

The fieldwork component

Context

Purpose and value of fieldwork and how it relates to the course

[Terms](#)

[Enquiry process](#)

Geographical skills

Terms

Primary data

Data collected in the field (by you/your group)

Secondary data

Data that has already been processed in published materials

Terms

Quantitative data

Data that can be measured and counted – and is readily processed using graphs, maps and statistics

Qualitative data

Data that does not have a numerical value, e.g. opinions, comment, descriptions... which is therefore not very easy to process.

It is valuable as it can provide a context for quantitative data.

It can sometimes be encoded it to make limited processing possible (e.g. by categorising people's views/opinions

The Enquiry Process

1. **Context & planning** – identifying/refining questions; choosing suitable locations; deciding on collection methods; risk assessments
2. **Data collection** – acquiring data pertinent to the investigation with an appropriate balance between primary & secondary, and quantitative & qualitative
3. **Presentation & display** – using appropriate methods to enable...
4. **Analysis & interpretation of findings** – interrogate data to identify & describe patterns, trends and relationships; apply concepts & processes to understand observed data
5. **Conclusion** – synthesise/summarise findings to draw conclusions relating to original questions
6. **Evaluation of the whole investigation** – critically reflect on every stage of the investigation to appreciate strengths & limitations; consider accuracy, validity & reliability of methodology and findings; suggest improvements for further research

Planning the South Wales fieldwork

The South Wales Fieldtrip

The equivalent of two days of fieldwork: 2 half days + 1 whole day

Physical Geography:

Investigating glacial and periglacial landforms in Craig Cerrig-gleisiad in the Brecon Beacons (**Glaciated Landscapes**)

½ day

Investigating beach characteristics at Port Eynon (**Coastal Landscapes**)

1 day

Investigating sand dunes at Port Eynon (**Ecosystems at the Local Scale**)

Human Geography:

Investigating rural settlements on the Gower (**Changing Places**)

½ day

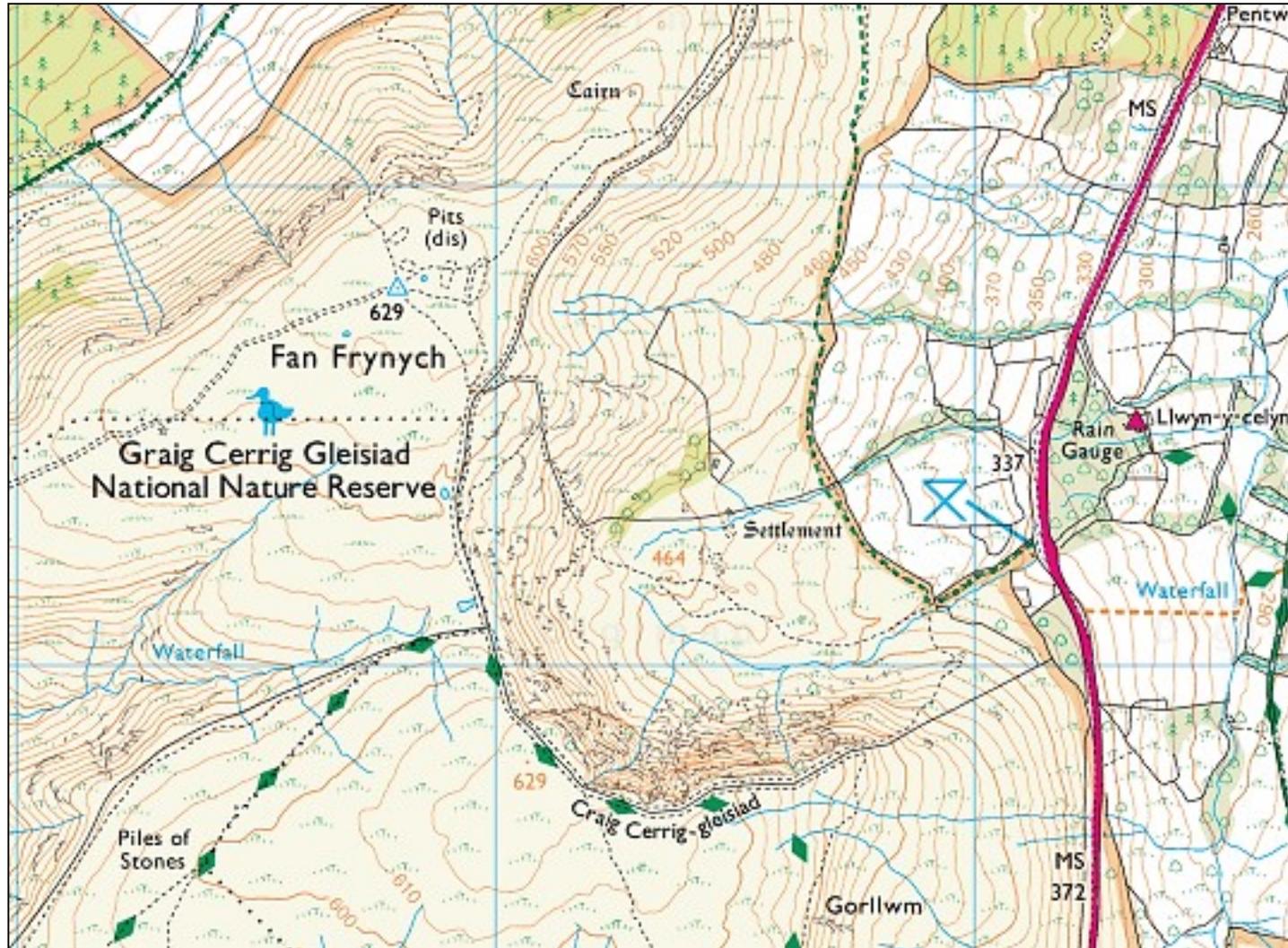
Group work for the physical investigations: 3 groups of 5

Investigating glacial and periglacial landforms in Craig Cerrig-gleisiad

Craig Cerrig-gleisiad



Craig Cerrig-gleisiad



Glaciated Landscapes - 1

What are the depositional landforms in Craig Cerrig-gleisiad?



Glaciated Landscapes - 1

What are the depositional landforms in Craig Cerrig-gleisiad?



Glaciated Landscapes - 1

What are the depositional landforms in Craig Cerrig-gleisiad?



Glaciated Landscapes

Background

Craig Cerrig-gleisiad is a north-east facing cirque (cwm) in the central area of the Brecon Beacons.

An investigation of some of the glacial and periglacial landforms should help to give an insight into how this landscape has been formed by processes during and after the last ice age.

Glacial deposition features are likely to have been formed during the last stages of the ice age – possibly during the Younger Dryas (aka the Loch Lomond re-advance).

Periglacial features are likely to be the result of processes active during the later stages of the ice age (as the ice gradually disappeared) – but will also have been acted upon ever since. At this altitude and orientation, some periglacial processes will still be operating today in this area.

Glaciated Landscapes - 1

What are the depositional landforms in Craig Cerrig-gleisiad?

Context

What are the links to the course?

1.2.6 “Landforms and landscapes of glacial deposition including types of till (ablation, lodgement and deformation) and types of moraine (terminal, recessional, lateral, medial and push) and drumlins”

Background research of glaciation in this area:

e.g. <https://bcur.org/journals/index.php/TPSS/article/view/645/566>

General background reading of possible glacial features and their characteristics:

e.g. Student Guide bk2

Always keep a detailed record of the sources you have looked at/read so they can be accurately referenced in your final piece.

Glaciated Landscapes - 1

What are the depositional landforms in Craig Cerrig-gleisiad?

Methods of field investigation

- What characteristics might you be looking for?
- What qualitative and quantitative data could you [collect](#) to help identify these landforms?
- What sampling strategy could you use?
- What equipment will you need?

Data presentation of findings

- How could you present your data to “support the analysis of [your] findings”?
- What (if any) adjustments are needed to your data collection methods to allow these to be done?

Glaciated Landscapes - 1

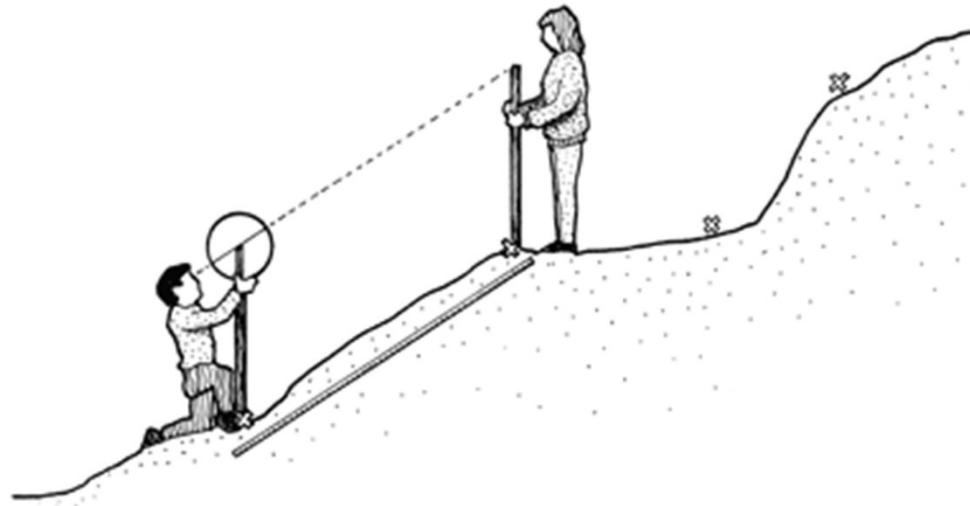
What are the depositional landforms in Craig Cerrig-gleisiad?

Possible data presentation techniques:

- Field sketches and annotated photos. A good guide on how to draw effective field sketches:

http://pcwww.liv.ac.uk/geo-oer/index_htm_files/Field%20sketches%20&%20how%20to%20draw%20them.pdf

- Measuring slopes to draw profiles: have a look at the FSC website (beach profiles: <https://www.geography-fieldwork.org/a-level/coasts/coastal-management/method/#profile>)



Glaciated Landscapes - 1

What are the depositional landforms in Craig Cerrig-gleisiad?

Risk Assessment (including ethical issues)

- Discuss in your group: suggest possible/potential risks and how they might be sensibly managed.
- What ethical issues might there be to conducting fieldwork at this location?

Glaciated Landscapes - 1

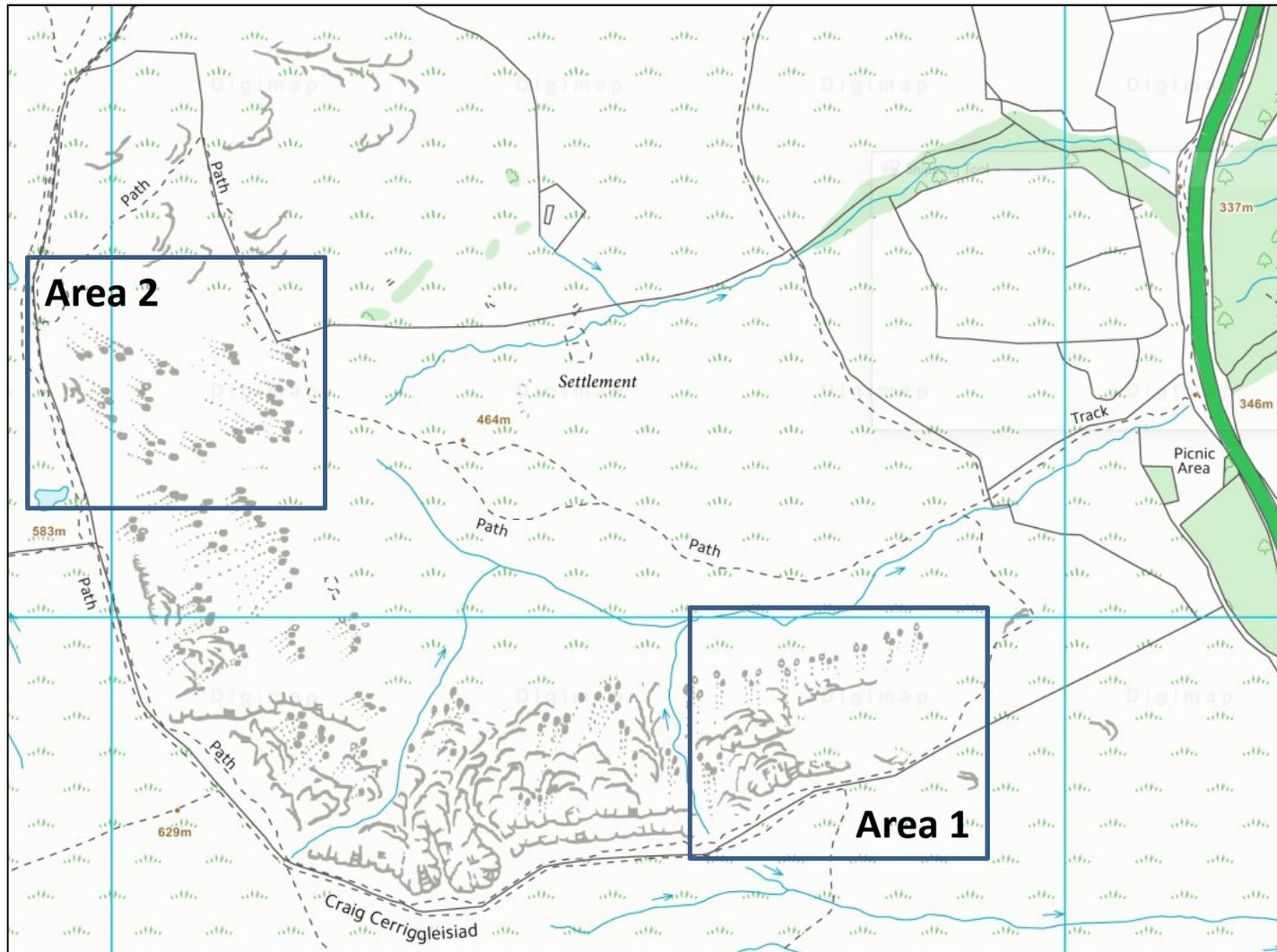
What are the depositional landforms in Craig Cerrig-gleisiad?

Group task 1:

- 1. Based on the previous discussion, devise a suitable fieldwork strategy to collect sufficient data to address the research Q – you will about 1-2hrs to collect the data...*
- 2. Create data capture sheets to record your primary data during the fieldwork*
- 3. Produce an equipment list.*

Glaciated Landscapes - 2

An investigation of the scree slopes at Craig Cerrig-leisiad



Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad



Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad



Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Context

What are the links to the course?

1.2.8 “Frost weathering and mass movement can lead to features including nivation hollows, blockfields and scree slopes, pro-talus ramparts, solifluction terraces and head deposits”

Background research of glaciation in this area:

e.g. <https://bcur.org/journals/index.php/TPSS/article/view/645/566>

General background reading of the formation and characteristics of scree slopes:

e.g. Student Guide bk2

Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Context

From this background research, what aspects of these scree slopes could be investigated?

Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Context

From this background research, what aspects of these scree slopes could be investigated?

- *To what extent are the slopes in the two areas different? (why might they be?)*
- *Are the clasts significantly bigger at the bottom of the slope? (ditto)*
- *Are the upper slopes steeper than the lower slopes? (ditto)*

Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Methods of field investigation

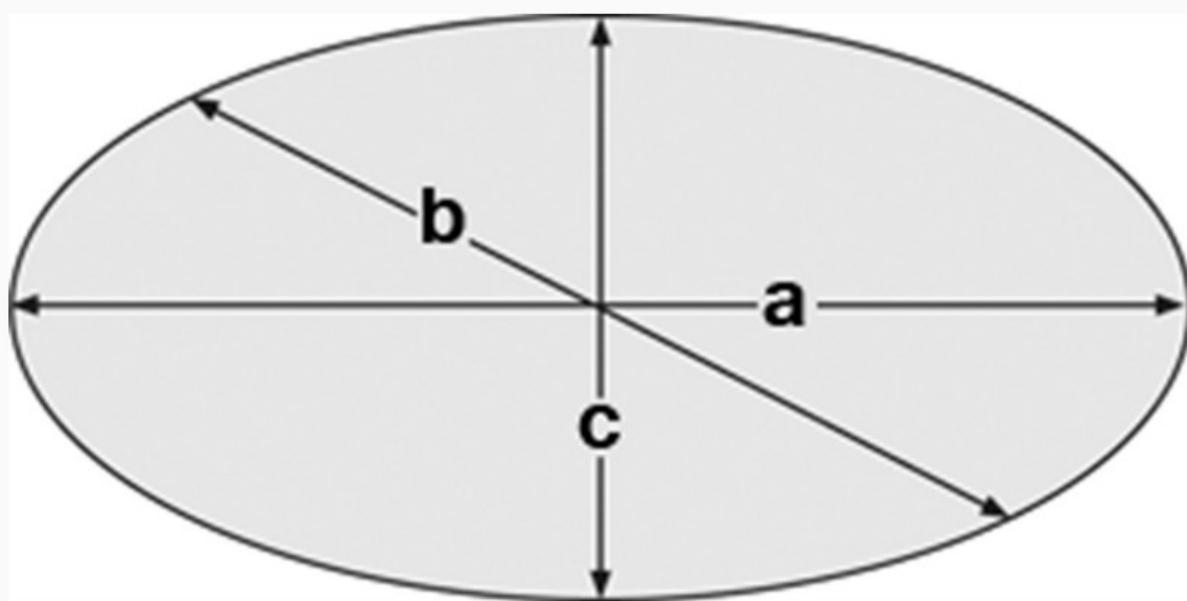
- What qualitative and quantitative data could you collect to answer the sub-questions?
- How will you collect this data?
- What sampling strategy could you use?
- What equipment will you need?

Data presentation (and analysis) of findings

- How could you present your data to “support the analysis of [your] findings”?
- How could you analyse your data to see how (significantly) different they are?
- What (if any) adjustments are needed to your data collection methods to allow these to be done?

Measuring coarse sediment size

Techniques for measuring sediment size:



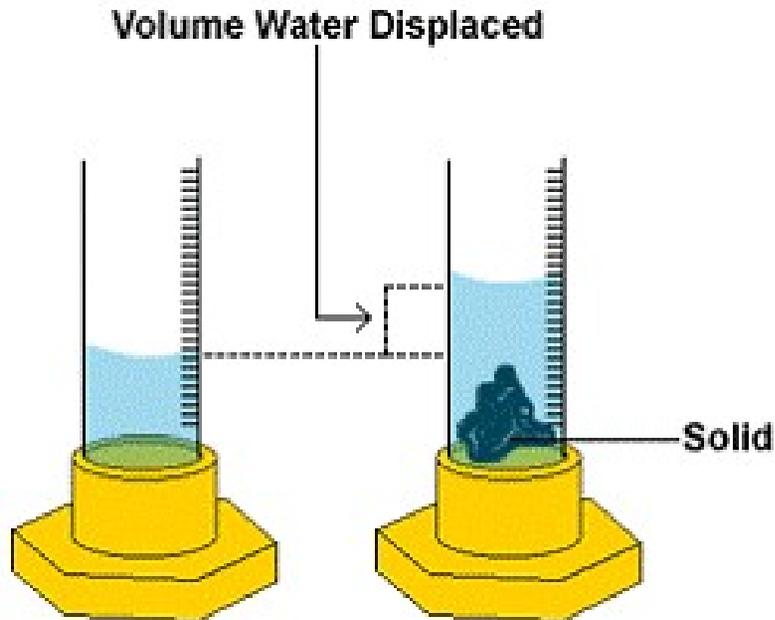
Equipment needed?
Issues?

- a-axis = the longest side – the a-axis of a person is their height from head to toe
- b-axis = The second longest side – the b axis of a person is from shoulder to shoulder
- c-axis = The shortest side – The c-axis of a person is from front to back through their belly button

<https://www.geography-fieldwork.org/gcse/coasts/coastal-processes/fieldwork/>

Measuring coarse sediment size

Measuring volume by displacement:



Equipment?

Issues?

(The main one at this location is that there's no ready source of water for use in displacement, so we'll have to stick to axis measurements)

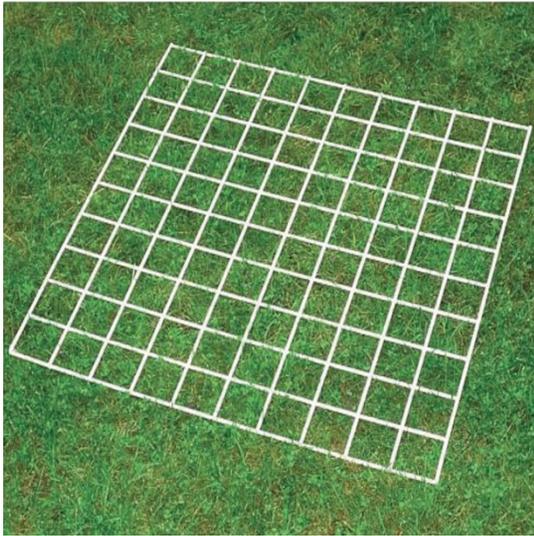
http://homepage.smc.edu/walker_muriel/measurements_in_the_laboratory%20Procedure.htm



Sediment sampling

You can't measure every clast in the scree slopes, so you will need an appropriate method to help you select a representative sample in a way that avoids bias.

A useful piece of equipment would be a quadrat:



How could this be used to select clasts?

How many clasts should you aim to measure?

What should be considered in making this decision?



Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Comparing data sets – possible data presentation techniques

Dispersion diagrams

Mean + standard deviation (technically analytical techniques)

Box (and whisker) plots (for which interquartile range & median would be needed – also technically analytical techniques)



Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Comparing data sets

Mann Whitney u test

- Used to determine if two quantitative data samples are significantly different.
- Sets can be of different sizes but it works best if there is less than 20 in each set.

Chi-squared test

- A named technique in the specification so you need to be able to use it.
- Used to determine if there is a significant difference between the data you have collected (the observed data) and what would be expected if it was randomly distributed
- Data needs to be in grouped frequencies and there must be at least 20 pieces of data.



Glaciated Landscapes - 2

Mann Whitney u test

1. State hypothesis, H_1 (there is a difference) and convert to null hypothesis, H_0 (there is no difference)
2. Calculate the u values for each of the two samples:
 - i. Rank all values as one list, irrespective of which sample they occur in.
 - ii. Sum the ranks in each sample separately
 - iii. Calculate a value of u for sample 1 using this formula:
$$u_1 = n_1 n_2 + n_1(n_1+1)/2 - \Sigma r_1$$
Where: u_1 = the u value for sample 1
 n_1 and n_2 are the number of values in samples 1 and 2, respectively
 Σr_1 is the sum of values for sample 1
3. Repeat for sample 2.
4. Discard the larger of the two u values.
5. Compare smaller value against critical values for size of data set to determine the significance of the result.
6. Accept/reject null hypothesis depending on this outcome.



Glaciated Landscapes - 2

Statistical Tables: Mann-Whitney U-test

Reject your null hypothesis if your test statistic is **below** the critical (tables) value

Sample 1	α	Sample 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3	10%		0	0	1	2	2	3	4	4	5	5	6	7	7	8	9	9	10	11
	5%		-	-	0	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8
4	10%		-	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	18
	5%		-	0	1	2	3	4	4	5	6	7	8	9	10	11	11	12	13	13
5	10%		-	-	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
	5%		-	-	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	10%		-	-	-	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
	5%		-	-	-	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	10%		-	-	-	-	11	13	15	17	19	21	24	26	28	30	33	35	37	39
	5%		-	-	-	-	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	10%		-	-	-	-	-	15	18	20	23	26	28	31	33	36	39	41	44	47
	5%		-	-	-	-	-	13	15	17	19	22	24	26	29	31	34	36	38	41
9	10%		-	-	-	-	-	-	21	24	27	30	33	36	39	42	45	48	51	54
	5%		-	-	-	-	-	-	17	20	23	26	28	31	34	37	39	42	45	48
10	10%		-	-	-	-	-	-	-	27	31	34	37	41	44	48	51	55	58	62
	5%		-	-	-	-	-	-	-	23	26	29	33	36	39	42	45	48	52	55
11	10%		-	-	-	-	-	-	-	-	34	38	42	46	50	54	57	61	65	69
	5%		-	-	-	-	-	-	-	-	30	33	37	40	44	47	51	55	58	62
12	10%		-	-	-	-	-	-	-	-	-	42	47	51	55	60	64	68	72	77
	5%		-	-	-	-	-	-	-	-	-	37	41	45	49	53	57	61	65	69
13	10%		-	-	-	-	-	-	-	-	-	-	51	56	61	65	70	75	80	84
	5%		-	-	-	-	-	-	-	-	-	-	45	50	54	59	63	67	72	76
14	10%		-	-	-	-	-	-	-	-	-	-	-	61	66	71	77	82	87	92
	5%		-	-	-	-	-	-	-	-	-	-	-	55	59	64	67	74	78	83
15	10%		-	-	-	-	-	-	-	-	-	-	-	-	72	77	83	88	94	100
	5%		-	-	-	-	-	-	-	-	-	-	-	-	64	70	75	80	85	90
16	10%		-	-	-	-	-	-	-	-	-	-	-	-	-	83	89	95	101	107
	5%		-	-	-	-	-	-	-	-	-	-	-	-	-	75	81	86	92	98
17	10%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	102	109	115
	5%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	93	99	105
18	10%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	109	116	123
	5%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	106	112
19	10%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	123	130
	5%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	113	119
20	10%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	138
	5%		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	127



Glaciated Landscapes - 2

Chi-squared test

1. State the hypothesis, H_1 (there is a difference)
2. Null hypothesis, H_0 (there is no difference)
3. [Calculate chi-squared](#)
4. Compare value against [critical values](#) for size of data set to determine the degree of [significance](#).
5. Accept/reject null hypothesis accordingly.



Glaciated Landscapes - 2

Calculating chi-squared

1. Put your observed data, O , into a *contingency table*:

Category	1	2	3	4	5	Row Total
Sample 1						
Sample 2						
Column Total						(Overall Total)

2. Complete the table by adding up the column totals and row totals.

Glaciated Landscapes - 2

3. Calculate the expected value (E) for each cell using the following formula:

$$(\text{row total} \times \text{column total}) / \text{overall total}$$

Give values to at least 1 decimal place.

4. Compare the observed data and expected value for each cell using this formula:

$$(O-E)^2 / E$$

5. Add these up to give a chi-squared value for the whole table.
6. Work out the degrees of freedom (don't ask!): $(\text{rows}-1) * (\text{columns}-1)$



Glaciated Landscapes - 2

Statistical Tables: Chi-Squared

Reject your null hypothesis if your test statistic is **above** the critical (tables) value

df	0.1	0.05	0.025	0.01	0.005
1	2.706	3.841	5.024	6.635	7.879
2	4.605	5.991	7.378	9.210	10.597
3	6.251	7.815	9.348	11.345	12.838
4	7.779	9.488	11.143	13.277	14.860
5	9.236	11.070	12.832	15.086	16.750
6	10.645	12.592	14.449	16.812	18.548
7	12.017	14.067	16.013	18.475	20.278
8	13.362	15.507	17.535	20.090	21.955
9	14.684	16.919	19.023	21.666	23.589
10	15.987	18.307	20.483	23.209	25.188
11	17.275	19.675	21.920	24.725	26.757
12	18.549	21.026	23.337	26.217	28.300
13	19.812	22.362	24.736	27.688	29.819
14	21.064	23.685	26.119	29.141	31.319
15	22.307	24.996	27.488	30.578	32.801
16	23.542	26.296	28.845	32.000	34.267
17	24.769	27.587	30.191	33.409	35.718
18	25.989	28.869	31.526	34.805	37.156
19	27.204	30.144	32.852	36.191	38.582
20	28.412	31.410	34.170	37.566	39.997
21	29.615	32.671	35.479	38.932	41.401
22	30.813	33.924	36.781	40.289	42.796
23	32.007	35.172	38.076	41.638	44.181
24	33.196	36.415	39.364	42.980	45.558
25	34.382	37.652	40.646	44.314	46.928
26	35.563	38.885	41.923	45.642	48.290
27	36.741	40.113	43.194	46.963	49.645
28	37.916	41.337	44.461	48.278	50.993
29	39.087	42.557	45.722	49.588	52.336
30	40.256	43.773	46.979	50.892	53.672



A brief explanation about significance testing:

With some statistical tests (like Chi-squared, Mann Whitney and Spearman's Rank) it is possible that a result could have occurred by chance.

You need to work out this size of this probability as this will tell you how significant your result is.

If this probability is low enough, H_0 can be rejected and H_1 accepted.

In many cases, a probability of 10% (or 0.1) is not considered significant enough to reject the null hypothesis confidently, especially with small sample sizes.

The lower probability (e.g. 5% or 0.01) the more significant the result.

The more significant the result, the more confident you can be that rejecting the null hypothesis is a valid decision.



Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Risk Assessment (including ethical issues)

- Discuss in your group and suggest possible/potential risks and how they might be sensibly managed.
- What ethical issues might there be to conducting fieldwork at this location?

Glaciated Landscapes - 2

An investigation of the screes at Craig Cerrig-gleisiad

Group task 2:

- 1. Based on the previous discussions, devise a suitable fieldwork strategy [sequence, what data, collection method, how much data, sampling technique] to collect data to address the research Q(s) – you will about 1-2hrs to collect the data...*
- 2. Create data capture sheets to record your primary data during the fieldwork – consider how the raw data may be analysed and include columns to help you do this.*
- 3. Produce an equipment list.*

Investigating beach forms and processes

Location



Port Eynon



Port Eynon



Coastal Landscapes

To what extent does the beach at Port Eynon match expectations?

Context

What are the links to the course?

1.1.3 *“Low energy coastal environments and associated depositional landforms and landscape systems including sandy coastlines and estuarine coastlines”*

1.1.6 *“Processes of coastal transport of solution, suspension, saltation and traction including longshore drift. Characteristics of coastal landforms and landscapes both for and beyond the UK including beaches...”*

Background research of coastal processes and landforms in this area:

e.g. <https://intranet.royalhospitalschool.org/resource.aspx?id=672095> – A Geo Factsheet

General background reading of coastal processes, landforms and their characteristics (many internet/textbooks with this info – GCSE?)

Coastal Landscapes

To what extent does the beach at Port Eynon match expectations?

Risk Assessment (including ethical issues)

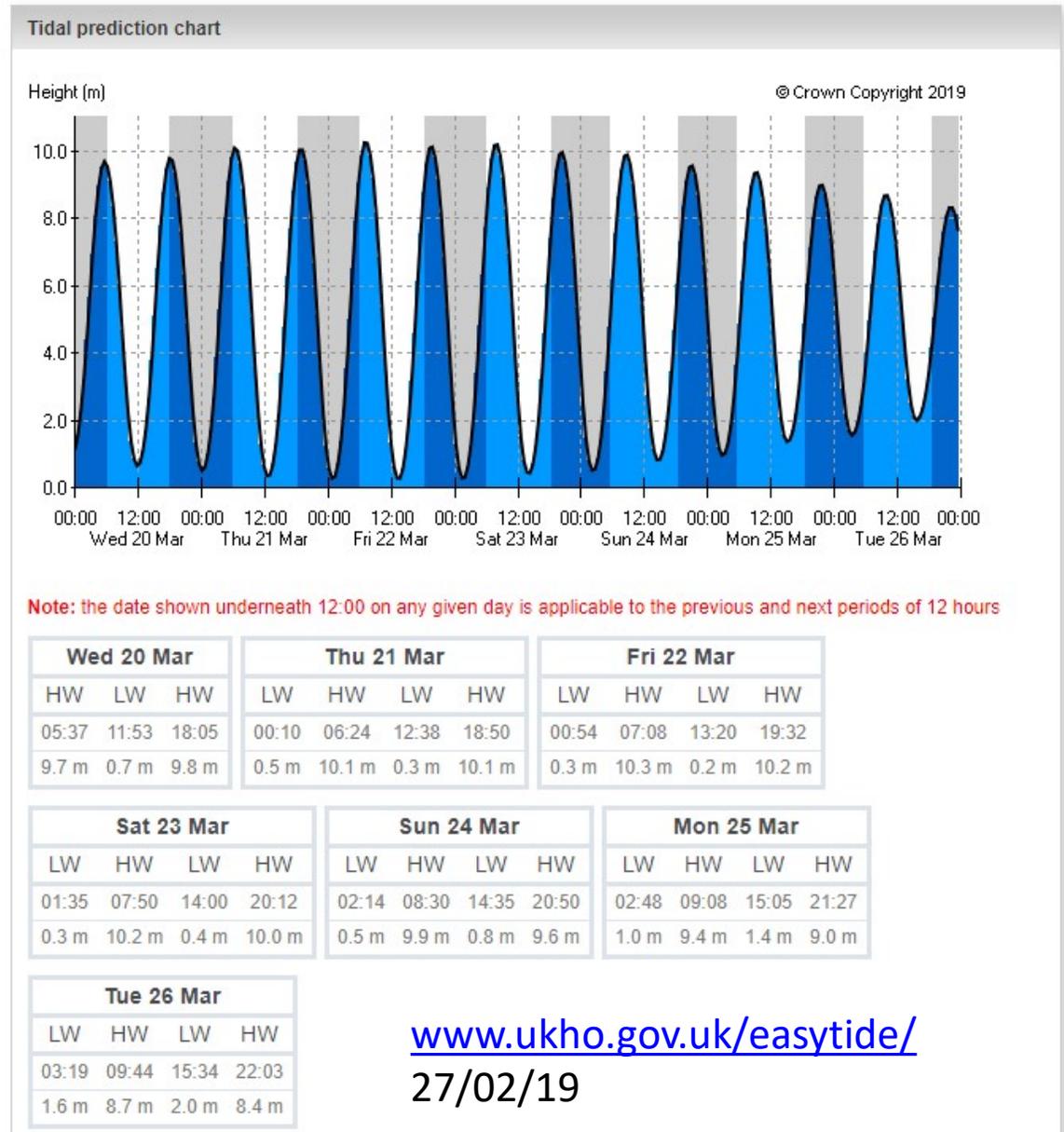
- Discuss in your group: suggest possible/potential risks and how they might be sensibly [managed](#).
- What ethical issues might there be to conducting fieldwork at this location?

Tidal prediction for Mumbles

Tidal predictions

Why are these important for coastal fieldwork?

Free for 7 days in advance from <https://www.tidetimes.co.uk/> or UKHO (right) - £1 payable for 7 day predictions further ahead



www.ukho.gov.uk/easytide/

27/02/19



Coastal Landscapes

To what extent does the beach at Port Eynon match expectations?

Methods of field investigation

- What characteristics might you be looking for?
 - Sediment size, roundness, beach gradient?
- What qualitative & quantitative data could you collect to help explain patterns?
- How would you do this?
- What sampling strategy could you use?
- What equipment will you need?

Data presentation (and analysis) of findings

- How could you present and analyse your data to “support the analysis of [your] findings”?
- What (if any) adjustments are needed to your data collection methods to allow these to be done?

Measuring sediment angularity/roundness

Measuring slopes to produce a profile has been discussed [elsewhere](#).

The Field Studies Council has some useful details of different techniques for describing the characteristics of coarse sediment (finer sediment – sand, silt & clay – needs to be sieved): (<https://www.geography-fieldwork.org/a-level/coasts/low-energy-coasts/data-analysis/>)

Measuring stone size has been discussed before – here we will measure volume using the displacement method. *What precautions will need to be taken to measure reliably and accurately?*

There are two main methods for measuring/assessing roundness/angularity:

[Powers Index of Roundness](#)

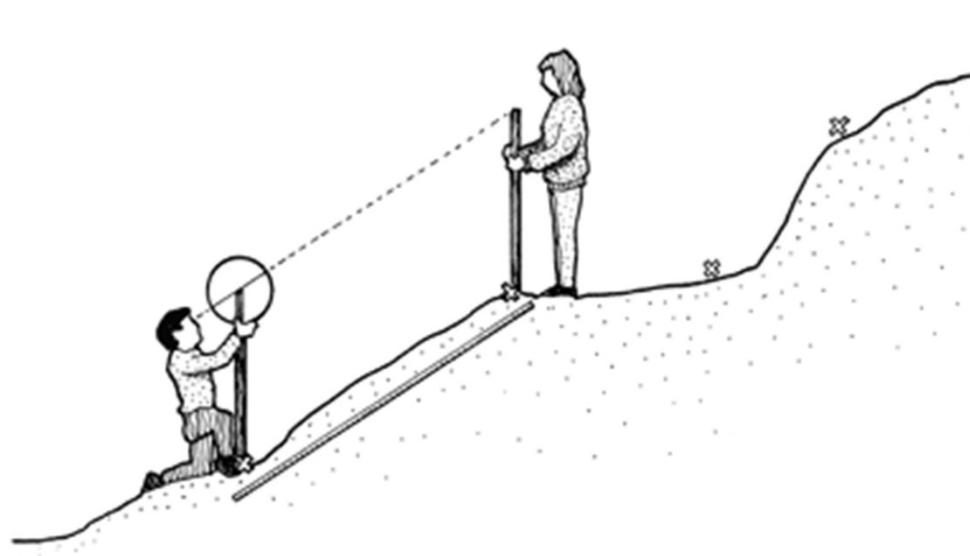
[Cailleux's Roundness Index](#)



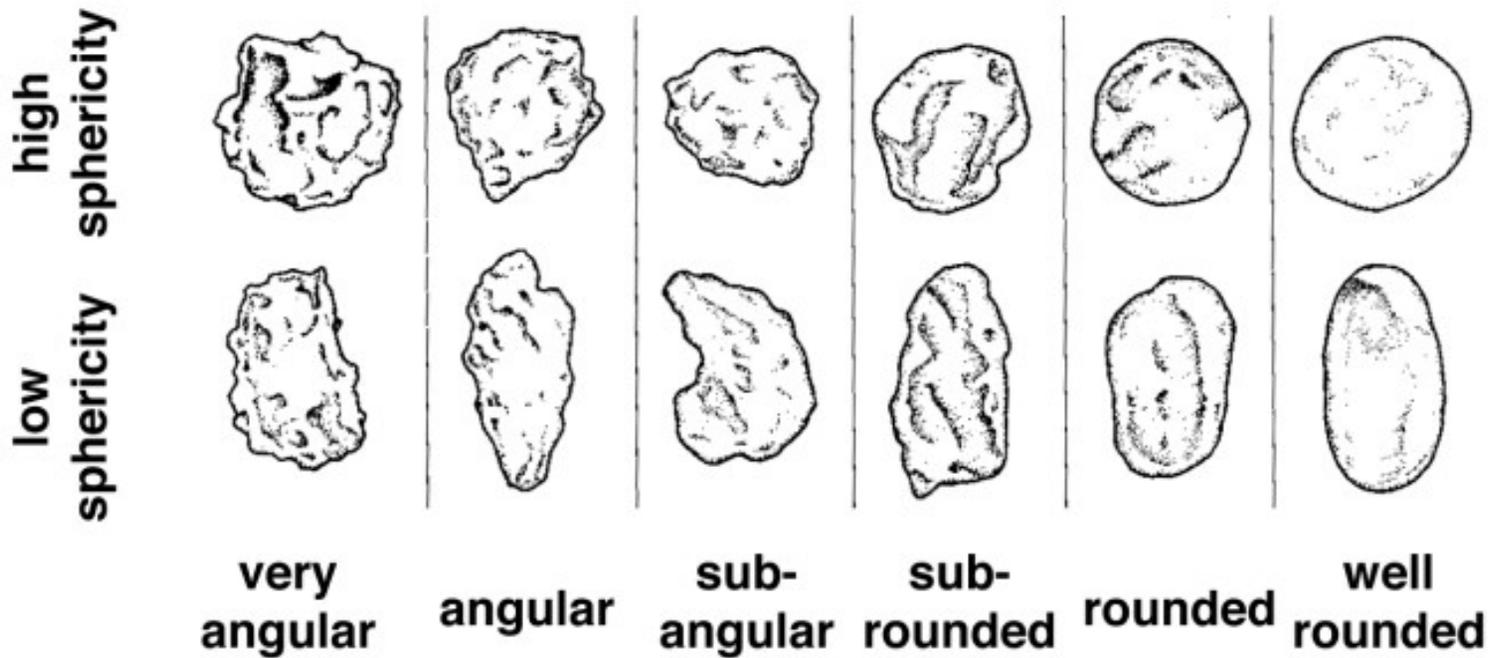
Drawing profiles

Measuring slopes to draw profiles are well described on the FSC website

<https://www.geography-fieldwork.org/a-level/coasts/coastal-management/method/#profile>



Powers' Roundness



Pro: quick and easy

Con: subjective; data in categories (so less easy to process)



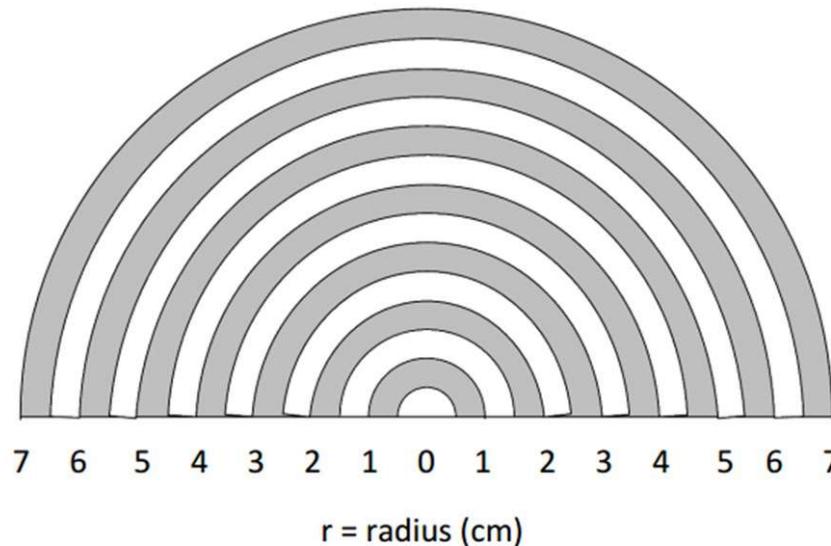
Cailleux Roundness



Cailleux Roundness Chart

Method:

- Find the sharpest edge of the pebble
- Place in the Cailleux Roundness chart to find most suitable radius value
- Record your result along with the longest axis (a-axis) to calculate the pebbles R-value
- Greater R values equate to greater roundness.



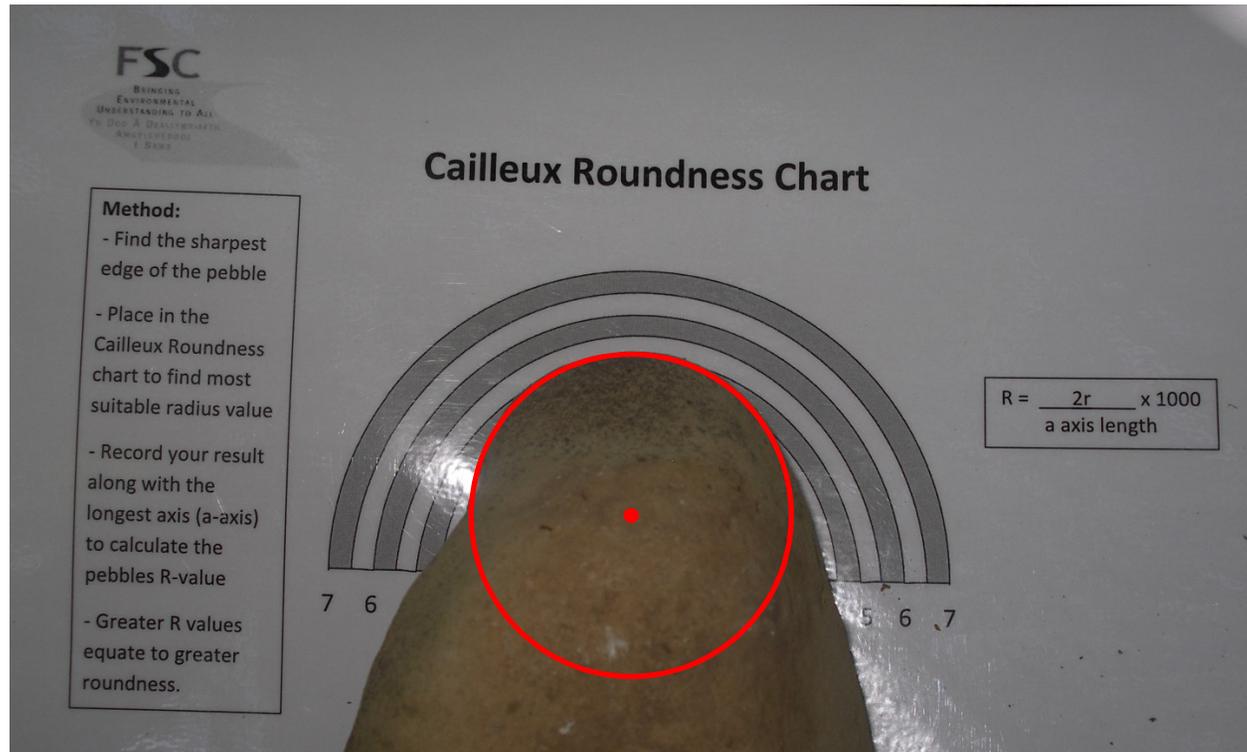
$$R = \frac{2r}{a \text{ axis length}} \times 1000$$

(v) Calculating the Cailleux Index

Your raw data for each stone is the radius of curvature (r) and the length of the axis (l). For each stone, calculate Cailleux Index as follows $C_i = (2r/l) \times 1000$.

A perfectly spherical stone would have a C_i of 1000. The lower the C_i , the more angular the stone.

Cailleux Roundness



Pro: a detailed measurement that produces a broader range of values providing possibilities for more detailed analysis, esp. using statistics

Con: more fiddly and therefore time-consuming; still somewhat subjective



Coastal Landscapes

To what extent does the beach at Port Eynon match expectations?

Data presentation and analysis

- 1. Drawing beach profiles*
- 2. Graphical techniques to test for correlation, e.g.?*
- 3. Cartographical techniques to show spatial patterns, e.g.?*
- 4. Statistical test for correlation (=?) – correlating what?*



Coastal Landscapes

To what extent does the beach at Port Eynon match expectations?

Group task 3:

- 1. Based on the previous discussions, devise a suitable fieldwork strategy [sequence, what data, collection method, how much data, sampling technique] to collect data to address the research Q(s) – you will about 2-3hrs to collect the data...*
- 2. Create data capture sheets to record your primary data during the fieldwork.*
- 3. Produce an equipment list.*

Investigating coastal dunes

Port Eynon



Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Context

What are the links to the course?

1.1.7 *“Action of wind and associated landforms of sand dunes”*

1.1.10 *“Negative impacts of human activity on coastal processes and landforms including ... erosion of sand dunes”*

3.2.3 *“Threats to biodiversity from direct action and indirect action operating at a range of scales from local to global”*

3.2.5 *“Succession of one ecosystem”*

Background research of dune formation and erosion, dune succession and the impacts of human activity on biodiversity and dune ecosystems.

Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Risk Assessment (including ethical issues)

- Discuss in your group: suggest possible/potential risks and how they might be sensibly managed.
- What ethical issues might there be to conducting fieldwork at this location?

Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Methods of field investigation

- What sort of impacts might human activity be having here?
- ‘How big...’ suggests comparison is needed with other pressures (such as?) and the natural process of succession
- What qualitative & quantitative [data](#) could you collect, and how?
- What sampling strategy could you use?
- What equipment will you need?
- What about [secondary data](#)?

Data presentation of findings

- How could you [present](#) your data to “support the analysis of [your] findings”?
- What (if any) adjustments are needed to your data collection methods to allow these to be done?

Coastal dunes at Port Eynon



How and why might such information be useful here?

How could you incorporate it into your investigation?

What precautions should you take to allow effective comparisons to be made?

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Date taken/added: 20th Jul 2009

<https://www.thebeachguide.co.uk/photos/port-eynon-1481748.htm>



Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Possible primary data	Techniques?



Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Possible primary data	Techniques?
Vegetation cover	Quadrat – estimate % covered by vegetation
Species diversity	Count number of different species
Dune profile	Measure slope angles between breaks of slope
Evidence of human activity (=?)	Litter surveys, path widths, photos
Other pressures (=?)	Erosion by sea – photos, measurement of dunes lost



Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Data presentation and analysis

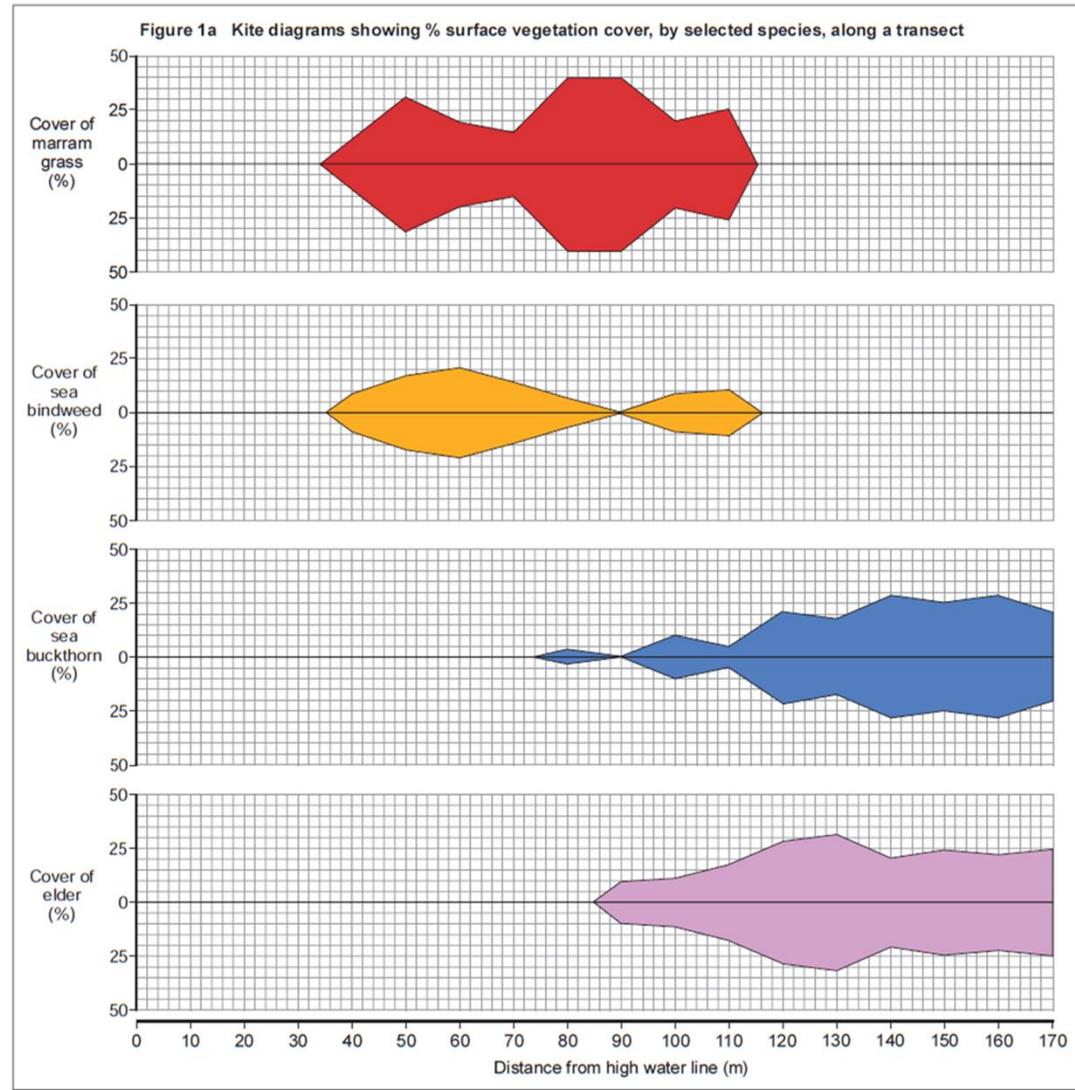
1. *Drawing dune profiles and other cross sections (e.g. across a footpath)*
2. *[Graphical](#) techniques to show variation along a transect, e.g.?*
3. *Cartographical techniques to show spatial patterns, e.g.?*
4. *Statistical test for correlation (=?) – correlating what?*



Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Kite diagrams



Ecosystems

How big an impact is human activity having on the dunes at Port Eynon?

Group task 4:

- 1. Based on the previous discussions, devise a suitable fieldwork strategy [sequence, what data, collection method, how much data, sampling technique] to collect data to address the research Q(s) – you will about 2-3hrs to collect the data...*
- 2. Create data capture sheets to record your primary data during the fieldwork.*
- 3. Produce an equipment list.*

Last minute reminders

1. *Emergency contact (School mobile): 07437 331536. If you are running late on Tuesday, or are too ill to take part, you must phone this number as soon as possible – do not leave a message on the school answerphone.*
2. *Tuesday: arrive no later than 7.15am so we can leave at 7.30am.*
3. *You will need to bring lunch (we may stop at a services along the way...)*
4. *We will be doing fieldwork on Tuesday afternoon before reaching the hostel – so have all that you need (including clothing/footwear) with you on the minibus.*
5. *Bring all the food you will need with you – we will not be stopping to shop on the way as there will not be enough time...and there's nowhere to buy food in Port Eynon (apart from the pub) – there is a petrol station in Southgate (Wednesday) but whether or not you can buy food other than snacks there is not known!*
6. **NO NUTS**
7. *You will need money for the evening meal on Wednesday.*
8. *Return will be around pm on the Thursday – if you're being picked up then please make sure they can be there when we arrive (or shortly after).*

Weather forecast (15:00 17/03/19)

Today



9°
7°

Monday



9°
8°

Tuesday



9°
8°

Wednesday



10°
9°

Thursday

10° 8°

Overcast.

Friday



10°
7°

Saturday



10°
5°

SUNRISE: 06:18

SUNSET: 18:31

L UV

L POLLUTION

POLLEN

WEDNESDAY	THURSDAY								FRIDAY
21:00	00:00	03:00	06:00	09:00	12:00	15:00	18:00	21:00	
									
CHANCE OF PRECIPITATION									
20%	20%	20%	20%	20%	20%	20%	10%	20%	
TEMPERATURE (°C)									
9°	9°	9°	9°	9°	10°	10°	9°	9°	
FEELS LIKE TEMPERATURE (°C)									
7°	7°	7°	7°	7°	8°	8°	7°	6°	
WIND DIRECTION AND SPEED (mph)									
↙ SW 8	↙ SW 9	↙ SW 9	↙ SW 10	↘ WSW 11	↙ SW 11	↙ SW 11	↙ SW 10	↙ SW 10	
WIND GUST (mph)									
12	14	14	15	17	18	18	16	15	