Microsoft Power Platform

Power BI Data Modeling

Data Modeling Labs

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Overview

The estimated time to complete this lab is 1 hour and 35 minutes.

In this lab, you will create and enhance a working data model. You will learn how to add new measures and columns, as well as test new additions using PowerBI visualizations.

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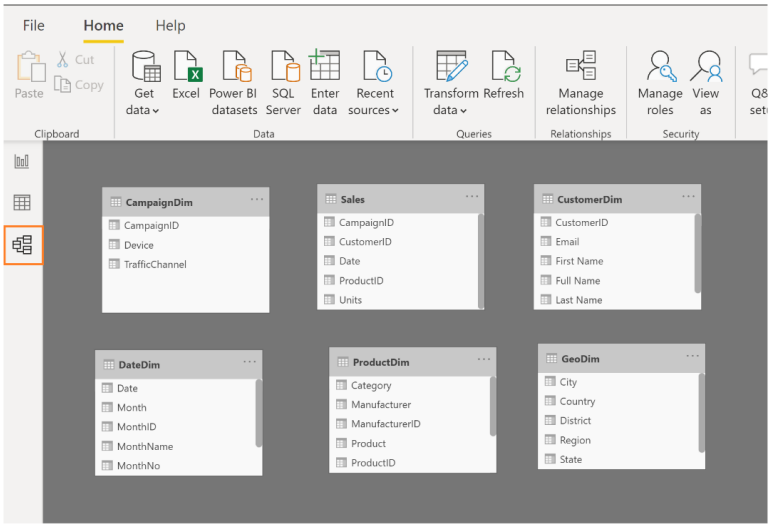
Lab 01: Create relationships between tables

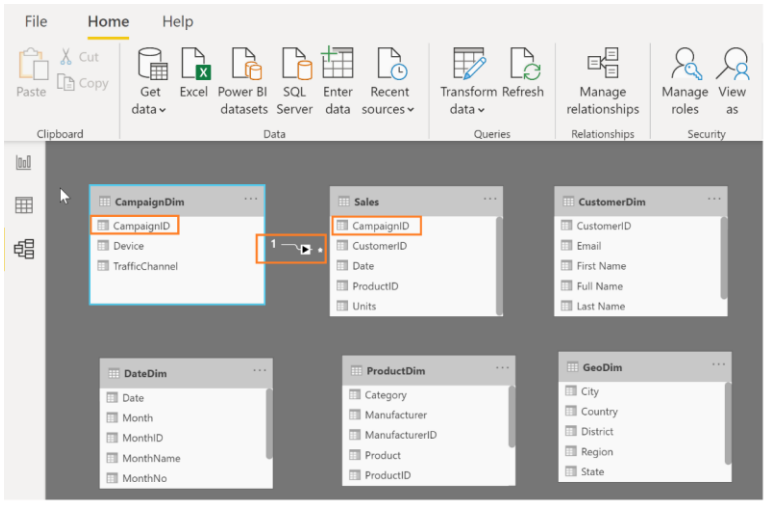
Task: Create relationships between multiple tables.

The estimated time to complete this lab is 20 minutes.

1. Open the the file **Student Modeling Pre-class.pbix**
2. Navidate to **model** view.



3. Drag a **relationship** line between **CampaignID** field from **CampaignDim** table and **CampaignID** field from **Sales** table



4. Similarly, create relationship between

   CustomerID fields in **CustomerDim** and **Sales** table
   ProductID fields in **ProductDim** and **Sales** table

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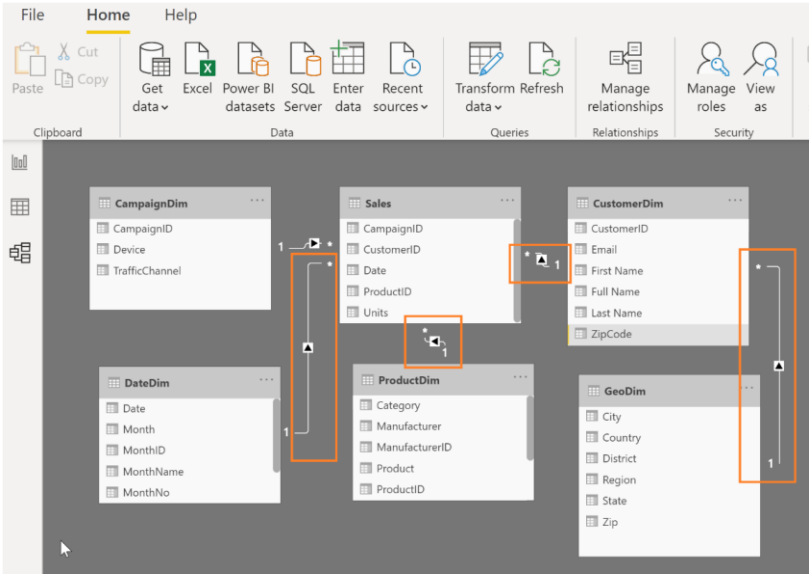
Date fields in **DateDim** and **Sales** table
Zip field from **GeoDim** table and **ZipCode** from **CustomerDim** table



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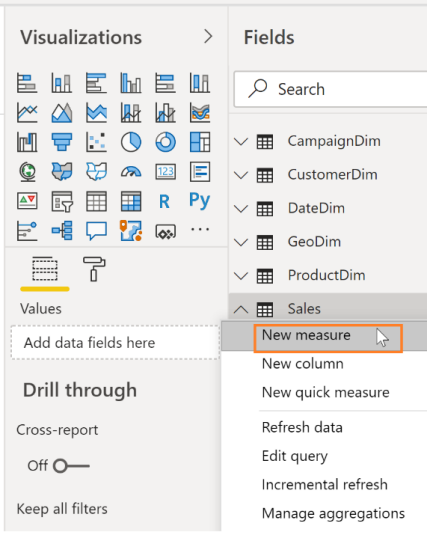
Lab 02: Create new measures and columns

Tasks: You will create a new measure for Total Units Sold, a new calculated column that combines Product Category and Campaign Traffic together, and create visualizations to test the new measure and column

Task 1. Create **Total Units Sold** measure

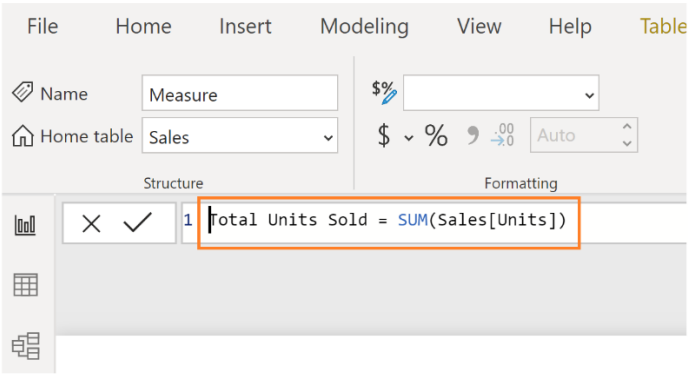
The estimated time to complete this lab is 30 minutes.

1. Select **Sales** Table. From the ribbon select **Modeling -> New Measure**



2. In the formula bar enter:

Total Units Sold = SUM(Sales[Units])



3. From the ribbon select **Format -> Currency** to format the measure

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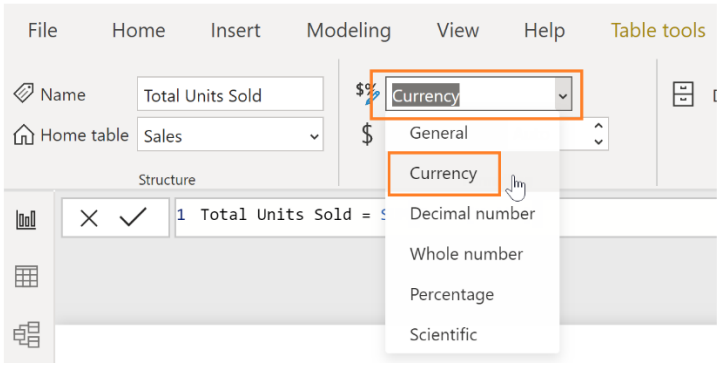
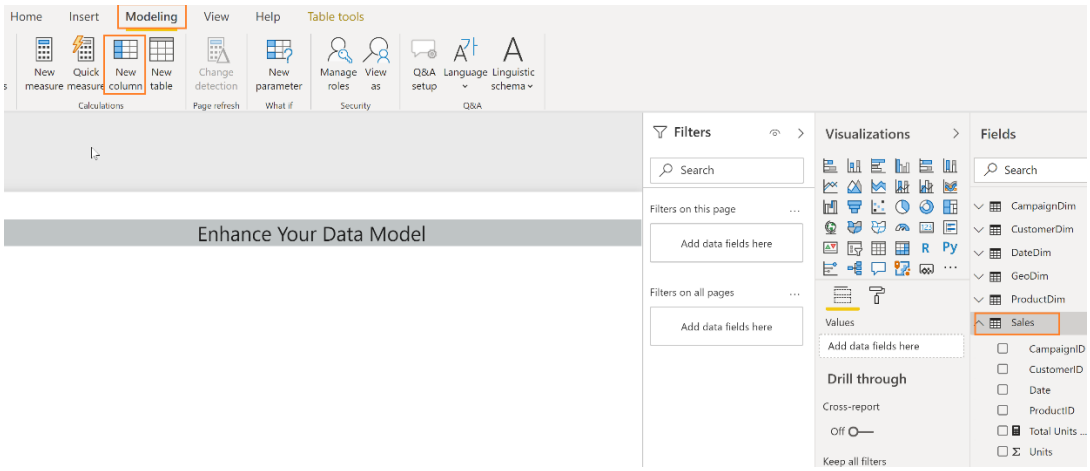


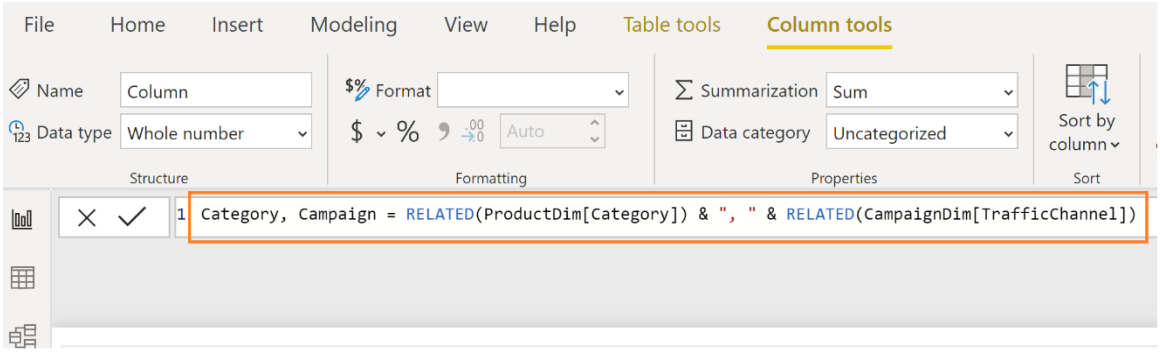
Task 2: Create calculated column that combines Category and TrafficChannel

4. Select **Sales** table. From the ribbon select **Modeling -> New Column**.



5. In the formula bar enter:

Category, Campaign = RELATED(ProductDim[Category]) & ", " & RELATED(CampaignDim[TrafficChannel])



6. Drag newly created **Total Units Sold** measure to the canvas. A clustered column chart is created

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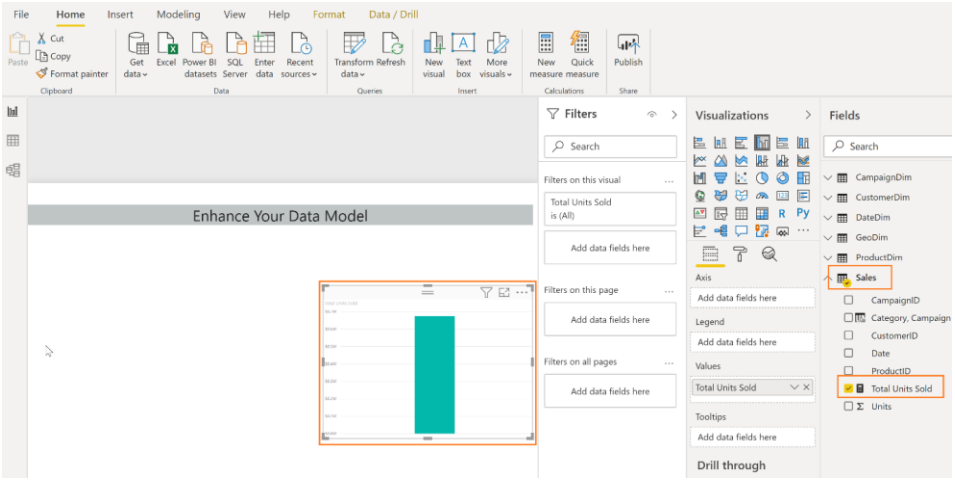
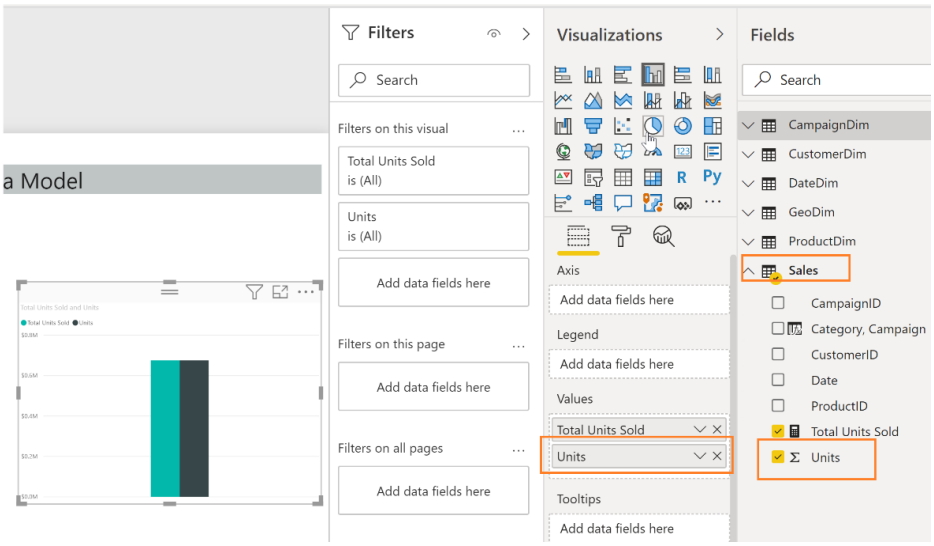
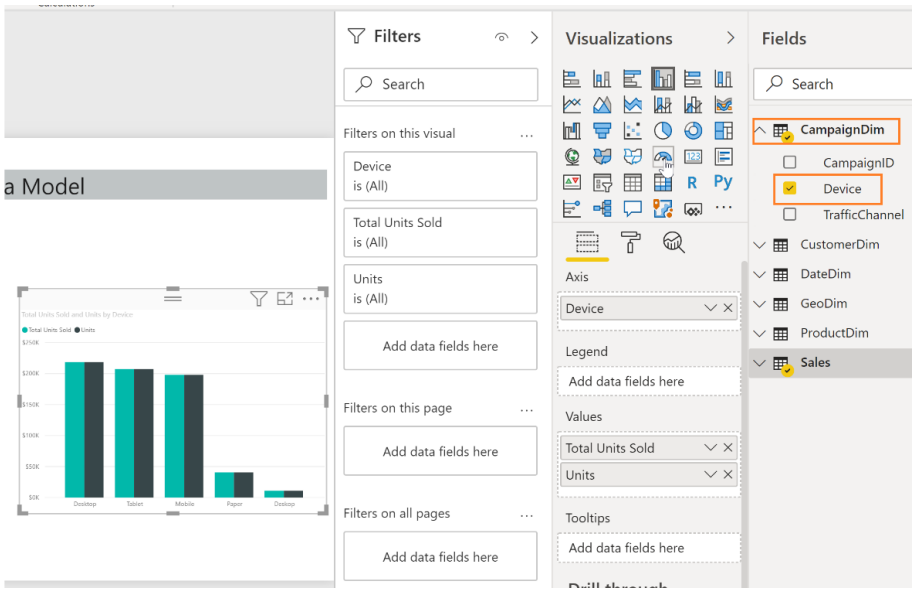


7. Drag **Units** field from **Sales** table to this visual



8. Select **Device** field from **CampaignDim** table



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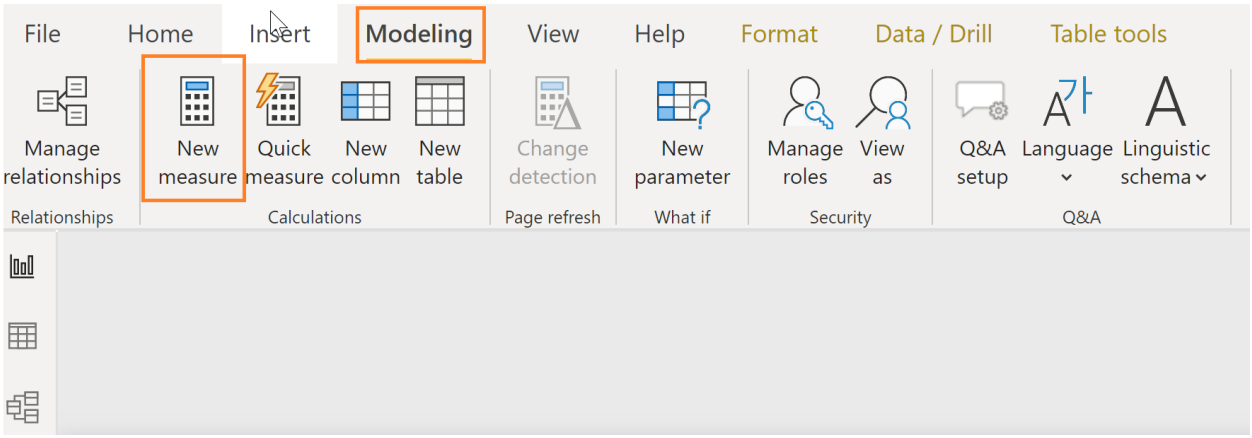
Lab 03: Create a report for the VP in charge of the Youth and Accessory Segments

Task 3: Create three new measures and a PowerBI visualization

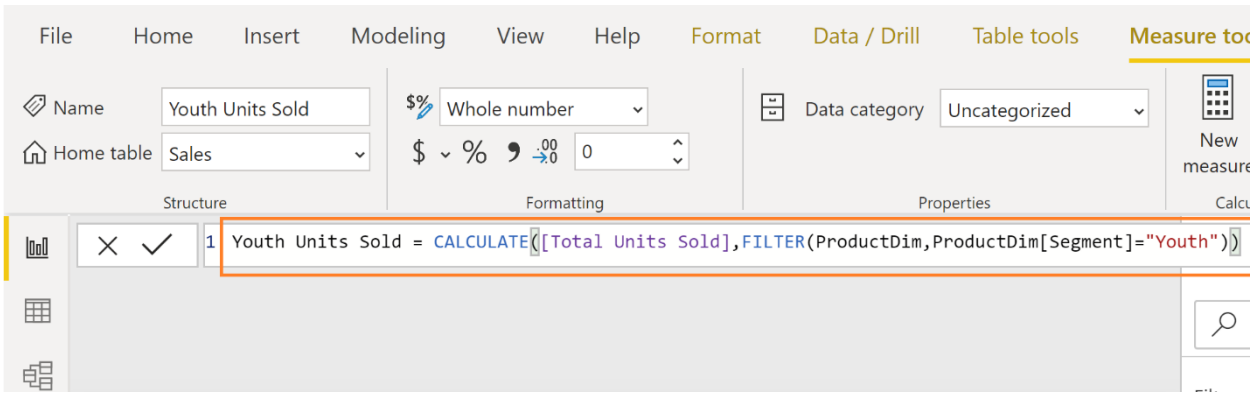
The estimated time to complete this lab is 45 minutes.

1. Select **Sales** Table. From the ribbon select **Modeling -> New Measure**.



2. Create 3 measures:

Youth Units Sold = CALCULATE([Total Units Sold],FILTER(ProductDim,ProductDim[Segment]="Youth"))



Accessory Units Sold = CALCULATE([Total Units sold],FILTER(ProductDim,ProductDim[Segment]="Accessory"))

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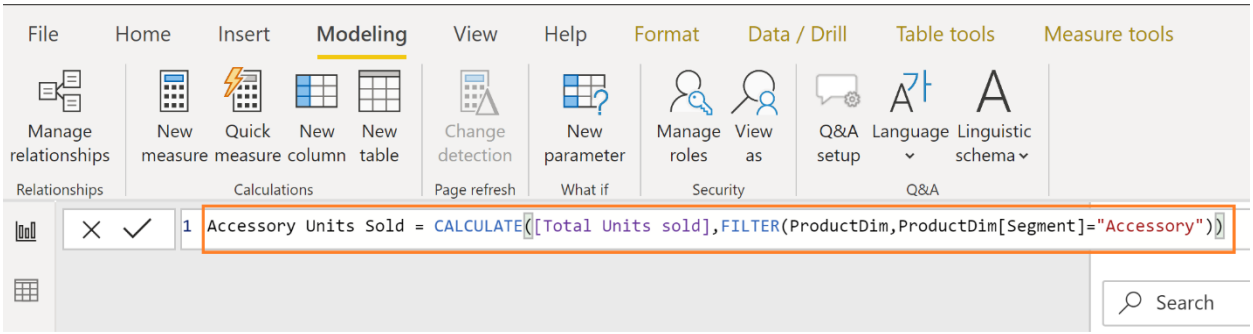
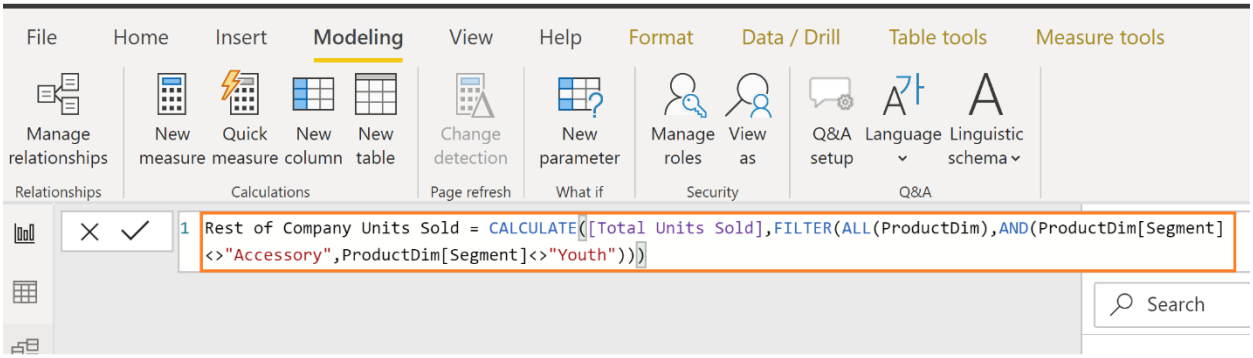
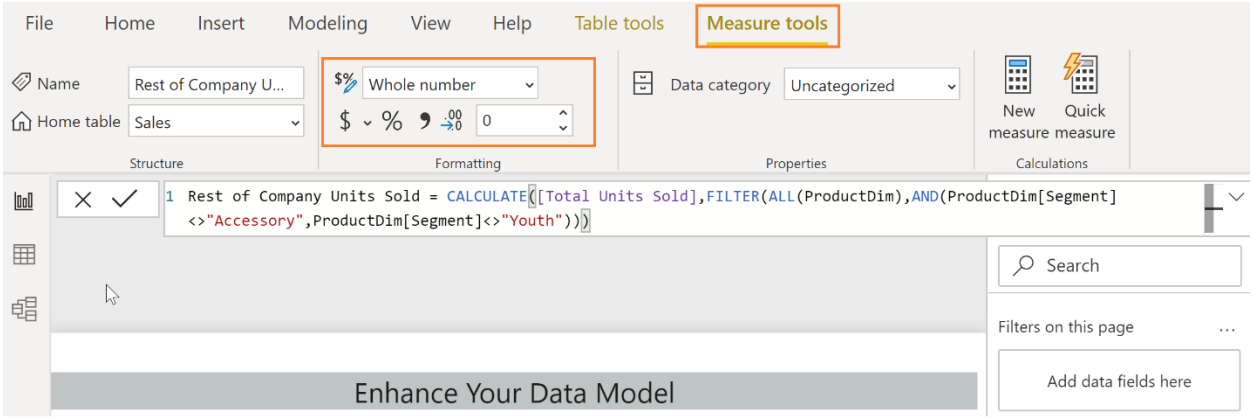


Rest of Company Units Sold = CALCULATE([Total Units Sold],FILTER(ALL(ProductDim),AND(ProductDim[Segment]<>"Accessory",ProductDim[Segment]<>"Youth")))



3. From the ribbon select **Measure tools -> Whole Number and Comma** to format the measure



4. Add a table visual and drag **CampaignDim -> Device** and the **3 newly created measures**

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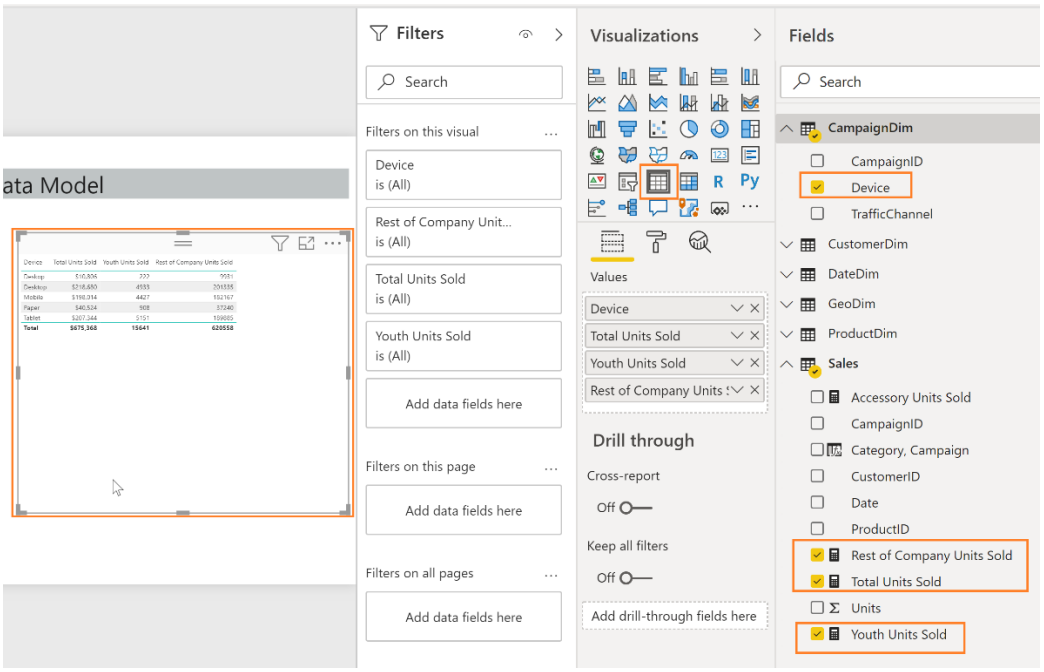
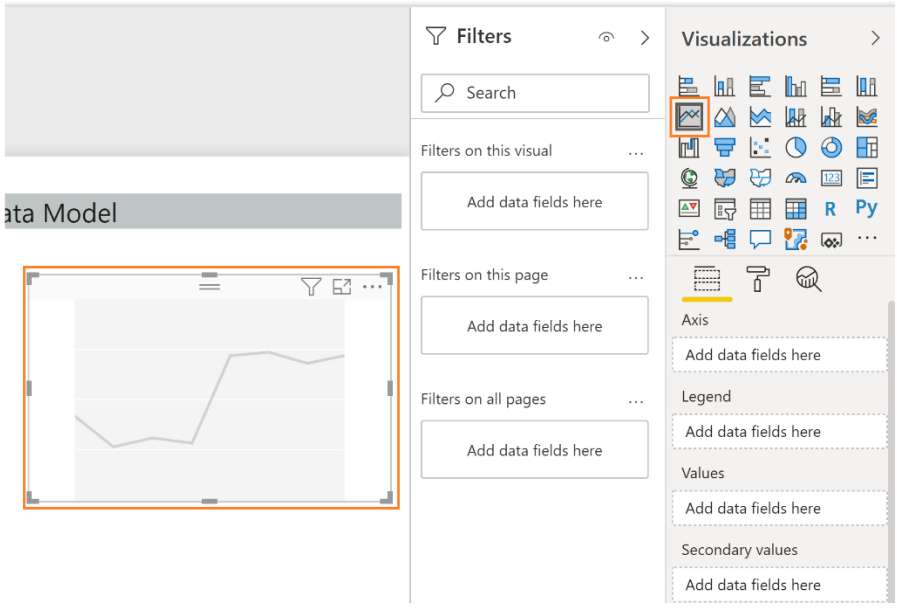


5. Select **Line Chart** visual.



6. Select **Date** from Date table

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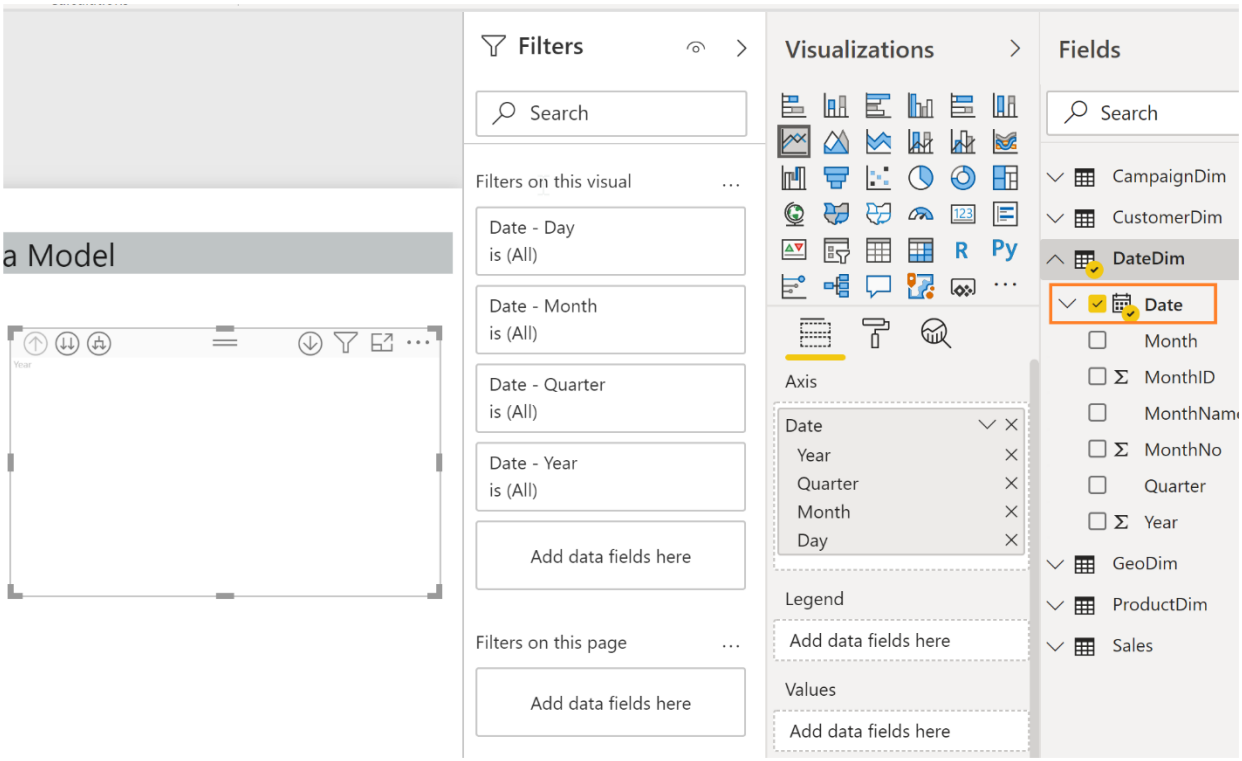
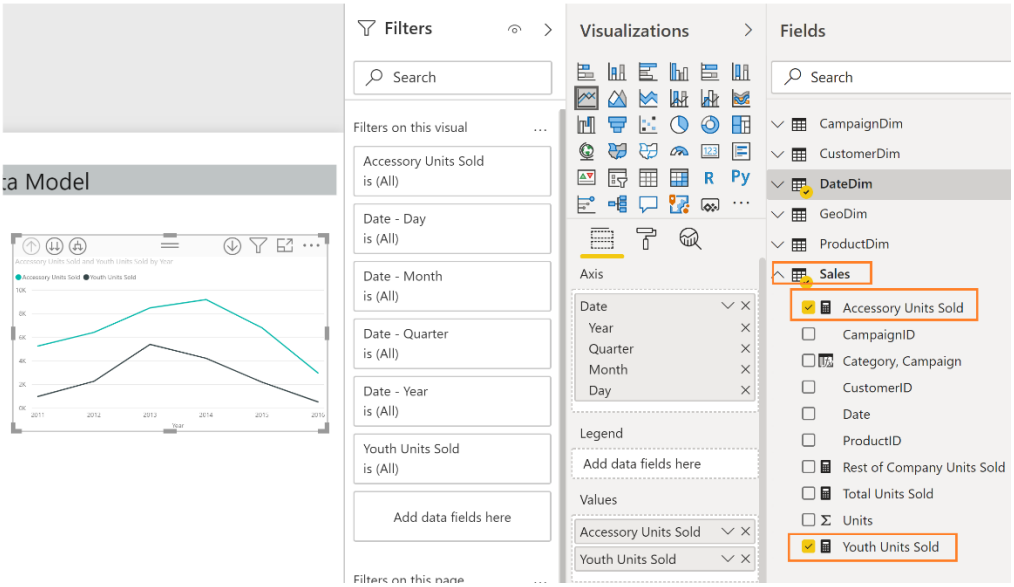


7. Select **Youth Units Sold** and **Accessory Units sold** measures.



8. Create following measures and use a visual to analyze data.

COGS = SUMX(Sales, Sales(Unit) * RELATED(ProductDim(UnitCost))

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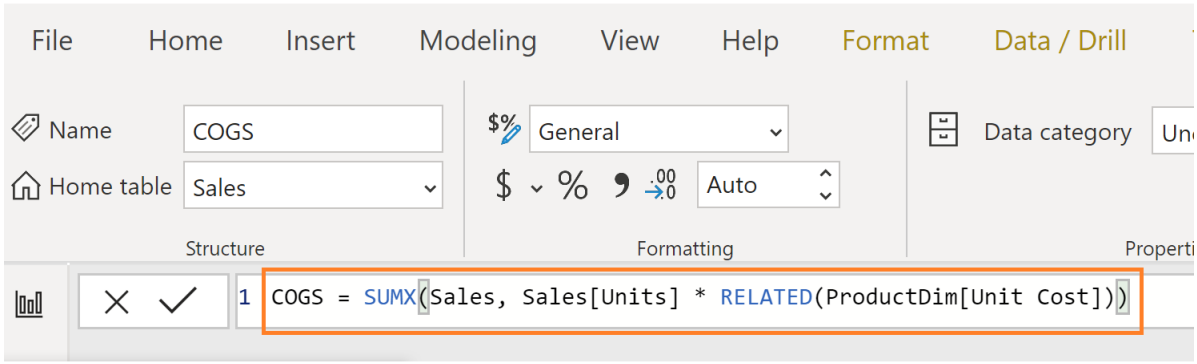
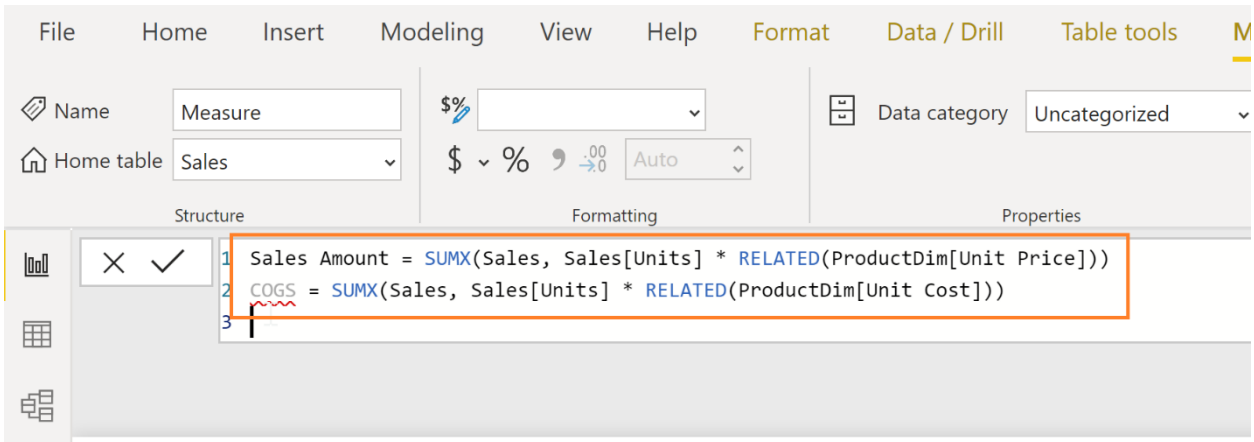
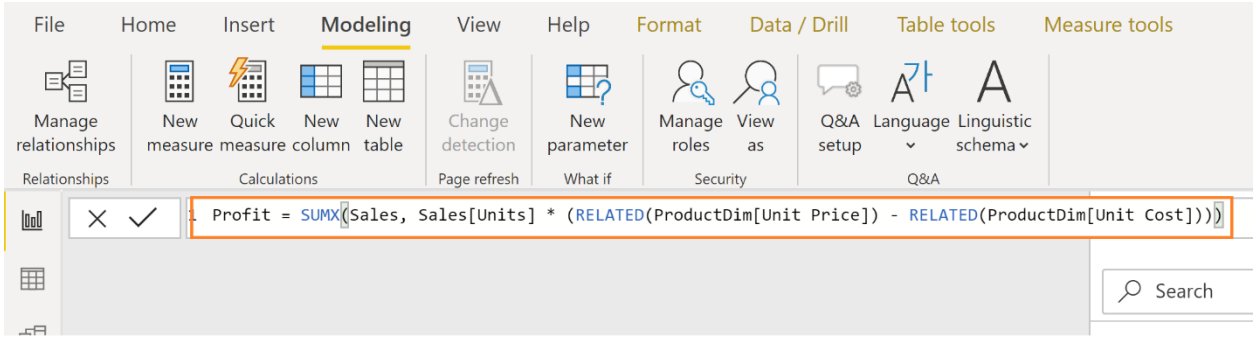


Sales Amount = SUMX(Sales, Sales[Units] * RELATED(ProductDim[Unit Price]))
COGS = SUMX(Sales, Sales[Units] * RELATED(ProductDim[Unit Cost]))



Profit = SUMX(Sales, Sales[Units] * (RELATED(ProductDim[Unit Price]) - RELATED(ProductDim[Unit Cost])))



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Summary

In this lab, you have uploaded data to a model and enhanced the model by adding additional measures and columns. In the end you will have tested the new measures and columns using Power BI data visualizations.

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