WEEK 5 · GUIDED BUILD

Tables That Work: SNAP

File: **SNAP_pivot_data**. USDA SNAP participation and benefits by state and month, FY 2020–2025

YOUR WORKBOOK, WHEN YOU'RE DONE

SNAP	STATE_FY	Pivot sheets	Word document	OUTPUT
One row per state per month. Given	One row per state per fiscal year, with population. Given	TREND, NUMBERS, GROUPING, BINS, SHARES, CHANGE, EXPLORE, REGION	The REGION table, pasted and written up	Every answer
Steps 1–8	Steps 5, 9	Steps 1–9	Step 10	Q1–Q14

0 Download the file and look before you build

- From BrightSpace, under the Data tab, Week 5: **SNAP_pivot_data**
- Read the **About** sheet. SNAP's fiscal year runs **October to September**: FiscalYear 2025 is Oct 2024–Sep 2025
- **SNAP**: Households and Persons are monthly *counts*; Cost is dollars of benefits issued that month
- **STATE_FY**: each state's yearly totals, its 2025 population, its average monthly participants (**AvgPersons**) and the share of residents on SNAP (**StateRate**)
- Add a blank sheet named **OUTPUT** for your answers

Both are already Excel tables. Always build a pivot from the table name, never a range like A1:G3673.

CHECK

SNAP: 3,672 rows (51 × 72 months)

STATE_FY: 306 rows (51 × 6 years)

1 A chart for the shape

- Click in the SNAP table `Insert` 〉 `PivotChart`, new sheet. Rename it **TREND**
- Axis: **Month**. Values: **Sum of Cost**. Chart type: **Line**
- If Excel adds Years or Quarters on its own, right-click a date `Ungroup`
- Format the axis: `Format Axis` 〉 `Number` 〉 `Custom` `#,##0,,` and title it **Billions of dollars**

Mac: if you only see PivotTable, build that first, then `PivotTable Analyze` 〉 `PivotChart`.

CHECK

One line, Oct 2019 to Sep 2025

Highest point: Dec 2022

INTERPRET IT · ANSWER ON OUTPUT

Q1 Describe the *shape* of the line in two sentences: when it jumps, when it peaks, when it falls.

Q2 What were benefits in December 2022, to the dollar? Was it easier to get that from the chart or from the pivot next to it?

2 Stocks and flows

- New PivotTable from SNAP, new sheet **NUMBERS**
- Rows: **FiscalYear**. Values: **Persons** (Sum) and **Cost** (Sum)

The U.S. has about 342 million people. Something here is wrong.

CHECK

FY 2025:
Sum of Persons
505,015,218

Sum of Cost
95,571,844,111

INTERPRET IT · ANSWER ON OUTPUT

Q3 Which column is a *stock* and which is a *flow*? Why is "Sum of Persons" wrong, and why is Sum of Cost right?

3 Calculated fields and their limits

- On NUMBERS: `PivotTable Analyze` 〉 `Fields, Items & Sets` 〉 `Calculated Field`
- Name **AvgMonthly**, formula `= Persons / 12`. Add
- Name **CostPerPerson**, formula `= Cost / Persons`. Add, OK. Format it with two decimals
- Now drag **Month** into Rows, under FiscalYear. Find Sep 2025

A calculated field always works on sums. Remove Month from Rows when you're done.

CHECK

FY 2025:
AvgMonthly 42,084,602
CostPerPerson $189.25

Sep 2025 AvgMonthly:
3,428,891

INTERPRET IT · ANSWER ON OUTPUT

Q4 41.1 million people got SNAP in September 2025, but AvgMonthly says 3.4 million. Why does CostPerPerson still work at the month level when AvgMonthly doesn't?

4 Group dates: calendar vs. fiscal year

- New PivotTable from SNAP, sheet **GROUPING**. Rows: **Month**. Values: **Cost** (Sum), format `#,##0.0„,`
- Right-click a *date* in the rows `Group`, select only **Years**
- Now add **FiscalYear** to Rows and remove **Years (Month)**, Excel's name for the grouped Month

Group only appears on a row label, never a value. Mac: `PivotTable Analyze` 〉 `Group Field`. Pivots from the same table share grouping, so Ungroup when you're done or TREND groups too.

CHECK

Calendar 2019: 13.6
Calendar 2025: 70.5

FY 2025: 95.6
($ billions)

INTERPRET IT · ANSWER ON OUTPUT

Q5 Calendar 2019 shows $13.6 billion and 2025 shows $70.5 billion. Did SNAP spending really jump in 2020 and collapse in 2025? What's actually going on?

5 Group numbers into bins

- New PivotTable from **STATE_FY**, sheet **BINS**
- Filters: **FiscalYear** = 2025. Rows: **StateRate**. Values: **State** (Count)
- Right-click a rate `Group`: Starting at `0.04`, Ending at `0.24`, By `0.04`

CHECK

Five bins:
10, 20, 16, 3, 2 states

Total: 51

INTERPRET IT · ANSWER ON OUTPUT

Q6 In one sentence, describe how SNAP participation rates are spread across states. Which two are in the top bin?

6 Show Values As: two denominators

- New PivotTable from SNAP, sheet **SHARES**. Filters: **FiscalYear** = 2025
- Rows: **Region**, then **State**. Add **Cost** to Values three times
- Second Cost: right-click `Show Values As` 〉 `% of Column Total`
- Third Cost: `Show Values As` 〉 `% of Parent Row Total`
- Rename all three headers so a reader knows what each one is. Sort regions largest first

Mac: click a value ***`PivotTable Analyze`*** 〉 ***`Field Settings`****, then the* ***Show data as*** *list.*

CHECK

Northeast: 12.7% of the U.S.

New York: 8.0% of the U.S., 63.3% of the Northeast

INTERPRET IT · ANSWER ON OUTPUT

Q7 Vermont is 0.2% of U.S. benefits and 1.2% of the Northeast's. Write one sentence using each number, naming the denominator both times.

7 Difference From and Running Total

- New PivotTable from SNAP, sheet **CHANGE**. Filters: **FiscalYear** = 2023
- Rows: **Month** (ungrouped). Values: **Cost** three times, format `#,##0.00„,`
- Second Cost: `Show Values As` 〉 `% Difference From`, Base field **Month**, Base item **(previous)**. Format `0.0%;(0.0%)`
- Third Cost: `Show Values As` 〉 `Running Total In`, Base field **Month**

These are pivot settings, not formulas. Oct 2022 is blank: its "previous" month is filtered out.

CHECK

Mar 2023: 8.70, (16.3%)

Running total, Sep 2023: 106.39 = FY 2023 on GROUPING

INTERPRET IT · ANSWER ON OUTPUT

Q8 Pandemic emergency allotments ended after February 2023. Which two months show it? How much did monthly benefits fall from February to April, in dollars and percent?

8 Slicers and timelines

- New PivotTable from SNAP, sheet **EXPLORE**. Rows: **State**. Values: **Cost** (Sum), format `#,##0.0„`. Sort largest first
- `PivotTable Analyze` 〉 `Insert Slicer` 〉 `Region`
- `PivotTable Analyze` 〉 `Insert Timeline` 〉 `Month`. Select Oct 2024–Sep 2025
- Right-click the slicer `Report Connections`, check the SHARES pivot too

Mac: no Insert Timeline? Add a second slicer on FiscalYear instead. Clear every slicer before anything leaves Excel.

CHECK

Northeast: New York $7,687.0M, Vermont $149.9M

INTERPRET IT · ANSWER ON OUTPUT

Q9 In the Southwest, which state received the most and which the least?

Q10 Click Northeast, then look at SHARES. What happened to "% of column total"? Why is that dangerous in a finished table?

9 Rates by region: ratios of totals

- New PivotTable from **STATE_FY**, sheet **REGION**. Rows: **Region**. Columns: **FiscalYear**, filtered to 2024 and 2025
- Values: **AvgPersons** (Sum) and **Cost** (Sum)
- Calculated field **Rate**: `= AvgPersons / Population`. Format 0.0%
- Calculated field **PerPerson**: `= Cost / PersonMonths`. Two decimals
- `Design` 〉 `Grand Totals` 〉 `On for Columns Only`
- Right-click a value in the **2025 Sum of Rate** column `Sort` 〉 `Sort Largest to Smallest`

Rate and PerPerson divide one sum by another, so they're right at every level: state, region or U.S.

CHECK

FY 2025 total:
AvgPersons 42,084,602
Rate 12.3%
PerPerson $189.25

Northeast: 13.7%

INTERPRET IT · ANSWER ON OUTPUT

Q11 Add **StateRate** to Values and change it to **Average**. The U.S. shows 11.5%, not 12.3%. Which one is the share of U.S. residents on SNAP? Why do they differ? Then remove it.

WORTH KNOWING: THE DATA MODEL (EXCEL FOR WINDOWS)

STATE_FY already has population joined in. Often it won't: program data and population come from different sources. On Windows you can keep them as two tables, add both to the **Data Model**, and relate them on State with `Data` 〉 `Relationships`. One pivot then uses fields from both, with no lookup column.

Take Region from the one-row-per-state table. Filters flow from it to the many-row table, not back.

SNAP		**STATES**
many rows per state	←	one row per state
State		**State**
Persons, Cost		Region, Population

10 Into Word

- On **REGION**, set the **FiscalYear** filter to **2025 only**
- Number formats: right-click each value `Value Field Settings` 〉 `Number Format`:
  AvgPersons `#,##0,` (thousands), Cost `#,##0„` (millions), Rate `0.0%`, PerPerson `0`
- Rename the headers so a reader understands them: **Participants (thousands)**, **Benefits ($ millions)**, **Share of residents**, **Per person ($/mo)**. Click **Grand Total** and type **All regions**
- Select the whole pivot and copy. In Word, paste and choose **Use Destination Styles** from the Paste Options button
- In Word: `Table Design`, a plain style; `Layout` 〉 `AutoFit` 〉 `AutoFit Contents`
- Above the table, type a title and a units line. Below it, a source note: *USDA Food and Nutrition Service, SNAP Data Tables; population from BEA SAINC51*

Mac: the Paste Options button appears at the bottom-right of the pasted table, or use `Edit` 〉 `Paste Special`. The pasted table is a copy: if the data changes, copy it again.

CHECK

Northeast:
4,866 12,147
13.7% 208

All regions:
42,085 95,572
12.3% 189

INTERPRET IT · ANSWER ON OUTPUT

Q12 Midwest, Southwest and Mid-Atlantic all show $183 per person. Are they really equal? Is rounding to the dollar honest here?

Q13 Below the table in Word, write 3–4 sentences a newspaper reader could follow. Give a level and a share in the same sentence, name the denominator of every percentage, and explain why the Northeast ranks first on share of residents but fifth on total benefits.

Q14 What is one thing this table *can't* tell you? (Hint: who participates is not the same as who is eligible.)