

Microbe Mission B/C

National SO Resources:

<https://www.soinc.org/microbe-mission-c>

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Event Objective: A team of up to two students will identify various microbes, diseases caused by specific microbes, characteristics of various microbes, analyze data, demonstrate knowledge of specific instruments like microscopes, perform measurements and calculations, and solve problems pertaining to microbes presented by the event supervisor.

Equipment Needs:

- A copy of the test and an answer sheet for each competing team.
- A stopwatch or other timing device.
- Sufficient numbers of laboratory devices, slides, and other supplies to satisfy the number of teams or stations being used.

Number of Volunteers Needed:

Microbe Mission *may* be run with one supervisor, but it is preferable to have *at least two* volunteers to help with timing and supervision of the lab/skills portion and the test portion of the event. Having at least two volunteers will allow one or two volunteers to be scoring while subsequent sessions of Microbe Mission are being run.

Prior to the Event:

- Proofread the questions and make any corrections/adjustments necessary.
- Print enough copies of the test for each team or copies of each station.
- If using stations, it is helpful to place questions in sheet protectors to prevent students from marking or spilling any lab materials on them.
- Photographs of microbes should be printed in high definition and color should be used on the original tests or at lab stations.
- Print separate answer sheets, if you are using these.
- Make a key to make scoring of the event easier, especially if you have helpers.
- Check out each individual microscope to be used. Make sure optics are clean and that light sources are functional.
- Prepare any laboratory solutions you may be using.
- Gather and check prepared slides you may be using.
- If using stations, number each station with a placard to prevent any confusion by students.
- Be sure stations are equipped with all necessary items.
- It is a good idea to have extra microscopes or materials available in case of a spill or other mishap. This can prevent loss of time for teams and can help keep all teams on a fair playing field.
- Other considerations....

- Microbe Mission is intended to be a lab based event. However, very few live specimens are allowed.
- Be sure to check the current rules.
- Analysis of real data sets, interpretation of graphs, calculations, and the ability to relate specific microbes to various industrial/commercial uses should be tested. Look for challenging datasets and graphs in public sources.
- If using printed photos of various microbes, make sure the original tests and photos at stations are printed in color.

Scoring of Individual Teams:

- Score answer sheets using your key. Assign points per question prior to event day!
- If you have any short answer/free response questions, it is best to have one person evaluate every response to allow for consistency. If this is not possible, clearly identify those points you are expecting and make it clear to other evaluators on the key.
- Highest score wins in this event.
- If there are any ties, *each tie must be broken using the pre-identified questions* on your test. If two teams tie at a score of 82 and team A answers the tiebreaker correctly, but team B does not, team A would be scored as 82.1 and team B would receive a score of 82. If three teams tie at 82, the one with the highest tiebreaker score would receive an 82.2, the next highest tiebreaker scoring team would receive a score of 82.1, and the third team would receive a score of 82.
- Teams that significantly disrupt the event or fail to follow directions by the event supervisor may be penalized or ranked below other teams. If this occurs, consult with the tournament director.

Day of the Competition:

- Set up the room or stations to accommodate your event. If the room was previously set up, double check to be sure all electrical outlets, microscopes, etc. are functional.
- If stations are set up, be sure that the test questions are covered or flipped over so as not to be visible to students entering the room.
- Check timepieces to be sure they are functioning.
- Gather students outside the room. Give general instructions about not starting or looking at any questions until further directions are given. This is a good time to remind all the eye protection is required.
- Direct students to their places. Pass out the test/answer sheet. Make sure that teams write their team name and number on the test/answer sheet. If using stations, remind students it is their responsibility to place answers in the correct location on the answer sheet. If calculations are required, remind students that they must show their work to receive credit.
- Tell students how much time they will have for the test or for each station. Be consistent in enforcing the time limits. No team should get an advantage. Those who refuse to stop or move to the next station when directed may be penalized.
- Gather student answer sheets.

- Recheck all stations to be sure none of the tests/station questions have been removed or defaced. Reset microscopes, slides, or other equipment as needed prior to the next session.
- Score student responses as time permits.
- Make notes for yourself of any unusual or questionable events.

Scoring at End of Day:

- Write each team's score on the scorecard provided by the tournament director. The high score wins.
- If tie-breakers are needed, add a 0.1 to the score of the team that won the tie-breaker.
- The scored team answer sheets and event scorecard should be taken to the central scoring room to complete scoring.