



# TEKSOUTH

Tips and Tricks: March 2026  
Stop Searching, Start Modeling

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# Session Info

- 45 Minutes
- Audience: Excel users ready to level up
- Goal:
  - Understand why VLOOKUP breaks,
  - How XLOOKUP fixes it,
  - And when to move to a data model

# Block 1: The Problem VLOOKUP Was Solving (5 min)

- Sound Familiar?
  - "Can you just add X to that report real quick?"
  - 20 minutes later -row 47 -at least one mistake you don't know about yet
  - They'll ask you to do it again next week
- The Core Scenario
  - Two tables -one Sales -one Products -shared key column
  - Goal: pull prices automatically - no manual copying
- Why You Can't Just Type It
  - Hundreds of rows in the lookup table
  - Prices change - you need a live connection, not a paste
  - You have better things to do than play human VLOOKUP
- The Core Concept: Key Columns
  - Every lookup needs a shared key between two tables
  - Ask: "What column do both tables have in common?"
  - That column is your key - everything else follows

# Block 2: VLOOKUP - How It Works and Why It Breaks (10 min)

- Syntax
  - =VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])
  - lookup\_value: the key you're searching for
  - table\_array: **must start with the key column**
  - col\_index\_num: which column number to return
  - range\_lookup: FALSE for Exact Match; true by default
- Basic Example
  - =VLOOKUP(A2, Products!\$A:\$B, 2, FALSE)
  - When it works -it feels like magic
  - The problem is when it doesn't

# VLOOKUP() Demo

# Block 2: VLOOKUP - How It Works and Why It Breaks (10 min)

- The Four Failure Modes
  - 1. Key Must Be in the First Column
    - Key in column C? You're moving someone else's data
    - That goes over great in a shared file
  - 2. Column Index Numbers Are Fragile
    - Colleague inserts a column: your formula returns the wrong value
    - No error -no warning -report looks fine -it is not fine
    - You won't catch it until a meeting
  - 3. Default Behavior Is Wrong
    - range\_lookup defaults to TRUE (approximate match) if left blank
    - Assumes sorted data -silently returns garbage on unsorted tables
    - Have you left that blank at least once?
  - 4. One Column at a Time
    - Need five fields? Write five formulas
    - Each recalculates the entire lookup range independently
    - File starts to drag -spinning wheel becomes a familiar companion

# Block 2: VLOOKUP - How It Works and Why It Breaks (10 min)

- Key Takeaway

- VLOOKUP works – until it doesn't
- When it fails –it fails quietly
- Built for a simpler time when nobody touched your columns

# Block 3: XLOOKUP - The Upgrade (10 min)

- Microsoft Finally Listened (2019)
  - Fixed nearly every VLOOKUP complaint
  - Rethought from scratch - not just patched
  - No good reason to write a new VLOOKUP in M365
- Syntax
  - =XLOOKUP(lookup\_value, lookup\_array, return\_array, [if\_not\_found], [match\_mode], [search\_mode])
  - lookup\_array:column you're searching IN
  - return\_array:column (or columns) you want back
  - if\_not\_found:built-in error handling - no IFERROR needed

# Block 3: XLOOKUP - The Upgrade (10 min)

- Where XLOOKUP Wins
  - 1. Lookup Column Can Be Anywhere
    - Search and return columns are separate arguments
    - No restructuring someone else's data just to make it work
  - 2. No Column Index Numbers
    - Reference return column by name -not position
    - Insert a column anywhere - formula still works
  - 3. Built-In Error Handling
    - Old way: =IFERROR(VLOOKUP(...), "Not Found") - a workaround for a design flaw
    - New way: =XLOOKUP(..., "Not Found") - the way it should have always worked
  - 4. Returns Multiple Columns
    - One formula -results spill across adjacent cells
    - Replaces five VLOOKUPS with one XLOOKUP
  - 5. Searches in Reverse
    - set search\_mode to -1 to find the last match
    - VLOOKUP cannot do this at all

# Block 3: XLOOKUP - The Upgrade (10 min)

- Side-by-Side

- Key column placement:
  - VLOOKUP: first only
  - XLOOKUP: anywhere

- Return by name:
- Error handling:
- Multiple columns:
- Reverse search:

VLOOKUP: No – XLOOKUP: Yes

VLOOKUP: No – XLOOKUP: Yes

VLOOKUP: No – XLOOKUP: Yes

VLOOKUP: No – XLOOKUP: Yes

# XLOOKUP() Demo

# Block 3: XLOOKUP - The Upgrade (10 min)

- When to Still Use VLOOKUP
  - Sending files to pre-2019 Excel users
  - Can't control who opens the file
  - Otherwise: XLOOKUP -every time

# Block 4: The Limits of Lookup Formulas (5 min)

- The Ceiling Nobody Warns You About
  - Even XLOOKUP is still just a formula
  - Formulas were never designed to be your reporting infrastructure
  - Maybe you've already hit this wall - maybe that's why you're here
- Performance
  - 50,000 rows -column of XLOOKUPS -recalculates on every change
    - save the file: recalculate
    - change one cell: recalculate
    - switch tabs: recalculate
  - You start going for coffee while the file catches up
- One Match Only
  - Returns the first match -the rest are silently ignored
  - Multiple transactions per customer? You get one
  - Aggregating requires SUMIF / COUNTIF stacked on top - clean question - ugly answer

# Block 4: The Limits of Lookup Formulas (5 min)

- Chaining Lookups Gets Ugly Fast
  - Three tables = lookups nested inside lookups
  - Ships fine -six months later you stare at it like a stranger wrote it
  - When it breaks -good luck finding where
- Your Spreadsheet Becomes Infrastructure
  - Sheets feeding sheets -helper columns nobody asked for
  - You're the only person who knows how it works - that's not a feature
  - #REF! errors cascade like dominoes -deadline in two hours
  - This is the moment: there has to be a better way

# Block 5: Introduction to Data Modeling (10 min)

- What Is a Data Model?
  - Connect tables through defined relationships -not formulas
  - Any report tool (PivotTable -Power BI -DAX) queries across all tables
  - No column numbers -no fragile chains -no #N/A errors on Monday morning
- The Star Schema
  - One Fact Table at the center - f\_Transactions
  - Dimension Tables surrounding it - d\_RCCC and others (products -customers -dates - departments)
  - Every dimension connects to the fact table through a key column
  - That simple shape solves most of the formula problems we just covered
- Why This Beats Lookup Formulas
  - Fragile column numbers: relationships defined by name
  - One match per formula: model handles one-to-many automatically
  - Slow recalculation: engine only queries what the report needs
  - Chained lookups: tables connect directly -no intermediary columns
  - Relationships are visible -documented -editable

# Data Modeling Live Demo

# Block 5: Introduction to Data Modeling (10 min)

- The Mindset Shift

- Formula thinking: "I need to pull this column into this table"
- Model thinking: "These tables are connected – my report uses any field from any table"
- Stop moving data –define structure once –reports draw from it cleanly every time
- From: rebuilding the same report every month
- To: building the system that runs itself

# Block 6: Wrap-Up and Q&A (5 min)

- What We Covered

- VLOOKUP: got us out of manual matching -created its own category of problems
- XLOOKUP: fixed the formula -flexible -readable -no IFERROR required
- Data Model: changes the game -the answer when formulas hit their ceiling

# Block 6: Wrap-Up and Q&A (5 min)

- Your Next Steps

- Replace your next VLOOKUP with XLOOKUP – feel how much cleaner it reads
- Find one workbook chaining lookups across sheets – that's your data model candidate
- Load two tables into Power Pivot –define a relationship –just to see what it feels like
- Ask yourself: am I moving data or modeling it?

# Block 6: Wrap-Up and Q&A (5 min)

- The Bigger Picture

- Lookup formulas are a tool –the data model is a discipline
- One gets you through the day –the other gets you out of the rebuild cycle
- That frustration – VLOOKUP breaking silently –files too slow to open –IFERROR and hope
- That frustration is pointing you somewhere
- This is where it points