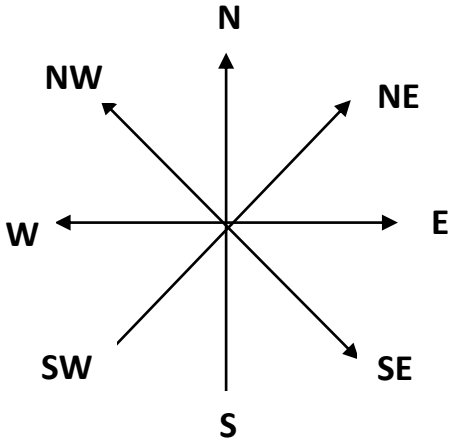
Compass rose – the pattern on a map that shows the direction of north; its name comes from the way points of a compass look like the arrangement of petals of a rose flower.

Cardinal Points (main points) – is the primary direction of the compass

- has 4 main points: North (N), South (S), West (W), East (E)

*The **NEWS** that you read in the paper and see on TV comes from all parts of the world – North, South, West, and East.*

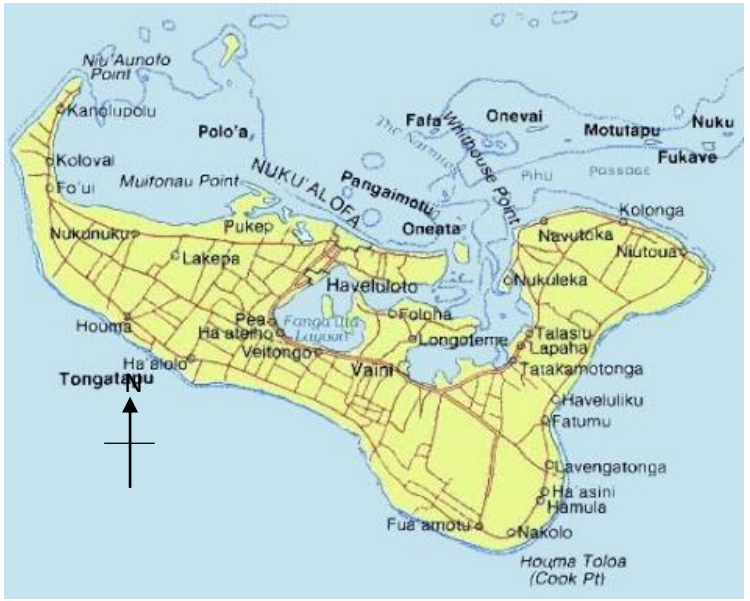
Intermediate Points – a point between the cardinal directions: (North East (NE), North West (NW), South East (SE), South West (SW)



Activity

1) Add the following compass points to the diagram of the compass rose. They are in order of where they fit. For example, NNE fits between N and NE. NNE, ENE, ESE, SSE, SSW, WSW, WNW, NNW.

2) Use the map below of Tongatapu to answer the following questions



i. The direction finder is at the _____ of Kolovai.

ii. If Sione were to drive from Fua'amotu to Pea, which direction would he go?
_____

iii. Lakepa is located on the _____ of Niutoua.

iv. Vaini is located on the _____ of Kanokupolu.

v. Haveluloto is located on the _____ Longoteme.

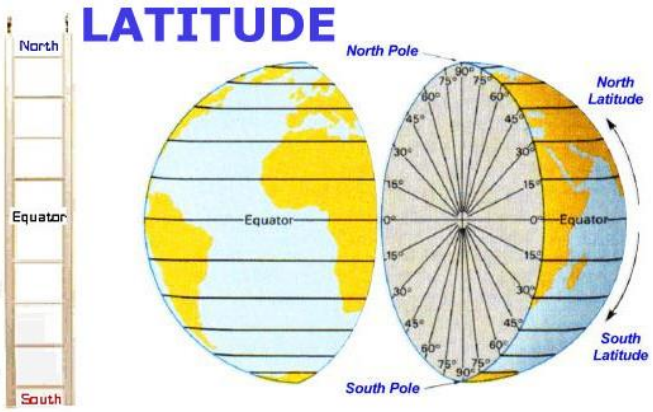
vi. Fanga'uta lagoon is located on the _____ part of Tongatapu.

vii. To which direction would Peter travel if he went from Hamula to Fatumu?
_____

LATITUDE and LONGITUDE

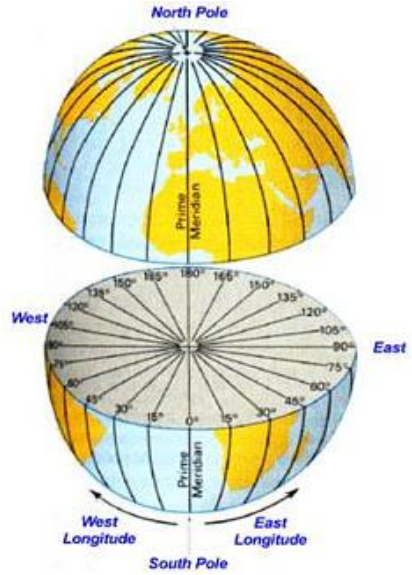
❖ Latitude

- ✓ a horizontal line that runs from West to East
- ✓ run parallel to each other around the earth
- ✓ the **Equator** is the 0 degree line of latitude and it divides the world into 2 hemisphere – the ***Northern Hemisphere*** and ***Southern Hemisphere***.
- ✓ the other lines of latitude go North and South of the equator.
- ✓ The North Pole is 90 degrees north and the South Pole is 90 degrees south



❖ Longitude

- ✓ vertical lines that run from North to the South
- ✓ they are also called meridians of longitude
- ✓ the 0 and 180 degree line divide the world into 2 hemispheres called the ***Eastern Hemisphere*** and ***Western Hemisphere***
- ✓ 0 – Prime Meridian
- ✓ 180 – International Dateline



Activity

Write down the names of the following shown on the globe.

a. _____the Pole

b. _____Hemisphere

c. _____a line going from Pole to Pole

d. _____the line going round the middle

e. _____a line going around the globe

f. _____the Hemisphere

g. _____the Pole