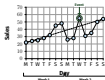


# Push Tasks



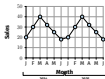
*Analyse and justify TSN classifications in realistic, multi-component scenarios.*

**1. Identify and justify T, S and N.**



**2. Critique:** “This time series has a positive trend because it goes up and down.” What is wrong with this statement?

**3. Is the repeating movement trend or seasonality? Justify.**



**4. Design a time series with an increasing trend, quarterly seasonality, and one noise event. Describe what each component represents.**

# Push Tasks



*Evaluate how TSN components can mask or be mistaken for one another, and apply the framework beyond sales data.*

**5.** Why might a time series appear to have no trend when it actually has seasonality masking it?

**6.** How can noise be distinguished from the start of a new trend?

**7.** Explain how TSN analysis could help a farmer plan crop planting and harvesting.

**8.** Compare the usefulness of identifying T, S, and N for: a) forecasting future values, b) identifying one-off problems.