



MEDMATHMINDSET PROVIDER MATH ATLAS

Dental Hygiene math, one domain at a time.

A focused, printable reference built from MedMathMindset's current provider-specific quantitative blueprint.

BLUEPRINT SNAPSHOT

11 domains | 100% total instructional weight

Domains are ordered from highest to lowest MedMathMindset instructional weight. These are MedMathMindset training weights, not official credentialing-body exam percentages unless an official source explicitly states otherwise.

USE IT THREE WAYS

Teach | Review | Print

Use the worked examples as a quick class reference, learner review sheet, or printable teaching aid.

WHAT THE ATLAS ADDS

Example + reasoning + check

Each domain pairs one worked example with the setup, answer, and a reasonableness check.

DOMAINS IN THIS ATLAS

1. Dental Math 18%

3. Ratios / Proportions 10%

5. Dilution / Reconstitution 8%

7. Percentages 8%

9. Whole Number Operations 7%

11. Fractions / Decimals 5%

2. Medication Dose Calculations 12%

4. Unit Conversions 10%

6. Dimensional Analysis 8%

8. Weight-Based Dosing 8%

10. Provider Operations Math 6%

IMPORTANT SCOPE NOTE

Educational examples only. This atlas does not replace local protocols, medication references, device instructions, scope-of-practice requirements, official credentialing test plans, or clinical judgment.



DOMAIN 1 OF 11

Dental Math

18%
MMM weight

Dental Math is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

A 2% solution contains 20 mg/mL. How many mg are in 1.8 mL?

SETUP / REASONING

$20 \text{ mg/mL} \times 1.8 \text{ mL} = 36 \text{ mg}$.

ANSWER

36 mg

QUICK CHECK

Convert percentage solution strength to the appropriate concentration before multiplying by volume.

DOMAIN 2 OF 11

Medication Dose Calculations

12%
MMM weight

Medication Dose Calculations is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

Available: 10 mg in 2 mL. The ordered dose is 30 mg. How many mL will deliver the ordered dose?

SETUP / REASONING

$30 \times 2 / 10 = 6 \text{ mL}$.

ANSWER

6 mL

QUICK CHECK

At a fixed concentration, a larger desired dose requires a proportionally larger volume.



DOMAIN 3 OF 11

Ratios / Proportions

10%
MMM weight

Ratios / Proportions is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

A 2:5 relationship is maintained. If the second quantity becomes 20, what is the first quantity?

SETUP / REASONING

$$2/5 = x/20; x = 8.$$

ANSWER**8****QUICK CHECK**

Cross-products should agree when the two ratios are truly equivalent.

DOMAIN 4 OF 11

Unit Conversions

10%
MMM weight

Unit Conversions is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

Convert 750 mg to g.

SETUP / REASONING

Use the 1000:1 metric relationship; the result is 0.75 g.

ANSWER**0.75 g****QUICK CHECK**

Confirm the direction of the conversion and that the final unit is exactly the requested unit.



DOMAIN 5 OF 11

Dilution / Reconstitution

8%
MMM weight

Dilution / Reconstitution is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

After preparation, 500 mg is contained in 10 mL. How many mL contain 100 mg?

SETUP / REASONING

$$100 \times 10 / 500 = 2 \text{ mL}$$

ANSWER**2 mL****QUICK CHECK**

Convert to a usable concentration first, then solve for the amount needed.

DOMAIN 6 OF 11

Dimensional Analysis

8%
MMM weight

Dimensional Analysis is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

Available: 10 mg in 2 mL. The ordered dose is 30 mg. How many mL will deliver the ordered dose?

SETUP / REASONING

$$? \text{ mL} = \frac{2 \text{ mL}}{10 \text{ mg}} \times \frac{30 \text{ mg}}{1} = 6 \text{ mL}$$

ANSWER**6 mL****QUICK CHECK**

Unwanted units should cancel cleanly, leaving only the requested final unit.



DOMAIN 7 OF 11

Percentages

8%

MMM weight

Percentages is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

What is 25% of 80?

SETUP / REASONING

$25\% \times 80 = 20.$

ANSWER

20

QUICK CHECK

The result should be the stated fraction of the whole; compare its magnitude with 0% and 100%.

DOMAIN 8 OF 11

Weight-Based Dosing

8%

MMM weight

Weight-Based Dosing is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

A 70 kg patient is ordered 0.1 mg/kg. What dose is ordered?

SETUP / REASONING

$70 \times 0.1 = 7 \text{ mg}.$

ANSWER

7 mg

QUICK CHECK

Check that the weight unit matches the dose unit before multiplying.



DOMAIN 9 OF 11

Whole Number Operations

7%
MMM weight

Whole Number Operations is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

A supply area starts with 24 counted items, adds 18, then uses 11. How many remain?

SETUP / REASONING

$$24 + 18 - 11 = 31.$$

ANSWER**31 items****QUICK CHECK**

Reconcile the starting quantity, additions, and use; the ending count should fit the story.

DOMAIN 10 OF 11

Provider Operations Math

6%
MMM weight

Provider Operations Math is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

A device has 600 usable units and consumes 10 units each minute. Ignoring reserve, how many minutes will it run?

SETUP / REASONING

$$600 / 10 = 60 \text{ minutes.}$$

ANSWER**60 min****QUICK CHECK**

A quantity divided by a consumption rate should produce a time or capacity that fits the operating context.



DOMAIN 11 OF 11

Fractions / Decimals

5%
MMM weight

Fractions / Decimals is included because it matches expected quantitative work for this provider level. Dental-hygiene scope emphasizes local anesthetic/safe-dose math, solution strength, dental measurements, and operator readiness-not IV/critical-care domains.

EXAMPLE

Write $3/4$ as a decimal.

SETUP / REASONING

$3 / 4 = 0.75$.

ANSWER

0.75

QUICK CHECK

For a proper fraction, the decimal should fall between 0 and 1.

REFRESH PRINTED COPIES PERIODICALLY

Provider scope and MedMathMindset instructional weighting may change as the canonical provider-domain layer is updated.