

# Task 1 - Excel

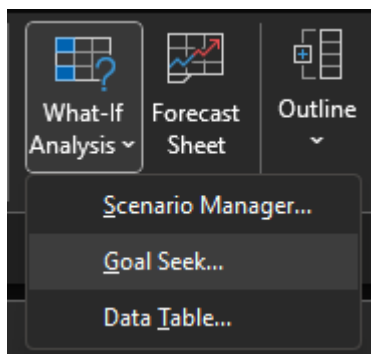
## Goal Seek

Here's a simple example. You want to save money each month, and will save for 5 months. You may create a spreadsheet like this:

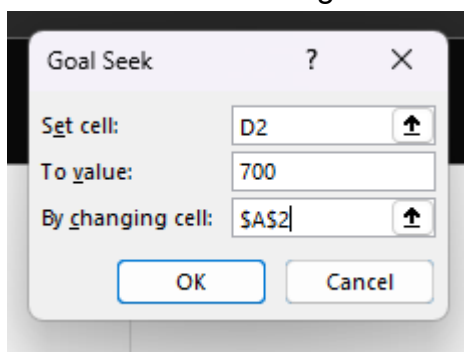
	A	B	C	D
	Amount Saved per Month	Months		Total Saved
1				
2	£15	5		=A2*B2
3				

Suppose you want to calculate how much you need to save each month in order to reach a target of £700. You could use Goal Seek.

To perform a Goal Seek, select the cell where you want the desired result. Then click "Data", "What If" and then "Goal Seek".

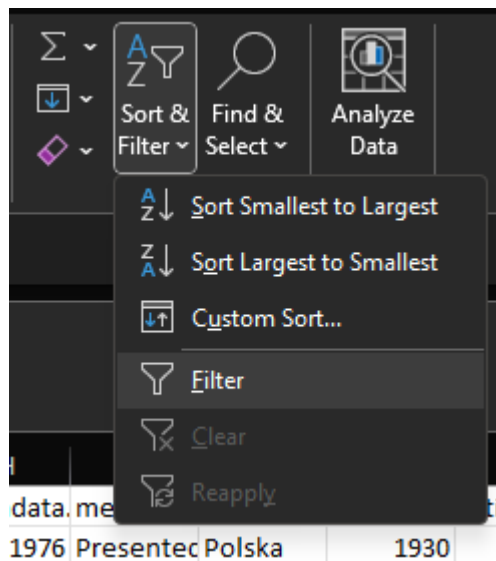


In the box that says "To Value" set your target. In the box that says "By Changing Cell" select the cell that is to change. In this case, cell A2. Click OK.

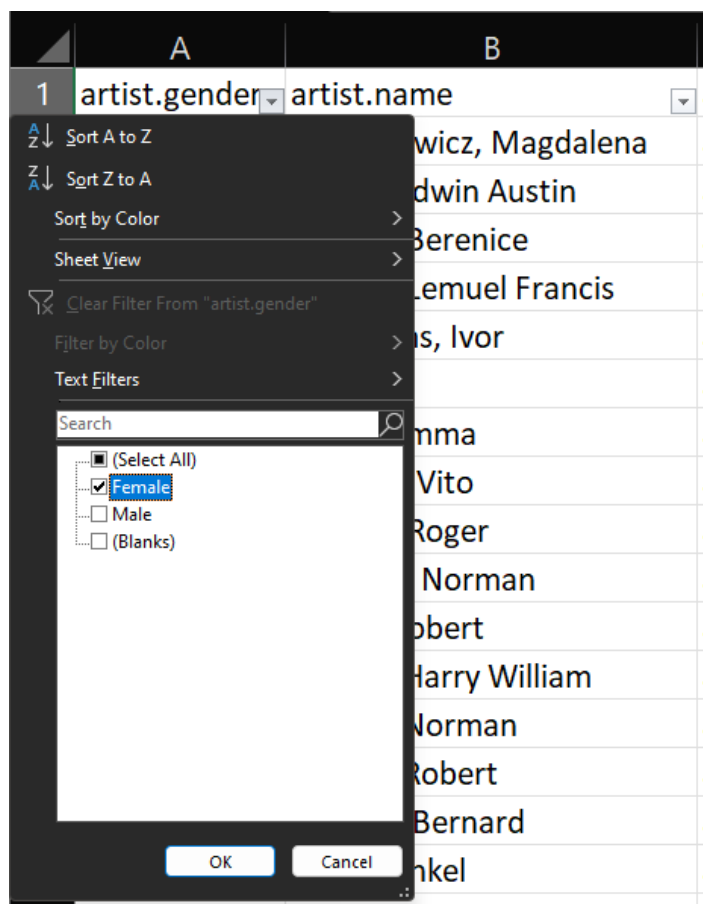


## Filter

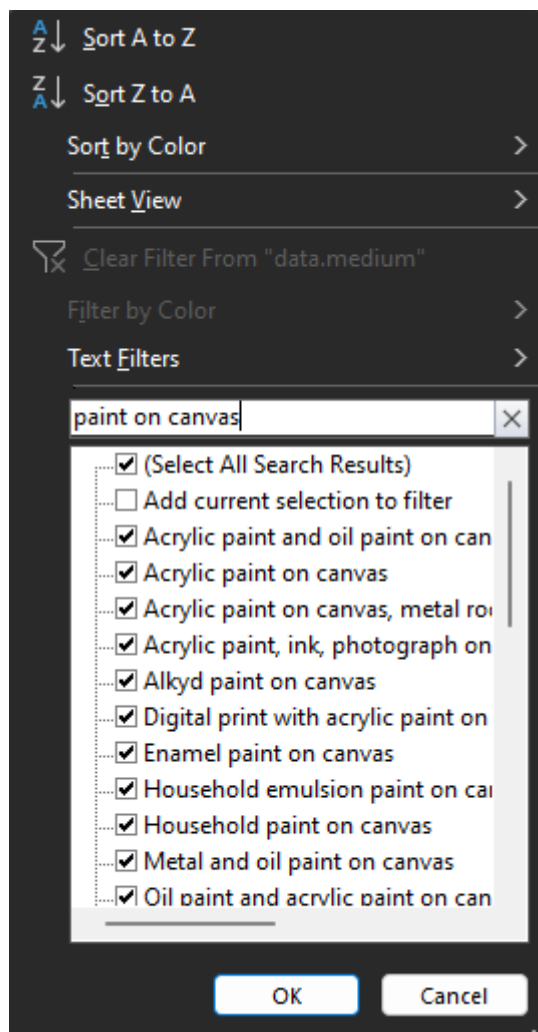
To filter, click anywhere on the top row. Then on the "Home" tab, select "Sort & Filter" and then "Filter".



To filter, click the arrow that appears next to the column heading you want. Then select what you want to filter by and click OK. For example, by gender:



You can even use the search button to filter, which is useful for some datasets:



Often when you filter data, you will want to copy and paste it into a separate spreadsheet for data analysis.

 Scottish Maths Conference Workshop 2023.xlsx

## Task

1. Open sheet "Example." Recreated the Goal Seek example given above.
2. Open sheet "Goal Seek Practice."
  - a. This part of the spreadsheet applies rules to a given number. For example, a starting number of 5 gives an output of 50. Use Goal Seek to find to which starting number would give an answer of 12.5. Goal seek will not always be successful- try to get an output of 76.
  - b. This box performs a compound interest calculation. Use Goal Seek to find how much would need to be invested to save £750.
  - c. Xerxes is 10 and Yolanda is 25. We don't know how old Zander is. The mean and the median age of Xerxes, Yolanda and Zander are equal. Use Goal Seek to determine a possible value for Zander's age.
3. Open sheet "Loan Schedule." This sheet contains a loan schedule for a loan of £1500, paid back over 3 years.

- Change the "Monthly Repayment Amount". What happens to the loan outstanding on month 36 as it changes?
- We want the loan outstanding to be £0 at 36 months. Estimate the monthly repayment amount that would achieve this.
- Use Goal Seek to calculate the monthly repayment.

4. Right click the tab where it says "Laon Schedule". Use "Move or Copy" to copy the worksheet.

- A different bank offers the £1500 loan for £60 per month for three years. Find the effective annual rate. (Hint: this time use Goal Seek to change the annual effect rate.)

5. Open sheet "Tate Source."

- Filter the artists by gender to find all the male artists.
- Copy the "acquisition date" column for the **male** artists into the sheet named "Tate Paste".
- Repeat this process, this time with female artists.
- Take a look at the table and the graphs. Do you recognise the formulae used here?