What is a bed

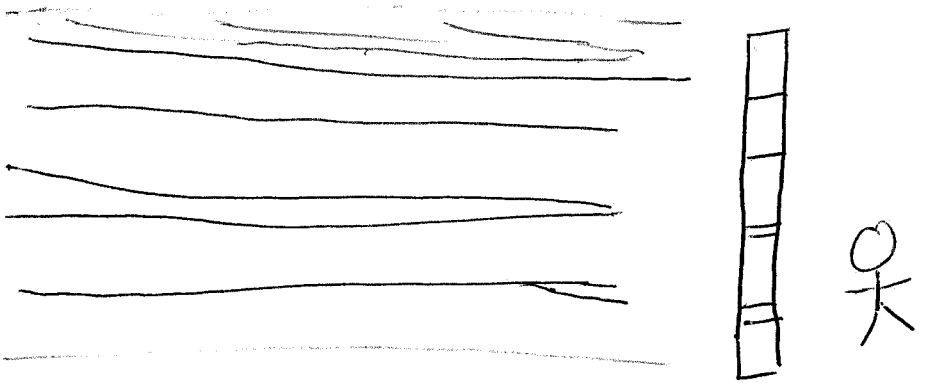
defined by base

top is the base of next bed

You have to decide

remember to step back to

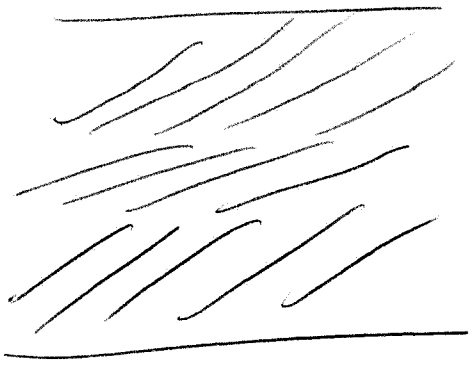
see the whole exposure



IS the one bed

: with three partings

OR 3 beds ?



IGNORE or BEWARE top of exposure

because of soil formation

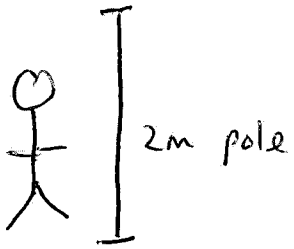
frost shattering

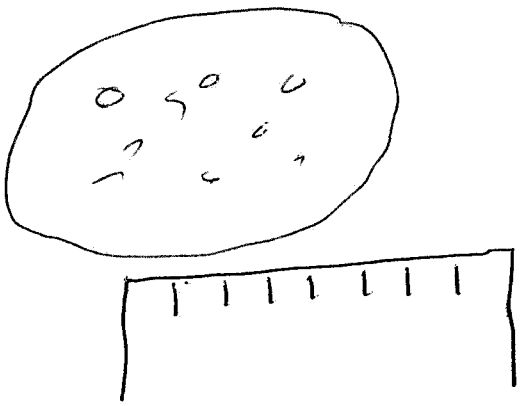
slumping

Take photos too

and include a scale

Remember children grow and coins change

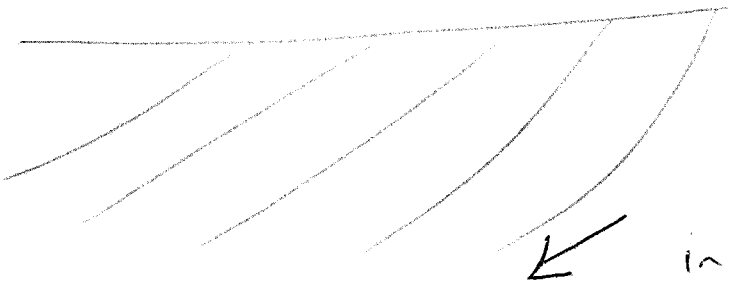




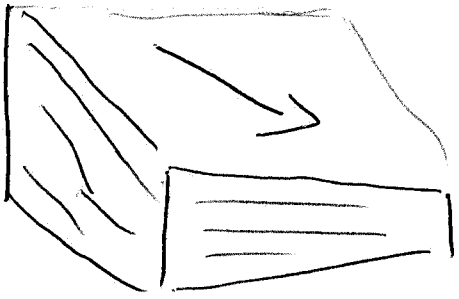
grain size card

Dip and Strike & direction

Dip is measured from horizontal



apparent dip in 2D



true dip in 3D (Maximum)

(water will run in this direction)

Strike is horizontal plane at 90° to Dip

Record dip as degrees & Direction

eg 15° NNW

or 270° 345°N

Things to Record

Grain size

- clay ≤ 2μm
- silt - 63μm - tastes slightly gritty
- sand - 2mm
- granules - 4mm
- pebbles - 64mm
- cobbles - 256mm
- boulders

Colour - Munsell chart if ya have one
- record wet in the field
- colour different when dry
- colour different if re-wetted

Mineralogy - dominant minerals or reworked rock clasts

Take significant samples - have numbering system
- removed weathered surface
- use clean tools
- use clean bags
- label & relabel

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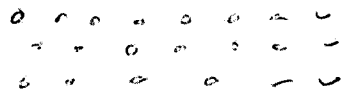
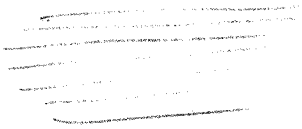
Sorting

Poorly sorted

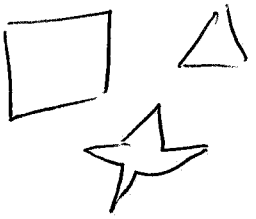


well sorted



layered (varve like)

Shape

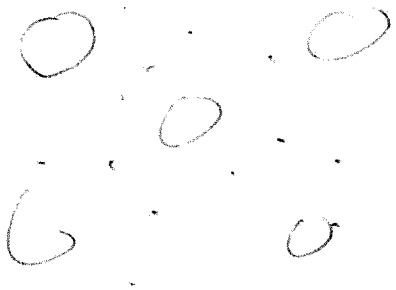


Angular

Sub angular

Sub rounded

well rounded



Matrix supported

eg "boulder clay"

clast supported

eg Gravel

try to estimate percentages

eg 20% clasts in silt

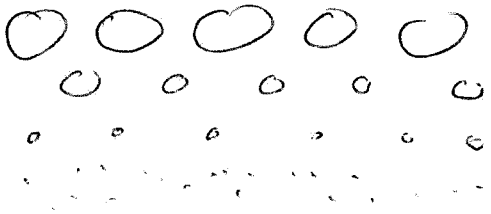
Counting clasts eg in boulder clay

Numbers → percentages

chalk	25%
Sandstone	35%
black igneous	20%
coal	5%

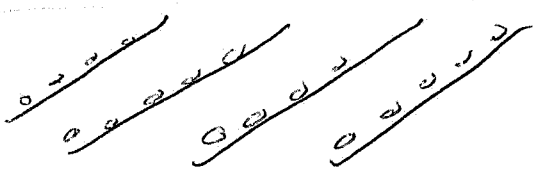
How many to avoid bias?

grading



coarsening upwards

fining upwards

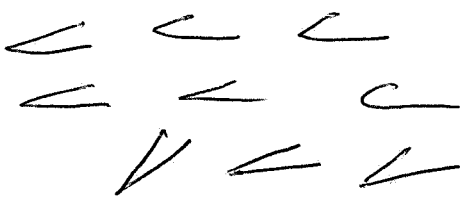


cross bedded

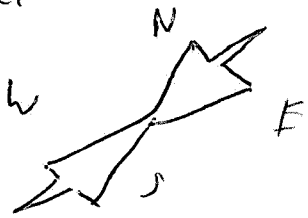
horizontal

Measure Dip + Dip direction

Look for alignments of long axis



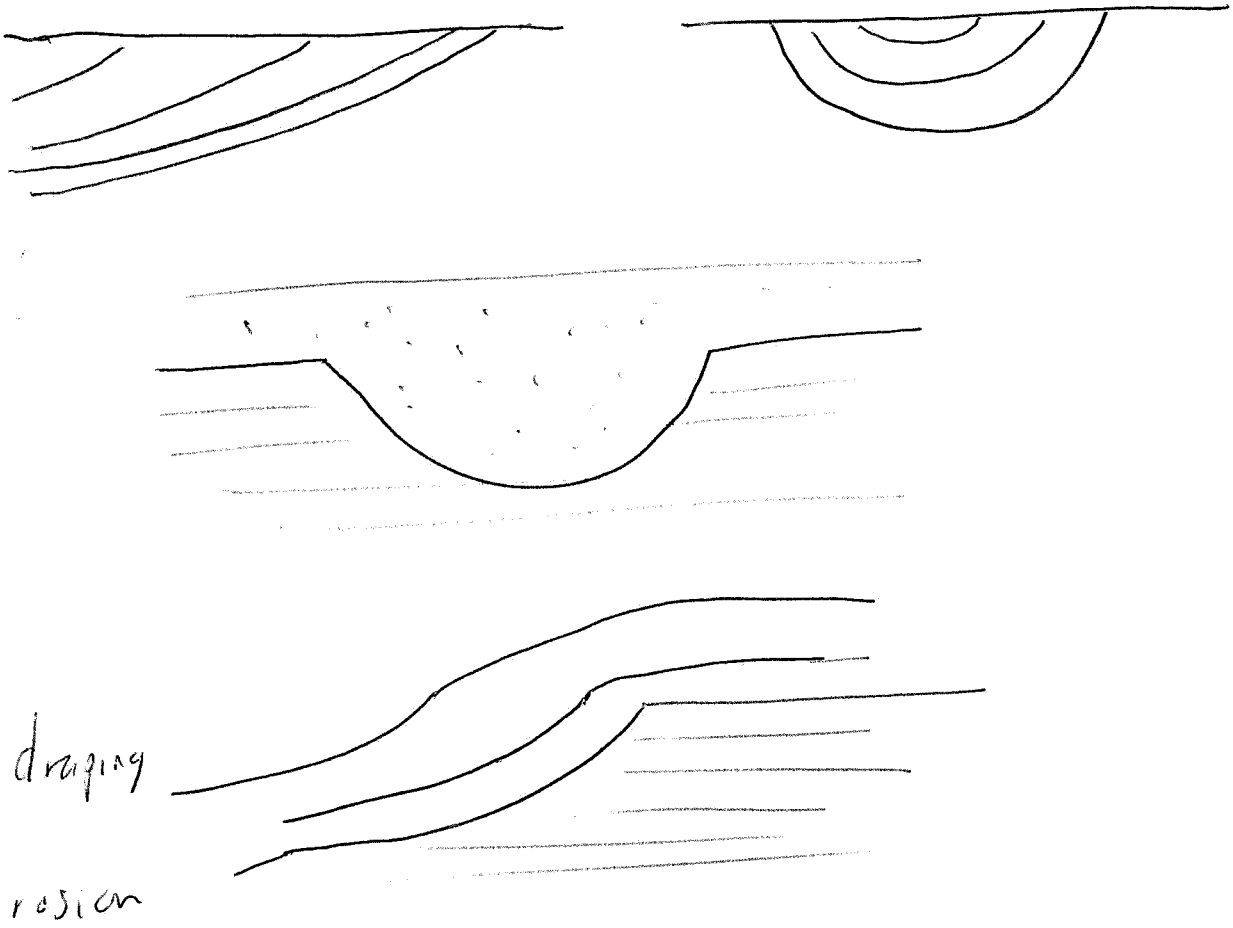
ROSE CHART



record several to see average + variation

Base

look for erosional features



These notes were written for the Hull Geological Society Bisat Research Project and were presented at a HGS Club Night on 27th February 2020.

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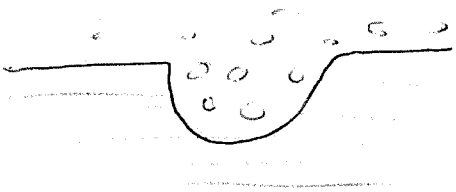
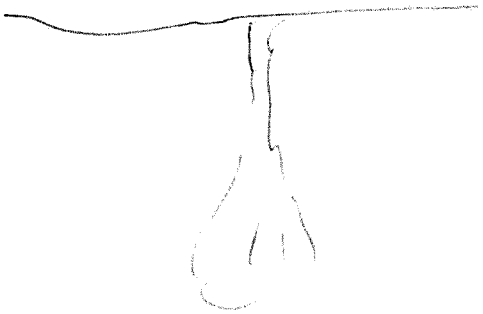
Other Stuff

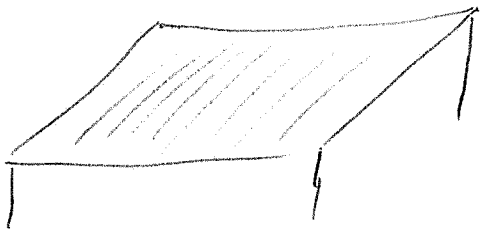
Slumping



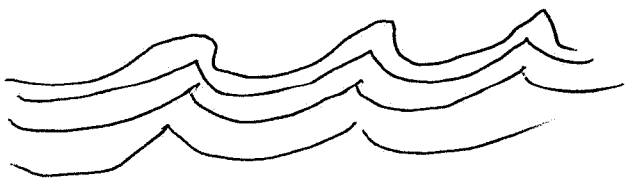


Water escape Structures

sole marks



current lineation



ripple marks

tectonics

deformation due to pushing

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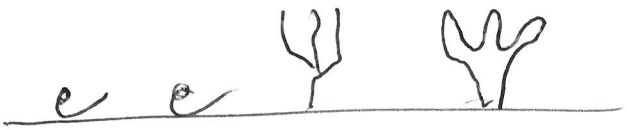
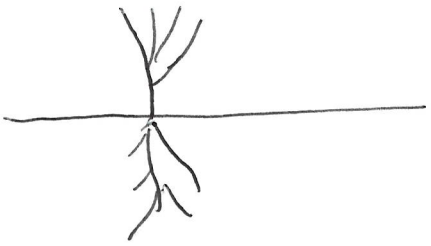
Basal surface

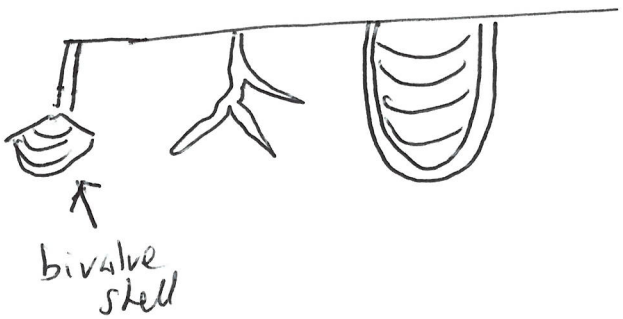
look for burrows, borings, soils, cracks
footprints, encrusting & roots



oysters, corals
bryozoans



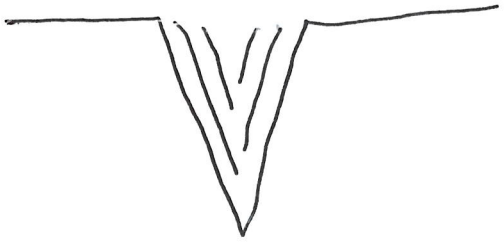
plant roots - plant
may not have survived



burrows

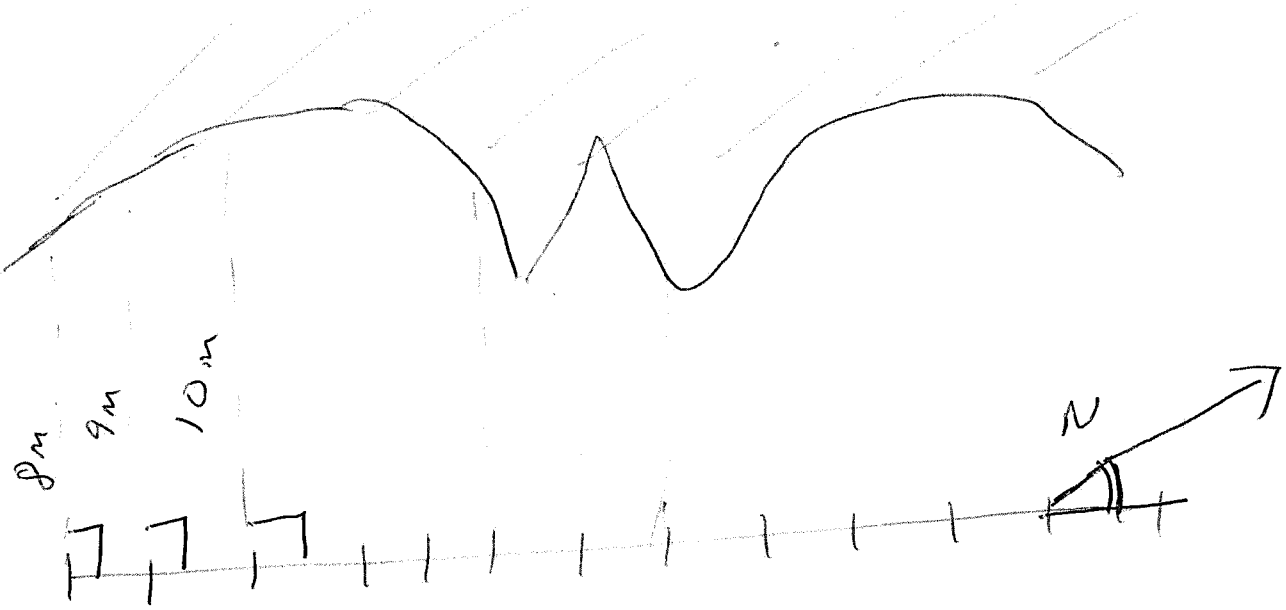
borings ⇒ lithified surface

Soils imply - aerial
weathering



ice wedge casts

dessication
crack

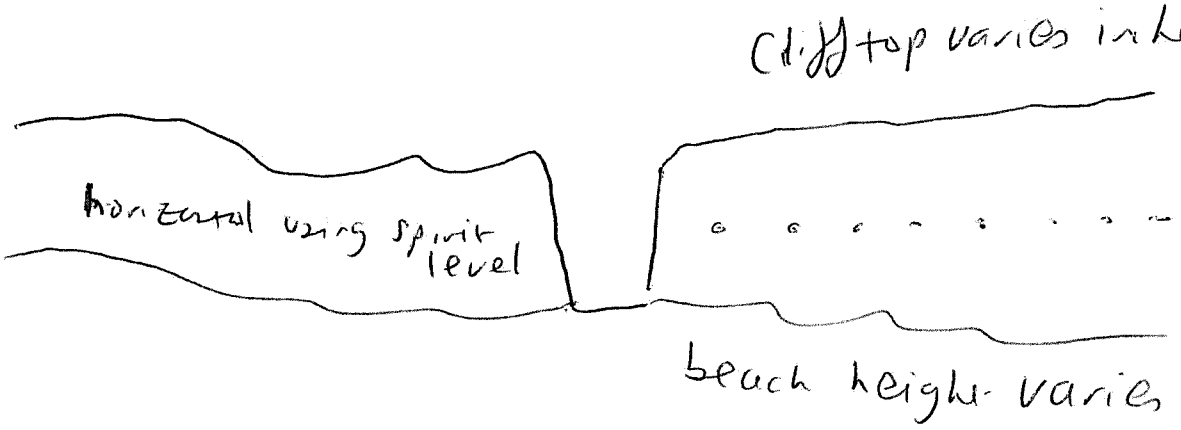


Direction of our line

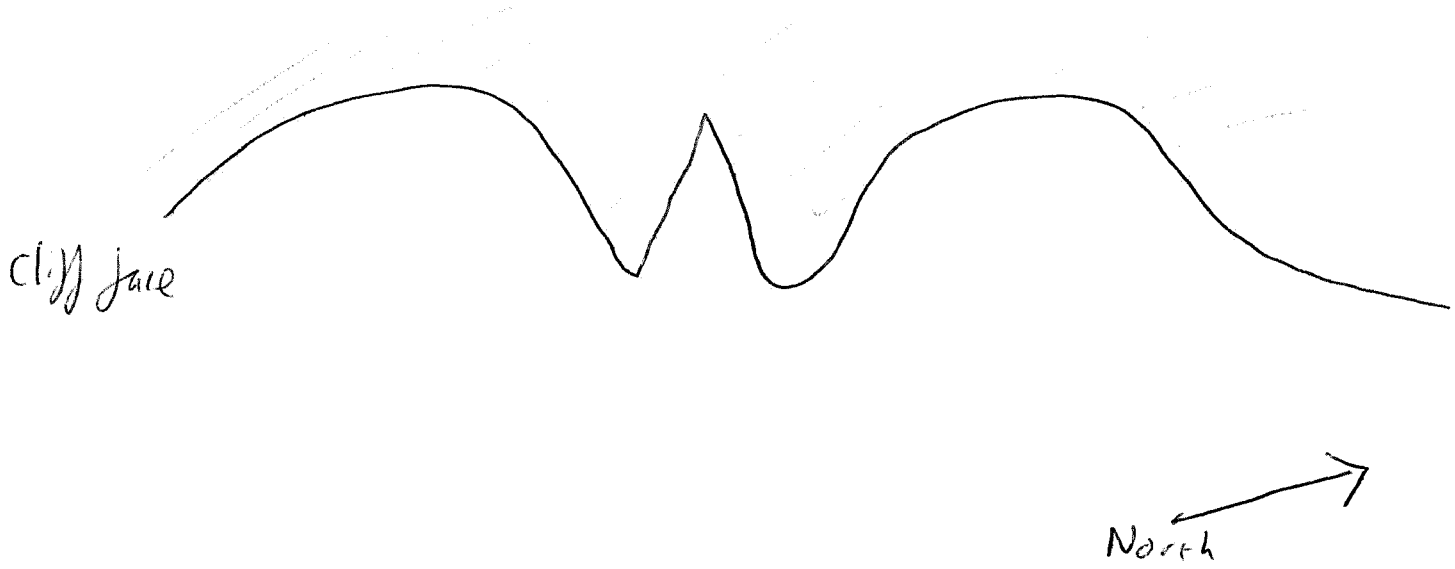
distance at right angles to cliff

Measure more frequently if more variety

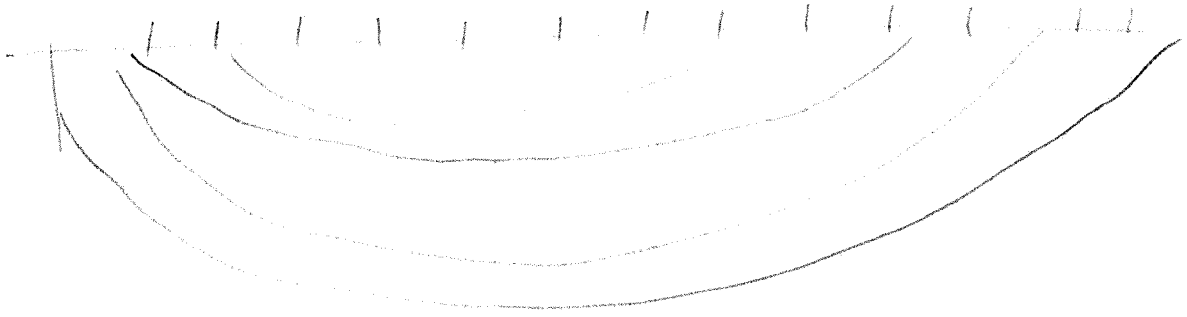
Establish horizontal line on the exposure



getting it right in 3D



if we measure every metre of cliff we will get a distorted log



should be