

1. **Tutorial** (Objective → Why it matters → Steps → Worked example → Try-it tasks → Common mistakes → Quick recap)
2. **Starter Workbook** (sheets: Instructions, Data, Tasks, Hints, Answers, Checklist, Lookup).

Would you like to start with something **foundational** (like formulas & SUM/AVERAGE) or a **fun one** (like charts)?

User:

5

ChatGPT:

Great choice 🎉 — **Topic 5: Lookup Functions.**
We'll focus on **VLOOKUP** (and peek at XLOOKUP as a bonus).

Tutorial: Lookup Functions

Objective

Learn how to use **VLOOKUP** to quickly find data in a table (like looking up a student's grade by their ID).

Why It Matters

- Saves time compared to scrolling through long lists.
- Useful for referencing prices, grades, codes, staff details, etc.
- Often used in exams and real office work.

Steps for VLOOKUP

The formula is:

```
pgsql
=VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])
```

1. **lookup_value** → What you're searching for (e.g., a Student ID).
2. **table_array** → The full table that contains the data.
3. **col_index_num** → The column number (from left) of the result you want.
4. **range_lookup** → FALSE for exact match (recommended), TRUE for approximate.

Worked Example

Imagine this table:

StudentID Name Grade

S101	Amir	85
S102	Bella	72
S103	Chen	91

If we want to find **Bella's grade**:

Formula in another cell:

```
php
=VLOOKUP("S102", A2:C4, 3, FALSE)
```

Result → 72 🎉

Try-it Tasks

Task 1 (Starter): Use VLOOKUP to find the grade for StudentID S103.

Task 2 (Core): Use VLOOKUP with a cell reference (e.g., E2 contains the StudentID to look up).

Task 3 (Stretch): Use XLOOKUP instead of VLOOKUP to find the same result.

⚠ Common Mistakes

- Forgetting to lock the table with \$ (absolute reference) → causes errors when copying formulas.
- Using the wrong column index number.
- Leaving out FALSE → Excel may return wrong results.

🔄 Quick Recap

- **VLOOKUP** finds values in a table by column.
- Always check: lookup value, table, column number, exact match (FALSE).
- Use **absolute references** (\$A\$2 : \$C\$4) if copying formula.

👉 Next: I'll create your **Starter Workbook** with sample data, tasks, hints, and answers.

Do you want me to **generate a Python script** you can run to create the workbook, or should I **prepare copy-paste tables** you can drop into Excel directly?

User:

python

ChatGPT:

Awesome—here's a complete, ready-to-run **Python (openpyxl)** script that builds your **Lookup Functions** starter workbook.

It creates 7 sheets: **Instructions, Data, Tasks, Hints, Answers, Checklist, Lookup** with sample data, VLOOKUP & XLOOKUP setups, data validation dropdowns, a formatted table, conditional formatting, and a column chart.

🎥 How to run (Windows/Mac)

1. Install Python 3 (if you don't have it).
2. Open Terminal (Mac) or Command Prompt/PowerShell (Windows).
3. Install the library:

```
nginx
pip install openpyxl
```

4. Save the script below as `make_lookup_workbook.py`.
5. Run:

```
nginx
python make_lookup_workbook.py
```

6. Open the generated file **lookup_practice.xlsx** in Excel.

Note: Files can't be downloaded from chat—you create and save the workbook locally by running the script.

🧩 Python script (copy everything into a .py file)

```
python
# make_lookup_workbook.py
# Creates: lookup_practice.xlsx
# Sheets: Instructions, Data, Tasks, Hints, Answers, Checklist, Lookup

from openpyxl import Workbook
from openpyxl.styles import Font, Alignment, PatternFill, Border, Side
from openpyxl.worksheet.datavalidation import DataValidation
from openpyxl.worksheet.table import Table, TableStyleInfo
from openpyxl.chart import BarChart, Reference
from openpyxl.formatting.rule import CellIs, ColorScaleRule
from datetime import datetime

wb = Workbook()

# Helper styles
title_font = Font(bold=True, size=14)
header_font = Font(bold=True)
```