

✔ Lesson 18: Visual Calculations

Dataset: sales_with_geodata.csv

Objective: Master DAX context, visual-level calculations, filtering, and troubleshooting visuals

🧩 Puzzle 1: Confusing Totals

- Issue: The column [Sales] / [Quantity] shows accurate row-level values but the total is wrong.
- Explanation: Power BI sums up Sales and Quantity separately at the total level, then divides. It does not sum individual ratios.
- Fix: Use:

DAX

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SalesPerQuantity_Correct = DIVIDE(SUM(Sales[Sales]), SUM(Sales[Quantity]))

🧩 Puzzle 2: Filtered vs. Unfiltered Totals

- Category-Wise Sales Measure:

DAX

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TotalSales = SUM(Sales[Sales])

- Ignoring Category Filter:

DAX

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TotalSales_All = CALCULATE(SUM(Sales[Sales]), REMOVEFILTERS(Sales[Category]))

- Bonus: % of Total:

DAX

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PercentOfTotal = DIVIDE([TotalSales], [TotalSales_All])

✖ Puzzle 3: Changing Context with Slicers

- Why Card Changes: Because slicers modify the filter context of visuals.
- Ignore Slicer (Static Measure):

DAX

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TotalSales_AllCountries = CALCULATE(SUM(Sales[Sales]),
REMOVEFILTERS(Sales[Country]))

✖ Puzzle 4: Misleading Average

- Problem: [Total Sales] / [Total Orders] uses total-level values, not row-wise.
- Fix: Use AVERAGEX() for row-level logic:

DAX

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AvgSales = AVERAGEX(Sales, Sales[Sales] / Sales[OrderCount])

✖ Puzzle 5: Highlight Top Product per Category

- Use a visual-level filter with this measure:

DAX

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ProductRank = RANKX(
FILTER(ALL(Sales), Sales[Category] = MAX(Sales[Category])),
[Total Sales],

,
DESC
)

- Then filter ProductRank = 1 in the Matrix.

✖ Puzzle 6: Unexpected Blank Values

- Cause: The condition Sales[Country] = "France" excludes rows with a different country, even if the customer made purchases elsewhere.
- Fix:

DAX

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```
SalesInFrance = CALCULATE(  
    SUM(Sales[Sales]),  
    FILTER(Sales, Sales[Country] = "France")  
)
```

✖ Puzzle 7: Time Intelligence Confusion

- Measure:

DAX

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```
PrevMonthSales = CALCULATE(  
    [Total Sales],  
    DATEADD(Sales[OrderDate], -1, MONTH)  
)
```

- Edge Cases: Use IF(ISBLANK(...), 0) or fill missing months with a calendar table.

✖ Puzzle 8: Row-Level Calculation

- Use SUMX() to evaluate each row:

DAX

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TotalDiscount = SUMX(Sales, Sales[Quantity] * Sales[Discount per Unit])

✖ Puzzle 9: Rank with Ties

- Ranking Measure:

DAX

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CityRank = RANKX(

ALL(Sales[City]),

[Total Sales],

,

DESC,

DENSE

)

✖ Puzzle 10: Dynamic Titles and KPIs

- Measure:

DAX

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TitleMeasure = "Sales for " & SELECTEDVALUE(Sales[Country], "All Countries")

- Use this in a Card or Title textbox.

