

📖 HOW TO CREATE A GROUPED FREQUENCY DISTRIBUTION USING EXCEL (Pivot Table Method)

1 Make sure your raw data are ready

Your data are already in the first column of the Excel table **Swim_times**.

Example:

Swim_times

84.7

88.3

91.0

...

No additional preparation is needed.

2 Insert a Pivot Table

Click anywhere inside the column containing the swim times.

Go to:

Insert → PivotTable

Select:

- **New Worksheet**
- Click **OK**

Excel creates an empty PivotTable layout.

3 Build the Pivot Table

Drag the variable **Swim_times**:

► **Into the Rows area**

Excel will display every individual value.

► **Into the Values area**

Excel should automatically use **Count**, which gives frequency (how many observations).

If not:

Right-click → **Value Field Settings** → **Count**

4 Group the data into intervals (the key step)

Right-click any value in the PivotTable's **Row Labels** column → choose **Group...**

You will see:

- **Starting at:** the lower real limit of the first group — 59.5 for the group 60–64, because the times are recorded to tenths (so that 84.7 s falls into 85–89, as in the textbook)
- **Ending at**
- **By** (the class width)

Now choose the class width you want:

✓ **By = 5 (as used in the textbook)**

or

✓ **By = 6 (also completely correct — just produces fewer classes)**

✚ **Both choices are statistically correct** as long as:

- all intervals have equal width
- intervals cover the entire range
- there is no overlap
- the real limits are respected for continuous data (Starting at = 59.5, not 60)

5 Excel generates the grouped frequency distribution

Example output:

Interval Count of Swim_times

60–64 2

65–69 2

70–74 4

... ...

This is your grouped frequency table.

6 (Optional) Create a Histogram directly from the Pivot Table

1. Select the Pivot Table
2. Go to **Insert** → **Column Chart**

3. Format axis labels if needed

You now have a clean histogram reflecting your chosen class width.

Important Statistical Note for Students

This is the pedagogical core message:

There is not only one “correct” class width.

Both 5 and 6 (or any reasonable simple number such as 2, 5, 10) are fully acceptable, **as long as intervals are equal, logical, and cover the full data range.**

The width of 5 gives more classes (more detail),
while the width of 6 gives fewer classes (simpler overview).

Neither is wrong — the difference is in the level of detail, not in correctness.

This mirrors the logic from Chapter 2 of the textbook.

Ultra-Short Summary for Students

(Perfect as a slide or cheat sheet)

1. **Insert Pivot Table**
2. **Swim_times → Rows & Values (Count)**
3. **Right-click → Group → choose width (5 or 6)**
4. Pivot Table instantly creates grouped frequencies
5. (Optional) Add a chart for histogram

References

Microsoft. (n.d.). *Group or ungroup data in a PivotTable*. Microsoft Support. Retrieved October 27, 2026, from <https://support.microsoft.com/en-us/excel/get-started/group-or-ungroup-data-in-a-pivottable>

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