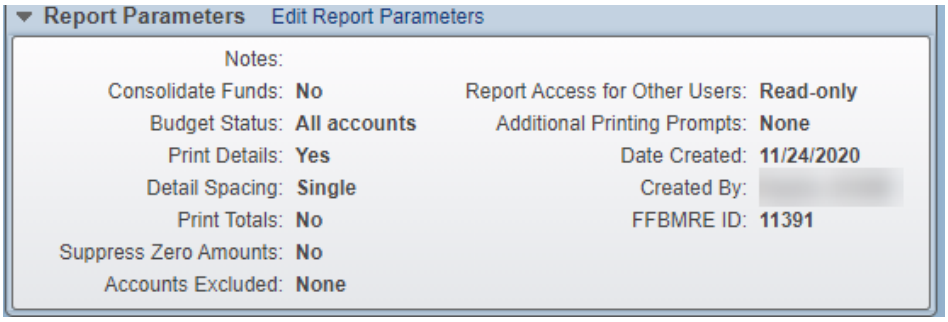
Excel Power Query for Skyward Data Mining

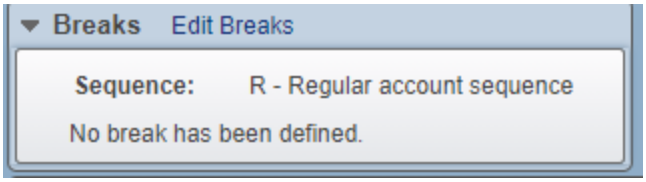
Power Query is a data transformation tool built into Microsoft Excel and Microsoft Power BI. It allows users to connect directly to a data source and then extract, transform, and load data into a spreadsheet, table, pivot chart, or data model. Excel's Power Query allows district users to create reusable spreadsheets that can be refreshed with an updated data file. Although this process takes time to setup, once the initial setup is complete, data files can easily be refreshed.

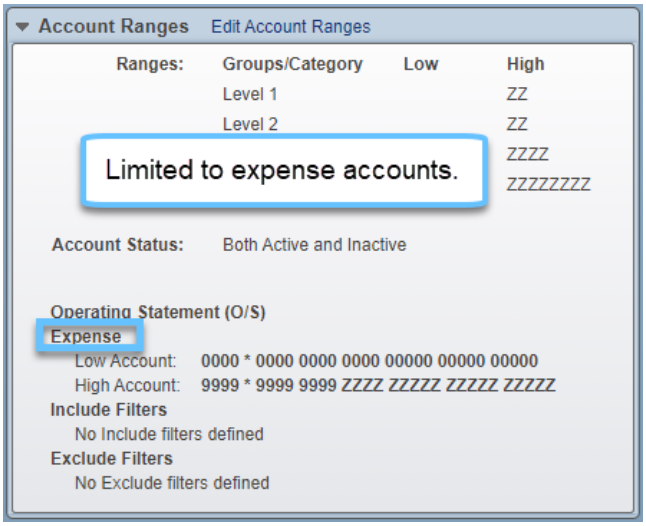
Skyward Data Mining Report

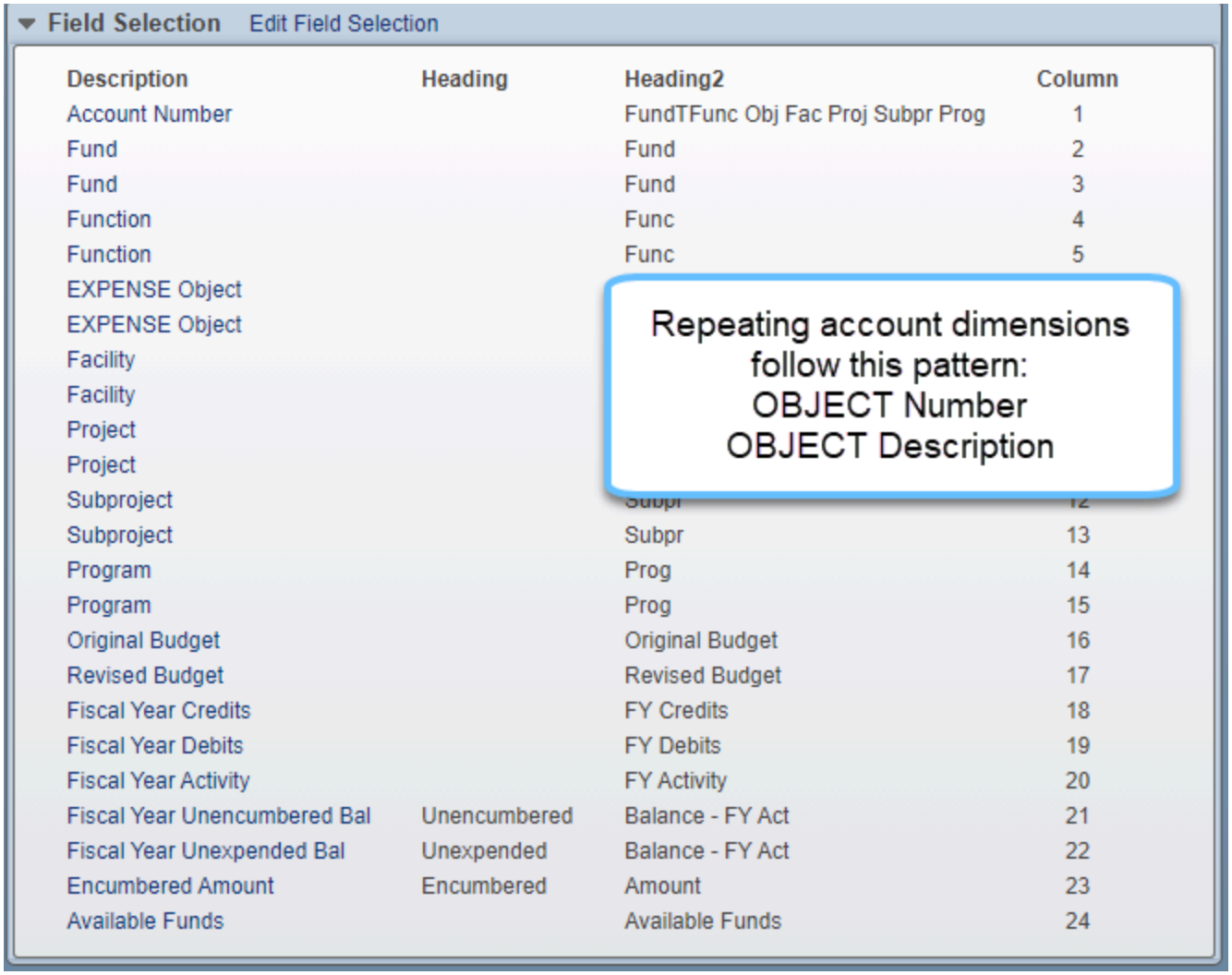
The following is an example of a summary data mining report from Skyward referencing expense accounts only. This same process can be applied to other accounts as well.



Do not use breaks. This report will produce no totals. Excel will handle the analysis.







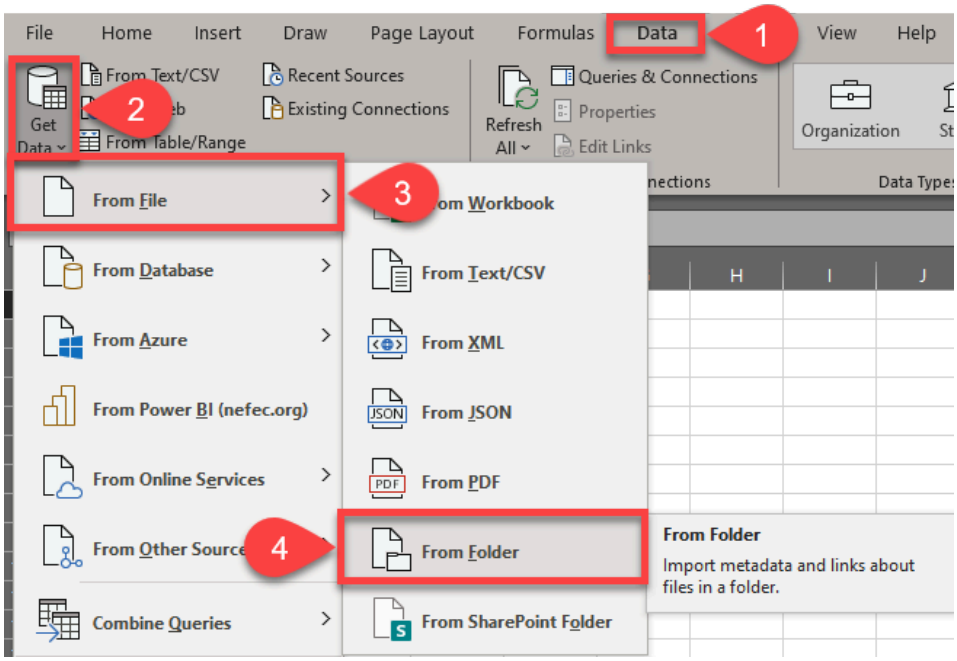
Field Selection Edit Field Selection

Description	Heading	Heading2	Column
Account Number		FundTFunc Obj Fac Proj Subpr Prog	1
Fund		Fund	2
Fund		Fund	3
Function		Func	4
Function		Func	5
EXPENSE Object			
EXPENSE Object			
Facility			
Facility			
Project			
Project			
Subproject			
Subproject		Subpr	13
Program		Prog	14
Program		Prog	15
Original Budget		Original Budget	16
Revised Budget		Revised Budget	17
Fiscal Year Credits		FY Credits	18
Fiscal Year Debits		FY Debits	19
Fiscal Year Activity		FY Activity	20
Fiscal Year Unencumbered Bal	Unencumbered	Balance - FY Act	21
Fiscal Year Unexpended Bal	Unexpended	Balance - FY Act	22
Encumbered Amount	Encumbered	Amount	23
Available Funds		Available Funds	24

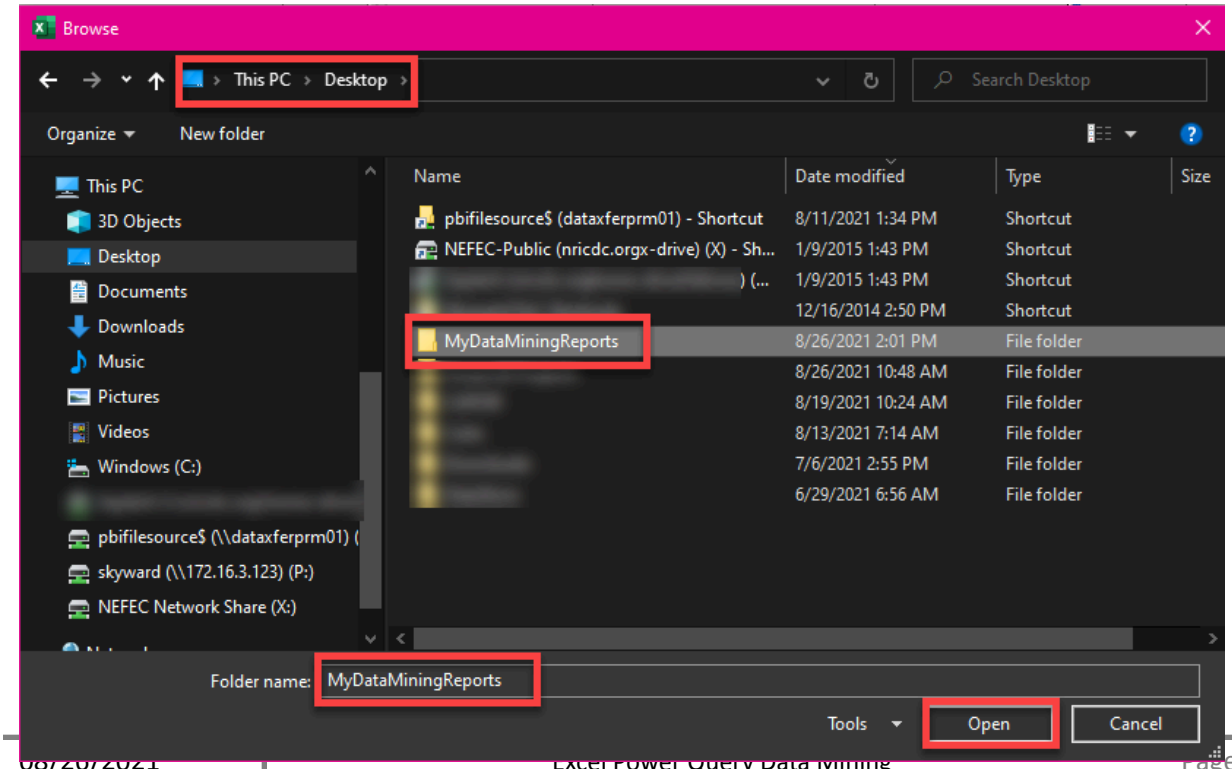
Once the data mining report is configured, run the report as an Excel file. Save the file to the local machine.

Power Query

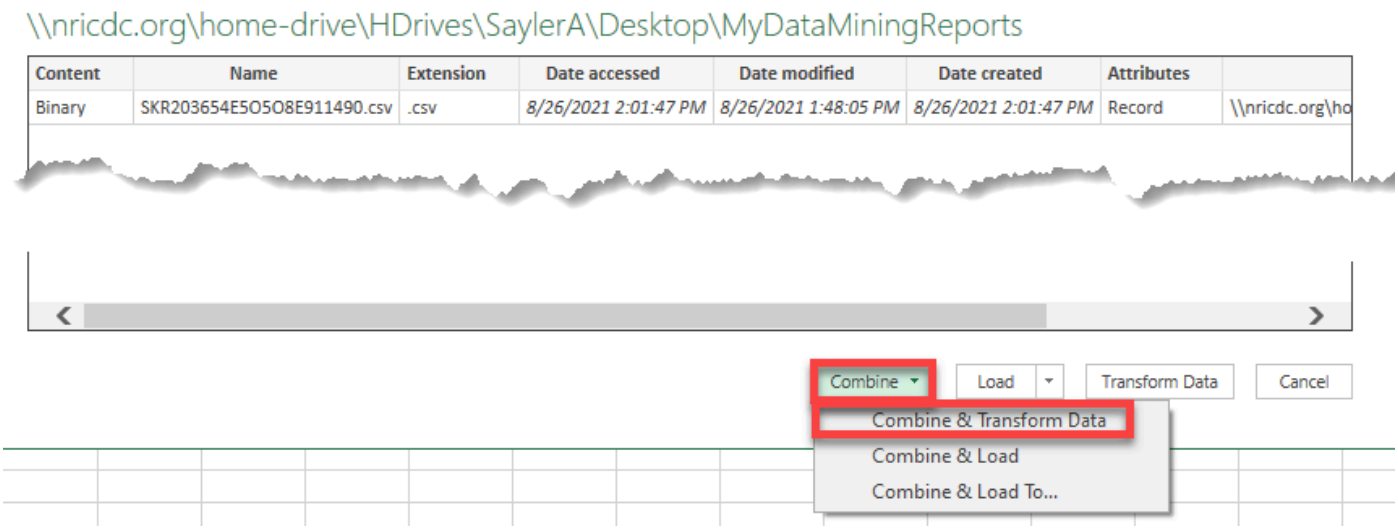
Create a desktop folder and move the Excel file into that folder. Next, open Excel, (1) click on the **Data** tab and select (2) **Get Data** > (3) **From File** > (4) **From Folder**. Replace the report in this folder each time the data mining report is run to keep the data visuals in Excel up-to-date.



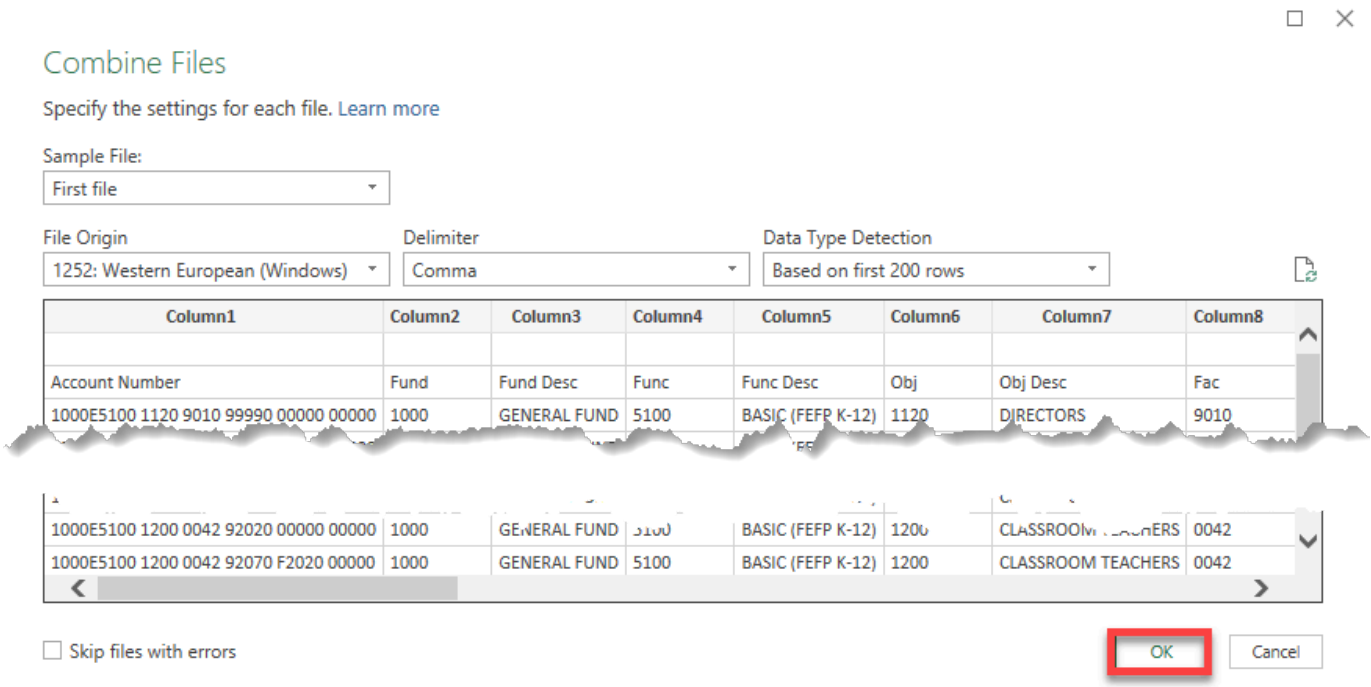
From within the browse window, select the folder containing the data mining file.



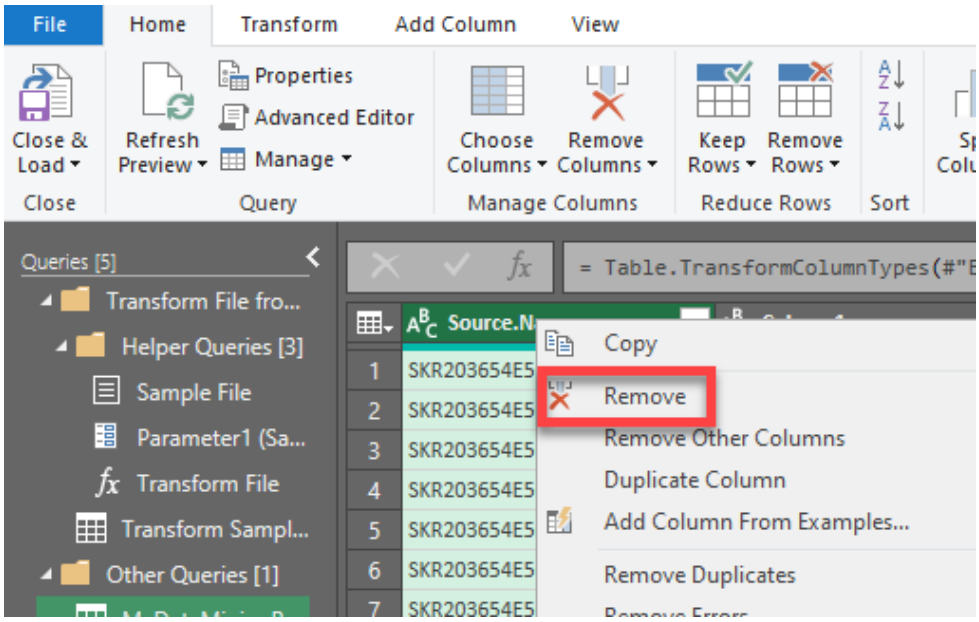
Click **Combine & Transform Data** to launch the Power Query Editor.



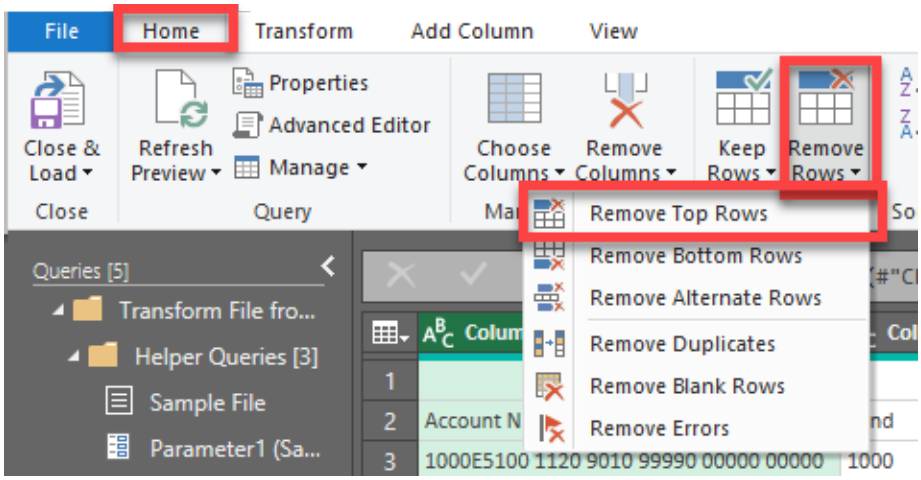
Click **OK** to continue.



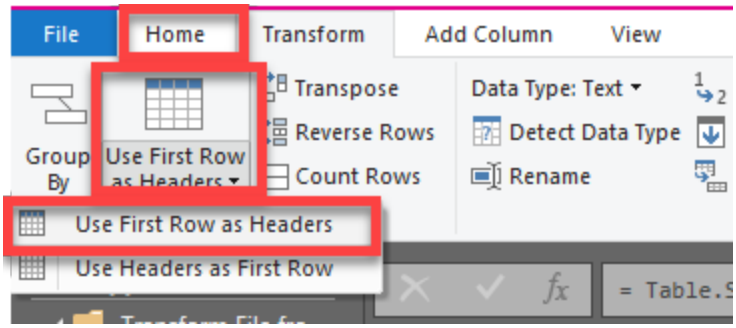
In the **Applied** Steps box on the right of the screen, click the "x" next to "Change Type". Next, right click on the column labeled "Source.Name" and select **Remove**.



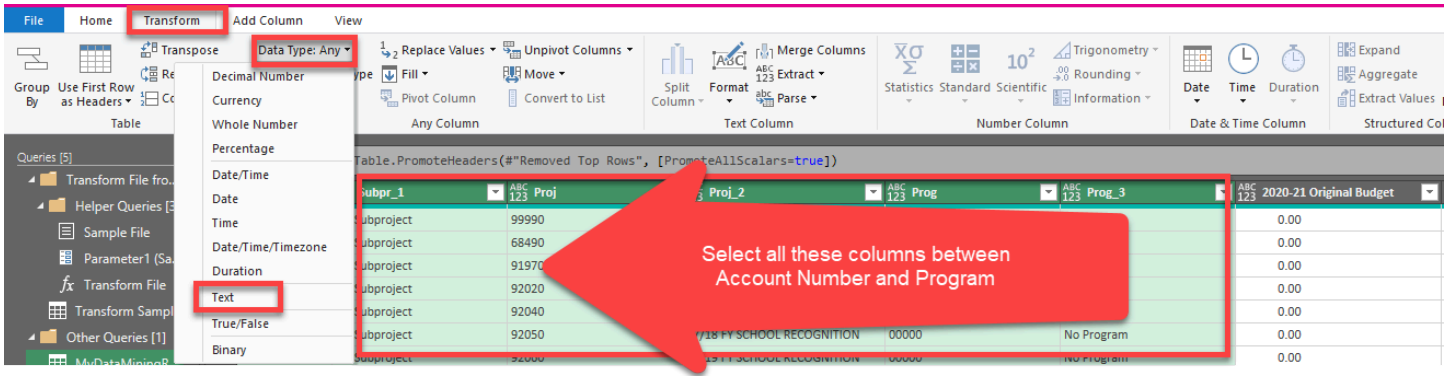
From the **Home** tab, select **Remove Rows > Remove Top Rows** and enter "1" to remove the top row.



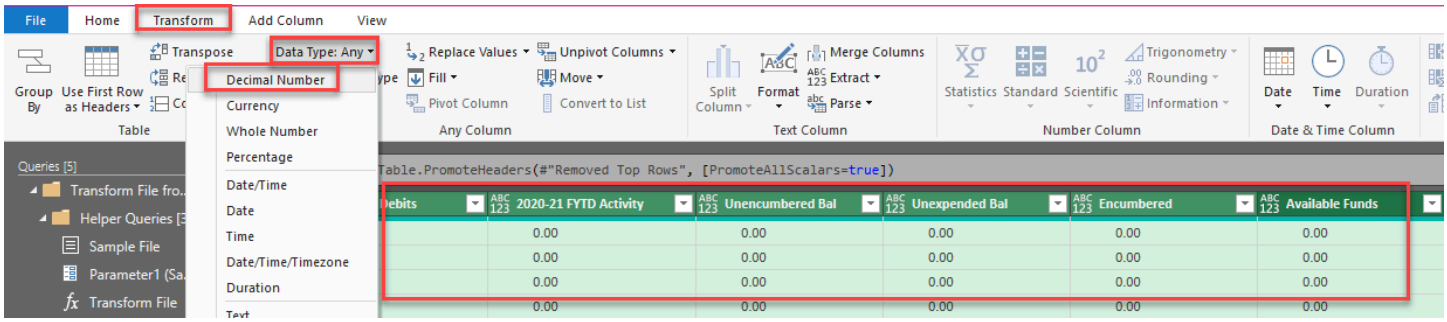
One the **Home** tab, click **Use First Row as Headers**.



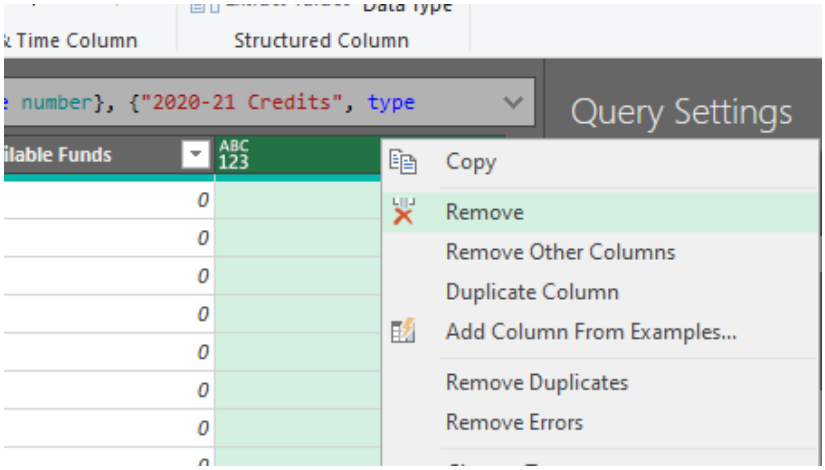
Click on the column heading "Account Number." Please press Shift and click on the program description column to select all the columns between the two. Next, click **Transform > Data Type > Text**.



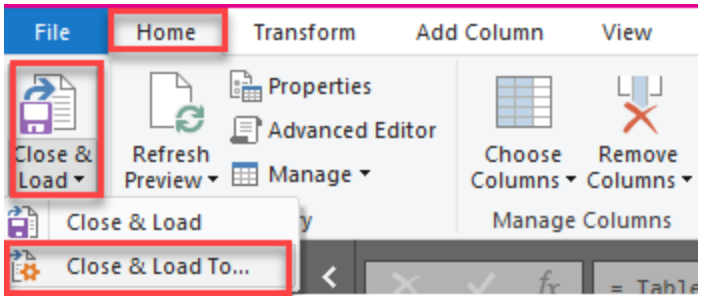
Select all columns from "Original budget" to "Available funds". Next, click **Transform > Data Type > Decimal Number**.



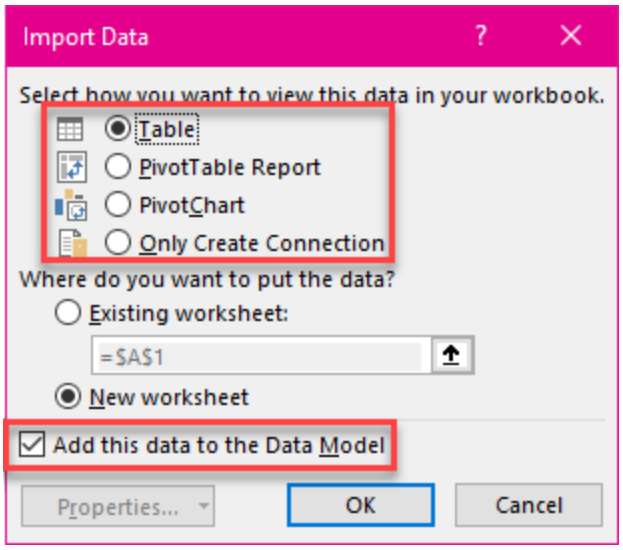
If there are any remaining blank columns, select those columns, right click and choose **Remove**.


Time Column
Structured Column
number}, {"2020-21 Credits", type
Query Settings
ilable Funds
ABC
123
0
0
0
0
0
0
0
Copy
Remove
Remove Other Columns
Duplicate Column
Add Column From Examples...
Remove Duplicates
Remove Errors

Label columns as desired. Click **Home > Close & Load (arrow down) > Close & Load To…**.

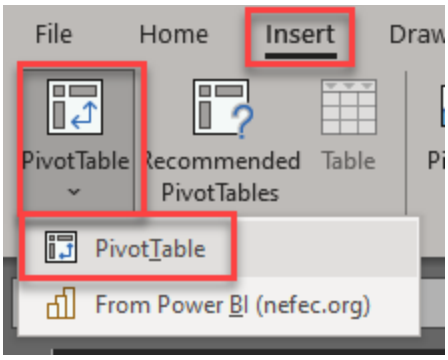


Excel provides several options for importing the data, please select **Table** and check the "Add this to the Data Model" box.

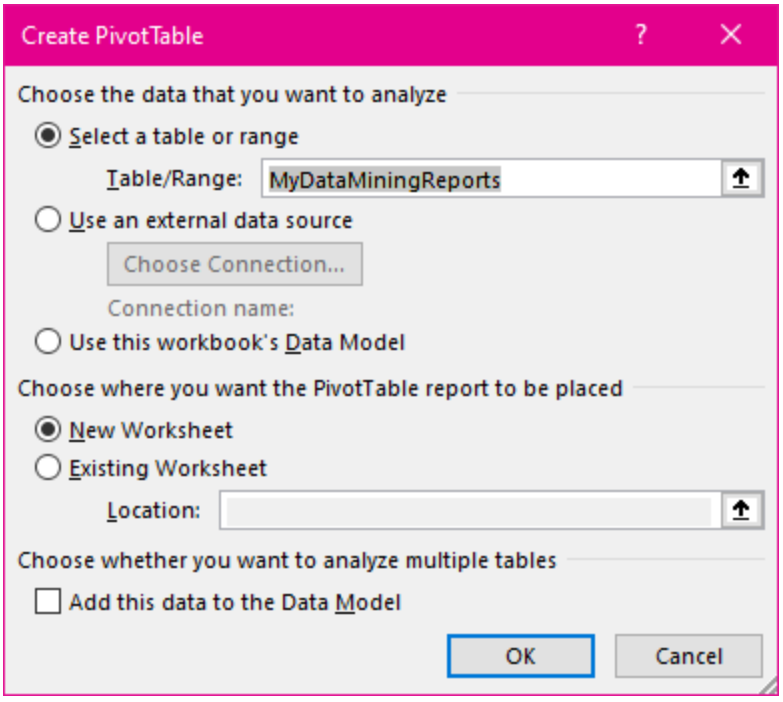


Pivot Table

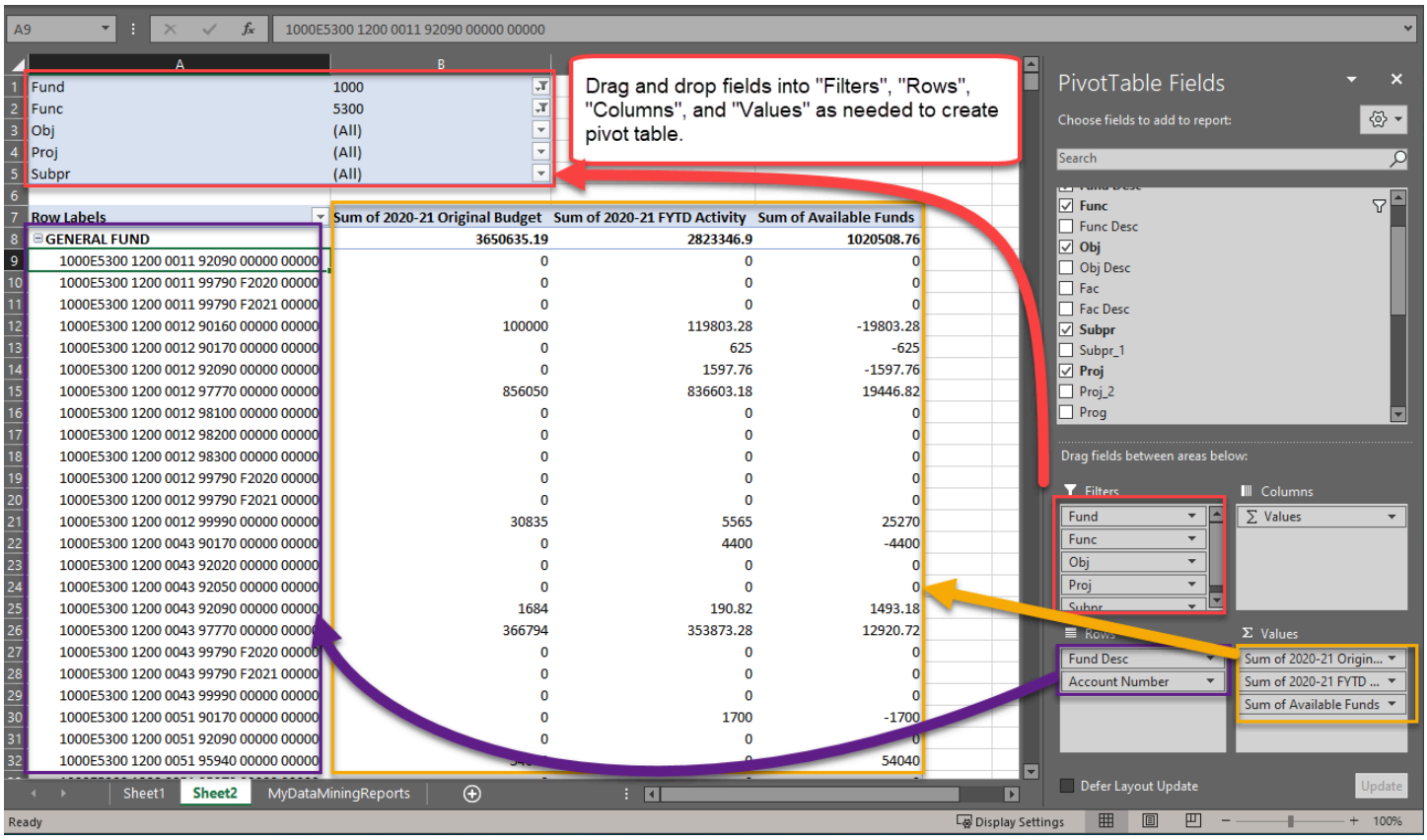
Select **Insert > PivotTable > PivotTable**.



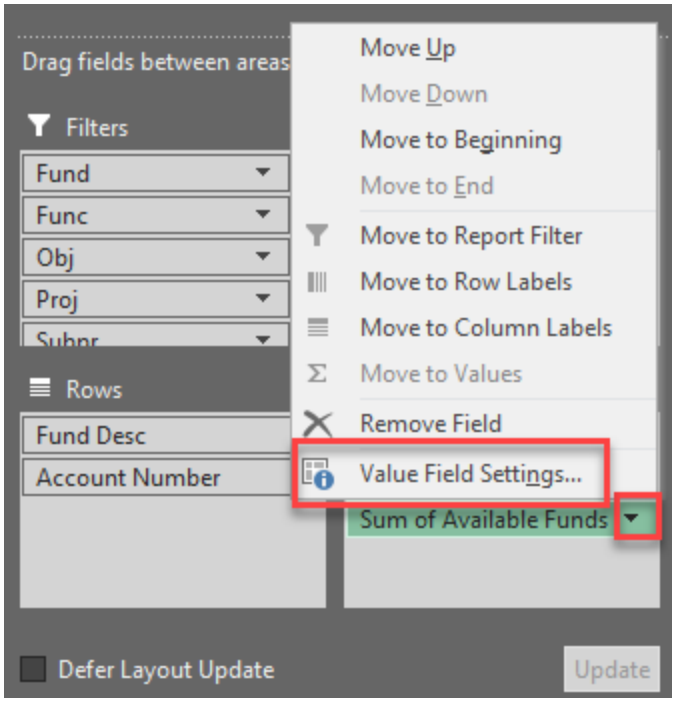
Click **OK** for the default options.



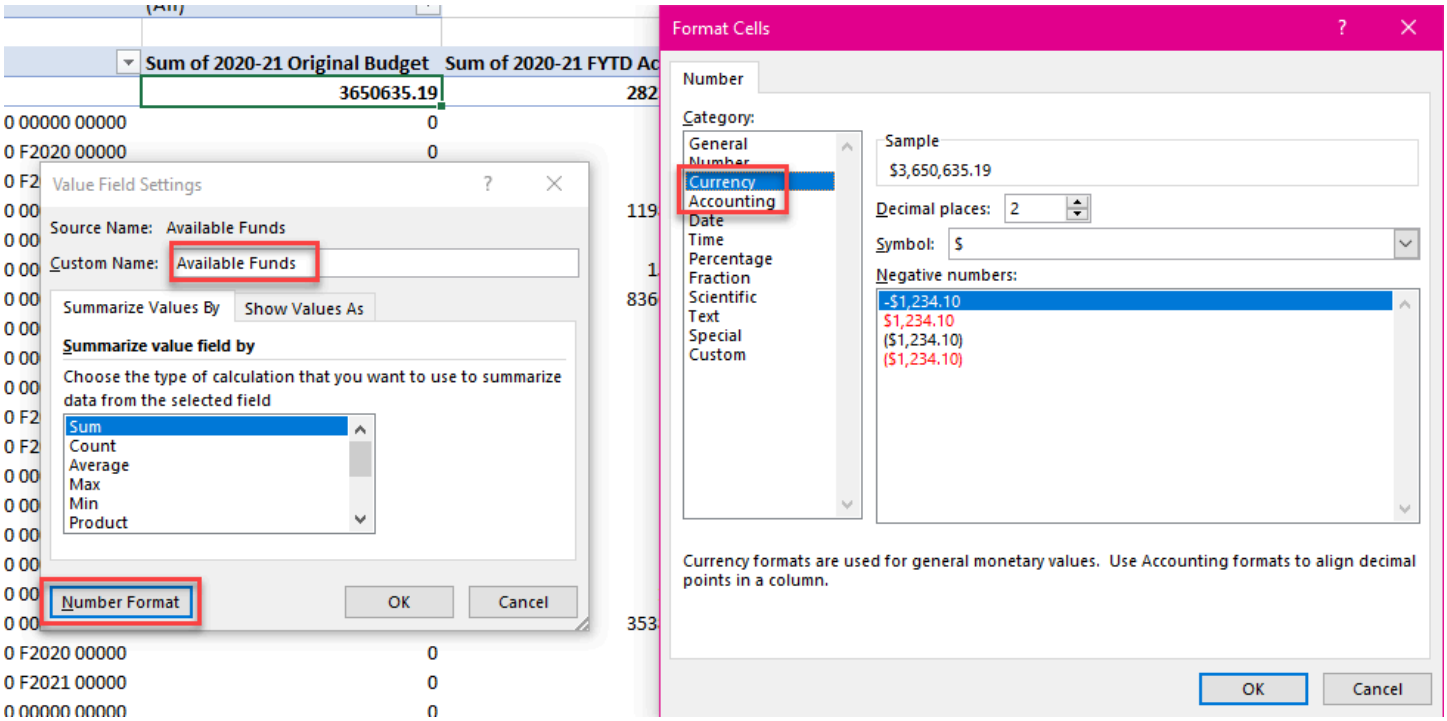
Drag and drop fields into the appropriate boxes to design the pivot table. The “Filters” box is especially helpful to create an interactive pivot table.



For each of the items in the “Values” box, click the down arrow and then select **Value Field Settings**.



Update the field name, if desired. Click the **Number Format** button in order to change to currency or accounting.



The data is now in the form of an interactive pivot table, which allows the user to filter the data. The process detail here needs to be done once and then the file can be saved. When the data needs to be updated, run the data mining report in

Skyward with updated dates (the report must stay in this exact format – only the data changes). That Excel version of the data mining report can be downloaded from Skyward and then REPLACE the file in the folder. Once the file has been replaced, simply click the "Refresh" button to bring new data into the Excel data model.