

DATA COLLECTION

KEY WORDS & DEFINITIONS

1. Population

Whole set of items that could be sampled.

2. Census

Observations taken from the entire population.

3. Sample

Observations taken from a subset of the population.

4. Sampling Unit

One individual observation set from the population.

5. Sampling Frame

A numbered (or named) list of individual sampling units.

6. Strata

A subset of the population.

TYPES OF SAMPLING

1. Simple Random Sampling

Every sample of a specified size has an equal chance of being selected from a sampling frame.

2. Systematic Sampling

Items are chosen at regular intervals from a sampling frame.

3. Stratified Sampling

Random samples are taken proportionally from mutually exclusive groups or strata.

4. Quota Sampling

Non-random sample is taken to fulfil predetermined quotas for different categories.

5. Opportunity Sampling

Non-random sample is selected from available sampling units.

TYPES OF DATA

1. Quantitative Data

Variables or data associated with a numerical value.

2. Qualitative Data

Variables or data associated with a non-numerical value.

3. Continuous

Variables that can take any value. **Measured**

4. Discrete

Variables that can only take specific values. **Counted**

CENSUS VS SAMPLE

	Census	Sample
Advantages	Includes every member of the population to give a fully representative set of data	Less time consuming to collect and process data. Fewer people needed therefore cheaper to conduct.
Disadvantages	Time consuming & expensive. Cannot be used when testing process destroys the item being tested.	May not be fully representative of population. Outliers or whole subgroups possibly excluded.

WHAT DO I NEED TO KNOW?

1. Advantages & Disadvantages

Why is one type of sampling more appropriate than another. Consider time, cost, bias, ease, accuracy of population representation.

2. How to work with Grouped Data

Understand inequalities. Find maximum, minimum & midpoint of each group.

3. How to use the Large Data Set

Be able to clean data, take samples and comment on findings.

THE LARGE DATA SET

KEY WORDS & DEFINITIONS

1. Daily Mean Temperature

The average of hourly temperature readings in a 24hour period, in Celsius.

2. Daily Total Rainfall

The depth of precipitation as a liquid. All precipitation is included, not just rainfall, but it is melted if necessary for the measurement. Heights less than 0.05mm are recorded as a "trace" or "tr".

3. Daily Total Sunshine

Recorded to the nearest 10th of an hour (6 minutes).

4. Daily Mean Wind Direction

Given as a bearing and/or in cardinal (compass) directions.

5. Daily Mean Windspeed

Averaged over 24 hours of a day (midnight to midnight), in knots, nautical miles per hour where 1 knot = 1.15mph. Can also be categorised by the Beaufort Scale.

6. Daily Maximum Gust

The highest instantaneous windspeed recorded, in knots.

7. Daily Maximum Gust Direction

The direction of the maximum gust of wind recorded.

8. Daily Maximum Relative Humidity

A percentage of air saturation with water vapour. Relative humidities above 95% result in mist or fog.

9. Daily Mean Cloud Cover

Measured in eighths of the sky that is covered (Okta).

10. Daily Mean Visibility

The greatest horizontal distance at which an object can be seen in daylight, measured in decametres (Dm).

11. Daily Mean Pressure

Measured in hectopascals (hPa)

WHAT DO I NEED TO KNOW?

1. What the Large Data Set is about

The Edexcel LDS has samples on weather data in different locations for certain time periods. The data is provided by the Met Office.

The LDS contains the weather data for 5 UK weather stations and 3 weather stations overseas.

2. How to clean the data

N/A should be removed before calculations

tr (trace) should be turned to 0

3. Locations

Learn maps and understand geographical significance of North, South, Coastal etc.

4. Dates

Remember the Large Data Set only has information from May–October 1987 and May–October 2015. Anything between November and April is outside the range of our data.

5. Understand OKTAS

A measure of the fraction of the celestial dome covered by cloud, measured in eighths. 0 oktas represents a clear sky,

while a value of 8 indicates complete overcast.

0 oktas represents a clear sky,

6. How to convert units

1 knot = 1.151 mph

7. Limitations

These stations do not tell us about the whole UK

THE BEAUFORT SCALE

Beaufort Scale	Description	Avg. Wind Speed 10m above ground
0	Calm	< 1 knot
1-3	Light	1 – 10 knots
4	Moderate	11 – 16 knots
5	Fresh	17 – 21 knots

UK DATA

Location (N to S)	Temp Range (°C)	Wind Speed Range (kn)
Leuchars	4 – 9	3 – 23
Leeming	4 – 23	3 – 17
Heathrow	5 – 29	3 – 19
Hurn	6 – 24	2 – 19
Camborne	10 – 20	3 – 18

