The Restaurant & Café Math Workout

Printable Toolkit — Seven Cheat Sheets and Seven Planning Sheets

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Math Didn’t Have to Be This Hard: The Workout Series · Book 12

How to Use This Toolkit

This is the printable companion to *The Restaurant & Café Math Workout*. It has two parts:

- **Seven cheat sheets**, one for each chapter. Every rule is the one the chapter teaches, with one worked example from Maya's kitchen at Birch Street Café, the invented plant-based café in the book.
- **Seven planning sheets** to fill in with your own numbers: a recipe scaling sheet, a yield test sheet, a recipe cost card, a menu-mix sheet, a par and order sheet, a daily report and a tip-pool sheet.

Print as many copies as you like. Move heavy stock pots and cases with a cart or a helper.

The numbers in the examples are invented for practice, just as they are in the book, and no restaurant, brand, supplier or app is named. Recipes, prices, yields, target food cost and labor percentages, pars, tax rates and tip-pool rules are *in this example*. This toolkit is not food-safety training: your state or local health department adopts its own version of the food code, and its rules and your kitchen's procedures decide. Tipped wages, tip reporting and overtime appear only as the federal facts the book cites; your state may set more, and your employer's handbook sets the details. This toolkit is for learning; it is not legal, tax, HR or financial advice.

The whole set for this book, including seven free calculators:

`mathworkbook.netlify.app/go/book-cafe`

1. Kitchen Numbers

Measures, conversions and scaling a recipe.

- **Volume ladder:** 3 tsp = 1 tbsp · 16 tbsp = 1 cup · 1 cup = 8 fl oz · 4 cups = 1 qt · 4 qt = 1 gal = 128 fl oz.
- **Weight:** 16 oz = 1 lb · 1 oz = 28.35 g · 1 lb = 453.6 g. **Fluid ounces** measure volume; **ounces** measure weight. Say which.
- **Scaling factor** = new yield ÷ old yield. Multiply every line by the same factor.
- **Portion size changes too:** factor = (new portions × new size) ÷ (old portions × old size).
- **Friendly units:** 10 tsp = 3 tbsp + 1 tsp; 15 tbsp = 1 cup − 1 tbsp; 60 oz = 3 lb 12 oz.
- **°C** = (°F − 32) × 5/9. **°F** = °C × 9/5 + 32. A **#N scoop** holds 1/N quart (a standard numbering).

> **Worked example (Chapter 1).** Maya's red lentil soup makes 12 portions of 8 fl oz; Saturday needs 60. Factor = 60 ÷ 12 = **5**. Lentils 1.5 lb × 5 = **7.5 lb**; carrots 12 oz × 5 = 60 oz = **3 lb 12 oz**; stock 2 qt × 5 = 10 qt = **2.5 gal**; cumin 2 tsp × 5 = 10 tsp = **3 tbsp + 1 tsp**. The pot holds 60 × 8 = 480 fl oz = **3.75 gal**.

Your turn. Old yield _____ New yield _____ Factor _____
One line: _____ × factor = _____ = in friendly units _____

2. What's in the Pot

Unit cost, yield and the recipe cost card.

- **Unit cost** = pack price ÷ units in the pack.
- **Yield %** = edible portion (EP) weight ÷ as-purchased (AP) weight × 100, from your own yield test.
- **EP cost per lb** = AP price per lb ÷ yield. **AP to buy** = EP needed ÷ yield, rounded up.
- **Line cost** = amount used × unit cost, to the cent. **Cost card** (in this example): round each line, then add the lines.
- **Portion cost** = batch cost ÷ portions.

> **Worked example (Chapter 2).** Carrots cost $1.20 a pound as purchased, and Maya's yield test kept 80%: EP cost = $1.20 ÷ 0.80 = **$1.50 a usable pound**. The soup's cost card: lentils $2.40 + onions $1.00 + carrots $1.13 + stock $1.70 + coconut milk $1.95 + olive oil $0.34 + spices $0.40 = **$8.92** for 12 portions = **$0.74 a portion**.

Your turn. AP price/lb _____ Yield _____ EP cost/lb _____
Batch cost _____ ÷ portions _____ = portion cost _____

3. Portions & Food Cost %

Where the money goes.

- **Food cost %** = plate cost ÷ menu price × 100. **Contribution margin (CM)** = price − plate cost.
- **Portion tools** (ladles, scoops, a scale) keep the plate cost the plate cost.
- **An over-portion costs** extra amount × cost per unit × plates per day × days.
- **Food cost for a period** = beginning inventory + purchases − ending inventory.
- **Food cost %** for the period = that ÷ food sales × 100. **Variance** = actual − target, in points and dollars.

> **Worked example (Chapter 3).** The Harvest Bowl's plate cost is $3.27 and it sells for $12.00: food cost $3.27 ÷ $12.00 = **27.3%**, CM **$8.73**. The month: $6,200 + $14,850 − $5,900 = **$15,150** on $52,000 of sales = **29.1%**, against a 28% target (in this example): $15,150 − $14,560 = **$590 over**.

Your turn. Plate cost _____ Price _____ Food cost % _____ CM _____

4. Pricing the Menu

Target food cost, margin and the menu mix.

- **Price for a target food cost %** = plate cost ÷ target (as a decimal).
- **When a cost rises:** new food cost % = new plate cost ÷ price; price to restore the target = new plate cost ÷ target.
- **Menu mix %** = item sold ÷ total sold × 100. **Weighted average CM** = total CM ÷ total sold.
- **Popularity line** (a common rule of thumb, in this example) = 70% × (100% ÷ number of items).
- **The grid** (our names): Star = popular, CM ≥ average · Workhorse = popular, lower CM · Puzzle = less popular, CM ≥ average · Rethink = less popular, lower CM.

> **Worked example (Chapter 4).** The Smoky Chickpea Wrap costs $2.94 to plate; at a 28% target, $2.94 ÷ 0.28 = **$10.50**, CM **$7.56**. Avocados rise to $2.00 each, and the bowl's plate cost becomes $3.47: **28.9%** at $12.00. The price for 28% is $3.47 ÷ 0.28 = $12.39; Joan picks **$12.50**, **27.8%**.

Your turn. Plate cost _____ Target _____ Price _____ Menu price chosen _____

5. Stock & Orders

Pars, cases, waste and turnover.

- **Par** = average daily use × days until the next delivery + safety stock (in this example).
- **Order** = par − on hand (− already on order), **rounded up to whole cases**.
- **Days on hand** = on hand ÷ daily use.
- **Waste %** = waste $ ÷ food purchases $ × 100 (say which base you use).
- **Turnover** = food cost for the period ÷ average inventory. **Days of inventory** = days ÷ turnover.
- Shelve new deliveries behind older stock so the oldest is used first (first in, first out).

> **Worked example (Chapter 5).** Birch Street uses 8 cartons of oat milk a day; the next delivery has to cover 4 days; safety stock 4: par = 8 × 4 + 4 = **36**. On hand 14, so it needs 22; cases of 6 → 22 ÷ 6 = 3.67 → **4 cases = 24 cartons**. Turnover: $15,150 ÷ $6,050 = **2.50** a month, about **12 days** of inventory.

Your turn. Daily use _____ Days _____ Safety _____ Par _____
On hand _____ Need _____ Case size _____ Cases _____

6. Covers & the Daily Report

Turns, average check and the forecast.

- **Average check** = net sales ÷ covers. **Seat turnover** = covers ÷ seats.
- **Sales per seat-hour** = net sales ÷ (seats × hours open).
- **Forecast** = average of the last four same days. **Prep** = forecast covers × the item's share.
- **% of forecast** = actual ÷ forecast × 100. **Needed per hour** = (forecast − so far) ÷ hours left.
- **The check:** tax = subtotal × rate, to the cent; tip on the pre-tax subtotal (in this example); split so the shares add up to the total.

> **Worked example (Chapter 6).** Saturday: 212 covers in 40 seats over 8 hours, net sales $4,452.00. Average check = **$21.00**; turnover = **5.3**; sales per seat-hour = $4,452 ÷ 320 = **$13.91**. The forecast was (188 + 196 + 204 + 212) ÷ 4 = 200 covers and $4,100: actual = **108.6%** of forecast sales.

Your turn. Net sales _____ Covers _____ Average check _____ Turnover _____

7. Tips, Pay & Labor Cost

The pool, the paycheck and the labor line.

- **Tip %** = tip ÷ pre-tax subtotal × 100.
- **Pool by hours** (the employer's policy, in this example): rate = pool ÷ total hours; share = hours × rate.
- **Pay** = hours × rate; minutes ÷ 60 for decimal hours. Federal rule: over 40 hours in a workweek, at least 1.5 × the regular rate. **Effective hourly** = (wages + tips) ÷ hours.
- **Federal tipped-wage facts:** at least $2.13 an hour cash wage, a tip credit of up to $5.12, and the employer makes up any shortfall below $7.25 an hour. Many states set more.
- **Labor %** = labor cost ÷ net sales × 100. **Prime cost %** = (food cost + labor cost) ÷ sales × 100.

> **Worked example (Chapter 7).** Saturday's pool: $702.40 card + $77.60 cash = **$780.00** over 30 hours = **$26.00 an hour**: Eli (8 h) **$208.00**, Ava (7.5 h) **$195.00**, Kai (8 h) **$208.00**, Lena (6.5 h) **$169.00**. Wages for the day: **$834.50** on $4,452.00 of sales = **18.7%** labor.

Your turn. Pool _____ ÷ hours _____ = rate _____ My share _____

Planning Sheet 1: Recipe Scaling Sheet

Factor = new yield ÷ old yield. If the portion size changes too, factor = (new portions × new size) ÷ (old portions × old size). Then turn awkward amounts into friendly units (Ch 1).

Recipe: _____ Old yield: _____ × _____ New yield: _____ × _____ Factor: _____

Ingredient	Old amount	Unit	× factor	New amount, friendly units

Planning Sheet 2: Yield Test Sheet

Weigh it as purchased, trim and prep it, weigh what's usable. Yield % = EP ÷ AP × 100. EP cost per lb = AP price per lb ÷ yield (Ch 2).

Item	AP weight	AP price/lb	EP weight	Yield %	EP cost/lb	Date

To buy for a recipe: AP to buy = EP needed ÷ yield = _____ ÷ _____ = _____, rounded up to _____.

Planning Sheet 3: Recipe Cost Card

Line cost = amount × unit cost, to the cent. Add the lines; divide by portions. Food cost % = portion cost ÷ menu price × 100 (Ch 2 and Ch 3).

Dish: _____ Portions: _____ Portion size: _____

Ingredient	Amount used	Pack price	Unit cost	Line cost	Yield
Batch cost					

From cost to price	Amount	Notes
Portion (plate) cost		
Menu price		
Food cost % (cost ÷ price × 100)		
Contribution margin (price − cost)		
Price for my target (cost ÷ target)		

Planning Sheet 4: Menu-Mix Sheet

Mix % = sold ÷ total sold × 100. CM = price – plate cost. Average CM = total CM ÷ total sold. Popularity line = 70% × (100% ÷ number of items), a rule of thumb (Ch 4).

Item	**Sold**	**Mix %**	**Price**	**Plate cost**	**CM**	**Total CM**	**Grid box**
Totals		100%					

Average CM = _____ ÷ _____ = _____. **Popularity line** = 70% × (100% ÷ _____) = _____%.

Star = popular, CM ≥ average · Workhorse = popular, lower CM · Puzzle = less popular, CM ≥ average · Rethink = less popular, lower CM.

Planning Sheet 5: Par & Order Sheet

Par = daily use × days until the next delivery + safety stock. Order = par − on hand, rounded up to whole cases (Ch 5).

Item	Daily use	Days to cover	Safety stock	Par	On hand	Case size	Cases to order

Days on hand = on hand ÷ daily use. **Waste %** = waste $ ÷ purchases $ × 100. **Turnover** = food cost ÷ average inventory.

Planning Sheet 6: Daily Report

Fill it in at close. Each line is one division (Ch 6).

Number	Mine	How
Net sales (before tax)		Food and drink sales after comps
Covers		Guests served
Average check		Net sales ÷ covers
Seats and hours open		From the floor plan
Seat turnover		Covers ÷ seats
Sales per seat-hour		Net sales ÷ (seats × hours)
Forecast covers		Average of the last four same days
% of forecast		Actual ÷ forecast × 100
Same day last year		Last year's report
Change vs last year		(This − last) ÷ last × 100
Sales tax collected		Net sales × rate
Labor cost		Labor % = labor ÷ net sales × 100

Pace check: needed per hour = (forecast − sales so far) ÷ hours left = _____ ÷ _____ = _____.

Planning Sheet 7: Tip-Pool Sheet

Pool by hours (the employer's policy decides who is in the pool and how it splits): rate = pool ÷ total hours; share = hours × rate. Check that the shares add up to the pool (Ch 7).

Card tips: _____ + **cash tips:** _____ = **pool:** _____ ÷ **total hours:** _____ = **rate:** _____ an hour

Name	Hours	Share	Wage	Wage + share	Per hour all in
Totals					

Effective hourly = (wage + tips) ÷ hours. **Labor %** = labor cost ÷ net sales × 100. **Prime cost %** = (food cost + labor cost) ÷ sales × 100.