

Sweet 16 Cell Biology Tournament



With spring just around the corner, your students' attention will soon be turning to spring break, sunshine, and the NCAA basketball tournament. This activity combines the popularity of the March Madness basketball pool with a review of cell biology, including the names and locations of organelles and other unique cell features, their relative size, and how they were isolated. The result is the Sweet 16 Cell Biology Tournament. Hopefully, your students will enjoy playing the "Tournament" while reviewing these important concepts.

The rules for filling out the tournament bracket are simple. For the first round, identify whether the cell feature is found inside or outside the cell—the internal cell component wins and proceeds to the second round. In the second round, compare the relative sizes of the cell components and their visualization using microscopy. The winner in this round is the component that is not visible with 400X magnification. Semifinal competition (the third round) involves isolation of the cell components—the component that was discovered using analytical cell fractionation advance to the finals. Finally, the cell component that is able to self-replicate wins the last round to become the overall winner of the Sweet 16 Cell Biology Tournament!

Review of Cell Biology Concepts

Review the appearance, structure, and function of each of the following cell features.

Cell wall	Cell membrane
Flagella	Cilia
Nucleus	Plasmodesmata (also called plasmodermata)
Lysosome	Vacuole
Glycocalyx	Trichocyst
Middle lamella	Peroxisome
Endoplasmic reticulum	Golgi apparatus
Plastid	Mitochondria

NGSS Alignment

This laboratory activity relates to the following Next Generation Science Standards (2013):

Disciplinary Core Ideas: Middle School

MS-LS1 From Molecules to Organisms: Structures and Processes

LS1.A: Structure and Function

Disciplinary Core Ideas: High School

HS-LS1 From Molecules to Organisms: Structures and Processes

LS1.A: Structure and Function

Science and Engineering Practices

Analyzing and interpreting data

Constructing explanations and designing solutions

Crosscutting Concepts

Structure and function

Systems and system models

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