**Scope of the Contest**
To evaluate the students’ ability to understand and solve mathematical problems commonly used in the various health care settings.

**Knowledge Performance**
The contest will include a **Resume, and Exam**, See NYS SkillsUSA Virtual Technical Standards for competencies measured. You will be given a link to send your resume to by April 1, 2021.

**Written Exam**
Contestants will be provided a link to the Medical Math exam to completed virtually. Contestants will log into a scheduled Zoom session and will take the test while being proctored via Zoom. Contestants have 60 minutes to complete their exam and each student must take the exam independently.

**Contest number must be visible at all times.**

**Scoring Information**
1. Resume :
2. Written Medical Math Exam to be completed virtual, proctored via Zoom.

**Zoom Interview/Role Play**
You will receive a specified date/time to participate in a virtual interview/role play via Zoom with industry professionals. You should be dressed in your SkillsUSA attire for this session.
NYS Medical Math (Virtual)

Purpose
To evaluate the students’ ability to understand and solve mathematical problems commonly used in the various health care settings.

Eligibility
Open to active SkillsUSA members enrolled in a health care science technology program.

Clothing Requirements
Class B: Healthcare Attire
- Official blue scrubs.
- Scrubs should fit appropriately for all health contests and should be properly hemmed and wrinkle free. Only plain, white, collarless T-shirts may be worn underneath the scrubs. Hair must be pinned up and off the collar.
- White socks or skin-tone seamless hose.
- Health-professionals white or black leather work shoes.
- Shoes must be all-white or black leather (no canvas), completely enclosed (no open-toe or open-heel). Athletic-style shoes that meet the criteria are acceptable.
- No identification of the contestant, school or state is allowed on clothing.
- No offensive, vulgar or inappropriate images or text are allowed on contestants’ clothing.
- No shorts or sleeveless shirts are allowed.
- Proper Personal Protective Equipment (PPE) must be worn by contestant to meet all state, local and school requirements due to COVID-19.
- Scoring deductions may only be given and/or disqualification of contestant if clothing safety standards are not met.

Equipment and Materials
1. Supplied by the technical committee:
   a. Test will be given electronically via proctor etc.
2. Supplied by the contestant:
   a. Computer with high-speed internet capability and camera to use applications such as Zoom, Teams, etc. The minimum recommended internet bandwidth speeds for joining Zoom meetings, accessing on-demand curriculum and other online operations is 2.0 Mbps up and down. You can test your current internet speeds by following this link: https://www.speedtest.net/. Allow the page to load and click on GO.
   b. A secondary camera(s) may be required to provide judges with the ability to view contestants from different angles. Additional camera requirements will be located on the NYS SkillsUSA website.
   c. The contestants’ instructor or advisor shall be on site to observe all competition activities to ensure a safe and healthy competition experience for all participants. That instructor or advisor will not be allowed to interact or interfere with the competitor unless a safety issue arises that requires interaction. Any other support or interaction between the contestant and the instructor/advisor will result in disqualification.
   d. All competitors must create a one-page résumé and submit an electronic copy to the technical committee chair Website will be provided by April 1, 2021.
   e. Basic hand-held calculator (no graphing or
Scientific calculators [with fraction keys] will be permitted.

**SCOPE OF CONTEST**

1. The test questions will be taken from problems encountered in the medical field and are selected from the area that might be used in real world applications. There will be additional questions related to professional development.

   Contestants will demonstrate their ability to solve math problems that deal with the following areas:
   a. Measurements including vital signs, temperature conversions, and height and weight
   b. Metric and household measurements
   c. Conversions
   d. Ratio and proportion
   e. Percentage
   f. Intake and output
   g. Roman numerals
   h. Dosage calculations

2. The test will comprise 100 or more problems that will allow contestants the opportunity to use their problem-solving skills as well as their mathematical ability.

3. The contestants will have two and a half hours to complete the test. No bonus points will be given for early completion of the test, and no contestant will be allowed to go in or out of the testing site during the testing.

   All of the items listed on this page are suggested references. The test items are not limited to this material. This is just a basic reference of things that may be required knowledge for the contest.

   Suggested references: 'Standardized Medical Abbreviations'

**Note:** No watches/smart watches/cellphones or other timing devices are permitted in the contest area.

**Note:** No reference materials may be brought into the contest area.
**MEDICAL ABBREVIATIONS**

The following list is to be used as a reference prior to the competition, but it is not allowed in the contest area.

This list of terms and abbreviations is a sample of abbreviations taken from Diversified Health Occupations (Simmers, Louise). Please use that reference for other abbreviations related to medical math that could be used in the contest.

<table>
<thead>
<tr>
<th>Term</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>millimeter</td>
<td>mm</td>
</tr>
<tr>
<td>centimeter</td>
<td>cm</td>
</tr>
<tr>
<td>meter</td>
<td>m</td>
</tr>
<tr>
<td>foot/feet</td>
<td>ft</td>
</tr>
<tr>
<td>inch</td>
<td>in</td>
</tr>
<tr>
<td>gram</td>
<td>G</td>
</tr>
<tr>
<td>milligram</td>
<td>mg</td>
</tr>
<tr>
<td>microgram</td>
<td>mcg</td>
</tr>
<tr>
<td>kilogram</td>
<td>kg</td>
</tr>
<tr>
<td>pound</td>
<td>lb</td>
</tr>
<tr>
<td>ounce</td>
<td>oz</td>
</tr>
<tr>
<td>degrees Fahrenheit</td>
<td>°F</td>
</tr>
<tr>
<td>°C</td>
<td>°C</td>
</tr>
</tbody>
</table>

**Conversion Chart**

(To be used as reference prior to the competition but not allowed in the contest area.)

**Length**

1 meter = 100 centimeters = 1,000 millimeters
10 millimeters = 1 centimeter

**Weight**

1 gram = 1,000 milligrams
1 milligram = 1,000 micrograms
1 kilogram = 1,000 grams
1 grain = 60 milligrams

**Volume for Solids**

1,000 cubic millimeters = 1 cubic centimeter
1,000 cubic centimeters = 1 cubic decimeter
1,000 cubic decimeters = 1 cubic meter

**Volume for Fluids**

1 liter = 1,000 milliliters
1 milliliter = 1 cubic centimeter
10 centiliters = 1 deciliter
10 deciliters = 1 liter

**Weight Conversion**

1 kilogram = 2.2 pounds
1 pound = 16 ounces
1 ounce = 0.028 kilograms

**Temperature Conversion**

°C = (°F-32) 5/9 or 0.5556
°F = (°C) 9/5 or 1.8 + 32

**Metric/Household Equivalents**

(Note: 1 cc = 1 mL)

1 cc or 1 mL  = 15 gtts (drops)
0.914 meters = 3 feet (1 yard)
0.3048 meters = 12 inches (1 foot)
2.54 centimeters = 1 inch
5 mL or cc = 1 tsp (teaspoon)
15 mL or cc = 1 tbsp (tablespoon)
30 mL or cc = 1 oz. (ounce)
240 mL or cc = 1 cup (8 oz.)
480 mL or cc = 1 pt (pint) (16 ounces)
960 mL or cc = 1 qt (quart) (32 ounces)
1 meter = 39.37 inches (3.281 feet)
The SkillsUSA Framework is used to pinpoint the Essential Elements found in Personal Skills, Workplace Skills and Technical Skills Grounded in Academics. Students will be expected to display or explain how they used some of these Essential Elements. Please reference the graphic above, as you may be scored on specific elements applied to your project. For more, visit: http://www.skillsusa.org/about/skillsusa-framework/.