

# Microbe Mission (B and C) 2018 Texas State Coaches Clinic

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*Exploring the World of Science*

## Cellular Biology Events Cycle

2017-18: Microbe Mission B/C

2019-20: Designer Genes C and Heredity B

2021-22: Cell Biology C and Bio Process Lab B

2023-24: Microbe Mission B/C

## Rules Details

- Must bring goggles (eye protection C)
- Single page of notes not in sheet protector with no annotations affixed
- 2 non-programmable, non-graphing calculators
- Event should contain lab activities (collecting data, making measurements, using microscopes etc.)
- Event may be run as stations

## New Topics for 2018

- Names for and recognition of bacterial shapes is now a B/C topic
- Measuring bacterial growth
- Isolation of bacteria by streaking and serial dilution (C only)
- Some cosmetic changes to the rules

## Disease List Additions for 2018

- Viruses: norovirus and zika virus
- Bacteria: no changes
- Fungi: White nose syndrome
- Protozoans: Naegleria
- Prions: chronic wasting disease

\*\*Note there are no restrictions on which non-pathogenic microbes may be topics of questions\*\*

## Resources to prepare for exam topics

**Science Olympiad National Organization:** <https://www.soinc.org/microbe-mission-c>

- The national life sciences committee prepares excellent resources for all biology events

**Student Wiki\*:** [https://scioly.org/wiki/index.php/Microbe\\_Mission](https://scioly.org/wiki/index.php/Microbe_Mission)

- Not a perfect resource, but a good place to start
- Student forum for asking/answering questions

### **Links for exams:**

National test exchange: [https://scioly.org/wiki/index.php/2018\\_Test\\_Exchange#Microbe\\_Mission](https://scioly.org/wiki/index.php/2018_Test_Exchange#Microbe_Mission)

UT-Austin tournaments exams: [www.atxscioly.com](http://www.atxscioly.com)

- Use old exams for formative assessments of your students
- Having them write their own exams is a great way to learn the material

**Textbook options:** Campbell Biology (Pearson), Microbe (ASM), Microbiology: an Introduction (Pearson)

### **Additional helpful resource links:**

Bacterial cell shapes graphic: [https://en.wikipedia.org/wiki/Bacterial\\_cellular\\_morphologies#/media/File:Bacterial\\_morphology\\_diagram.svg](https://en.wikipedia.org/wiki/Bacterial_cellular_morphologies#/media/File:Bacterial_morphology_diagram.svg)

Measuring bacterial growth: <https://www.wikihow.com/Measure-Bacterial-Growth>

Streaking for isolation video: <https://www.youtube.com/watch?v=NDMNGnxCZ1Q>

Serial dilutions and plate counts video: <https://www.youtube.com/watch?v=loyeVy1D-3o>

Austin Community College Microbiology course notes: <http://www.austincc.edu/rohde/noteref.htm>