



Math for Health Careers

Health Science Event

Eligible Divisions: Middle School	Round 1: Online 35 Q test in 60 minutes
Solo Event: 1 competitor	SLC: Middle School test only events are administered during the testing window.

**This event will take place during the SLC Online Testing Window:
February 25-March 4 (8am-6pm)**

- ✓ Chapter advisors will coordinate testing time and location for the online testing session.
- ✓ Chapter advisor must designate a proctor for the testing session that does not have content knowledge related to any HOSA event ensuring the integrity of the competitive events program.

Event Summary

Math for Health Careers allows Middle School Division HOSA members to improve their ability to identify, solve, and apply mathematical principles used in health careers. This competitive event consists of a written test. In the event of a tie, the tie-breaker questions will be judged to break the tie. This event aims to inspire members to be proactive future health professionals and measure knowledge and understanding at the recall, application, and analysis levels.

Dress Code

The Chapter Advisor will determine the dress code requirement for all SLC online testing events.

Competitors Must Provide

1. Laptop with internet access to the HOSA Online Testing System: <https://testing.hosa.org/>
Note: Competitors will receive an email with testing instructions at the address the chapter advisor entered in the HOSA system. **Competitors and advisors are responsible for making sure the email address entered is not blocked by school filters.**
2. Basic Handheld calculators (no graphing calculators) for addition, subtraction, division, multiplication, and square root calculations.
3. Reference Materials Summary (page 3) may be used during the online test.

General Rules

1. Competitors must be familiar with and adhere to the [General Rules and Regulations](#).

Official References

1. The references below are used in the development of the test questions.
 - a. [Kenamer, Michael. Math for Health Care Professionals. Cengage, Latest edition.](#)
 - b. [Simmers, L., Simmers-Nartker, K, Simmers-Kobelak, S., Morris, L. DHO: Health Science. Cengage Learning. Latest edition.](#)

Written Test

1. The written test will consist of 35 fill-in-the-blank questions in a maximum of 60 minutes.
2. All online tests must be taken during the SLC online testing window **in a proctored setting**.
3. A series of five (5) complex, multi-step tiebreaker questions will be administered with the original test.

The expectation is that competitors read and are aware of all content within these guidelines and associated links. Successful competitors will study all links for detailed information.

Test Plan

The test plan for the Math Health Career Test is:

- Math essentials (add, subtract, multiply, divide, fractions, decimals) - 15%
 - Measurement Systems & Conversions - 25%
 - Calculations - 30%
 - Formulas & equations
 - Ratios & proportions
 - Percentages
 - Interpreting Medical Information & Data - 30%
 - Charts, tables & graphs
 - Basic statistics (mean, median, mode)
4. **ROUNDING:** Converting between measurement systems will often render a different answer depending on which systems and conversions are used. The answer to a calculation problem will be the same after appropriate rounding. When determining a solution, round only the final answer after completing all calculation steps.

When rounding decimal numbers to the nearest tenths, hundredths, or thousandths place, look to the immediate right of the digit located in the position to be rounded. If the number to the direct right is 5 or larger, round up one number and drop everything that follows. If the number to the direct right is 4 or smaller, leave the position being rounded as is and drop everything that follows.

In specific situations, answers will be rounded per medical protocol. For example, pediatric dosage is always rounded DOWN to avoid potential overdose. Unless otherwise indicated, all answers should be rounded to the nearest whole number. (Examples: 31.249 (rounded down) = 31 and 23.75 (rounded up) = 24).

5. **USE OF ZERO:** Decimal expressions of less than 1 should be preceded by a zero – “leading zero.” A whole number should never be followed by a decimal point and a zero – “trailing zero.”

6. **Sample Test Questions:**

1. Calculate the following: $[(2 \times 5)^2 + 12] \div 2 = \underline{\hspace{2cm}}$. Kennamer pp 182

Solution: $2 \times 5 = 10$

$$10^2 = 100$$

$$100 + 12 = 112$$

$$112 \div 2 = 56$$

2. A surgeon made an incision 15 cm long. How long is the incision in inches? Simmers pp 371

Solution: $15 \text{ cm} \times 1''/2.54 \text{ cm} = 5.9055118 \text{ inches}$ Rounded = 6 inches

3. The outdoor temperature reads 60° on a Fahrenheit thermometer. What will this temperature register on a Celsius thermometer? (Round to the nearest tenth.)
Simmers pp 373

Solution: $^{\circ}\text{C} = (60 \text{ }^{\circ}\text{F} - 32) 5/9 = 28 \times 5/9 = 15.55 \text{ }^{\circ}\text{C}$ Rounded = 15.6 °C

Final Scoring

7. In the event of a tie, successive tiebreaker questions will be judged until a winner is determined. Correct spelling is required for an item to be considered correct in the tiebreaker.

International Leadership Conference (ILC) qualifiers

Go to <https://hosa.org/guidelines/> for specifics about competing in this event at ILC.

June 17-20, 2026 – Indianapolis Convention Center, Indianapolis, IN

Math for Health Careers Reference Materials Summary

METRIC EQUIVALENTS

Length	Temperature
1 meter (m) = 100 centimeters (cm) = 1000 millimeters (mm) 1 centimeters (cm) = 10 millimeters (mm)	$^{\circ}\text{C (Degrees Celsius)} = (^{\circ}\text{F} - 32) \frac{5}{9}$ $^{\circ}\text{F (Degrees Fahrenheit)} = (^{\circ}\text{C}) \frac{9}{5} + 32$
Weight	Weight Conversion
1 kilogram (kg) = 1000 grams (g)	1 kilogram (kg) = 2.2 pounds (lb)
1 gram (g) = 1000 milligrams (mg)	1 pound (lb) = 16 ounces (oz)
1 milligram (mg) = 1000 micrograms (mcg)	
Volume for Solids	Volume for Fluids
1000 cubic decimeters (dm) = 1 cubic meter (m³)	1 liter (L) = 1000 milliliters (mL)
1000 cubic centimeters (cm³) = 1 cubic decimeter (dm³)	10 centiliters (cL) = 1 deciliter (dL)
1000 cubic millimeters (mm³) = 1 cubic centimeter (cm³ or cc)	10 deciliters (dL) = 1 liter (L)
	1 cubic centimeter (cm³ or cc) = 1 milliliter (mL)

APPROXIMATE EQUIVALENTS AMONG SYSTEMS

Metric	Household/English
240 milliliters (mL)	1 cup = 8 ounces (oz) = 16 tablespoons (tbsp)
30 milliliters (mL)	1 ounce (oz) = 2 tablespoons (tbsp) = 6 teaspoons (tsp)
15 milliliters (mL)	1 tablespoon (tbsp) = 3 teaspoons (tsp)
5 milliliters (mL)	1 teaspoon (tsp)
1 milliliter (mL)	15 drops (gtts)
0.0667 milliliters (mL)	1 drop (gtt)
1 meter (m)	39.4 inches (in)
2.54 centimeters (cm)	1 inch (in)
	1 foot (ft) = 12 inches (in)

NOTE: Middle School competitors will be provided with a copy of this reference during testing.