Time Series: Read the Graph First

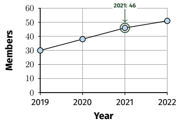
Key idea

A **time series** records one variable in time order. Read the axes, units and time interval first.

Read a value

At 2021 the point is 46, so membership was **46 members**.

Locate time, then value



Common mistake

Do not read across from the wrong year or omit the unit.

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T = Trend

Key idea

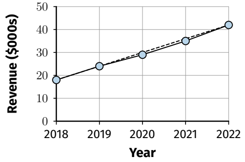
Trend is the long-term direction. Use **increasing**, **decreasing**, or **no clear trend**.

Quantify it

From 18 to 42: increase $= 42 - 18 = 24$.

Percentage increase $= \frac{24}{18} \times 100 \approx 133\%$.

Describe the overall movement



Common mistake

Say **increasing trend**, not “positive trend” or only “it goes up”.

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S = Seasonality

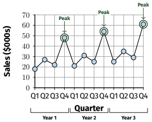
Key idea

Seasonality repeats at regular intervals. State the cycle length and the usual peak and trough.

Quarterly cycle

The pattern repeats every 4 quarters (1 year). Q4 is the peak and Q1 is the trough.

Compare the same period each cycle



Common mistake

A repeating rise and fall is not noise. Check whether it occurs at the same point in each cycle.

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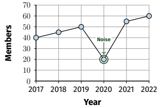
N = Noise and Prediction

Key idea

Noise is unusual variation that does not fit the pattern. The 2020 dip is noise because later values return to the earlier increasing trend.

A one-off departure



Common mistake

A high or low point is not automatically noise. Compare it with the surrounding pattern.

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