

Before Biology Video Series

The Amoeba Sisters

Found at <https://www.youtube.com/playlist?list=PLwL0Myd7Dk1HxSDd1IczdBdH8orrrDhB1>

Imagine that yesterday you taught a great lesson on genetics. The students were engaged and you know there was some learning that took place. When the students walk in the door today, you want to continue that learning high, so you need to find some way to pull them back in. Well, the Amoeba Sisters have such a tool that can help.

The Amoeba Sisters are real sisters (but not real amoebas) who have developed a series of educational videos and other products that focus on high school biology learning. One sister, who is a former high school biology teacher, develops the content, while the other sister does the animations. Their video series, called **Before the Bell Biology**, is a collection of short formative quizzes that review some of the major biological topics. There are currently 15 videos in the series. Some of these include: enzymes, biomolecules, cell membranes and transport, cell organelles and structures, photosynthesis, and plant structure and diversity.

The questions of each quiz appear on the screen with a 30-second timer, so students need to answer them before the screen changes to the next item. Most of

the questions are multiple choice and true/false, and, even though they are not higher-order thinking items, they do review vocabulary and the main concepts of the topics. The answers and rationales for each question are given right after the timer expires, so students can check their work right away. There are bookmarks along the progress bars of the videos that allow the user to move easily from question to question without having to wait for them to advance automatically. This feature can help save time and lets teachers select only those items they want their students to answer. The music that plays during each quiz can also be turned off if students find it distracting. There is a downloadable answer page from the Amoeba Sisters' website that can be printed and used to record student responses.

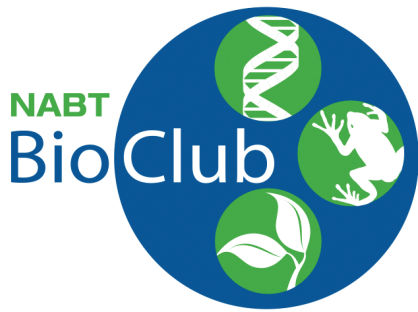
The content of the quizzes focuses on the main ideas students should remember. For example, the genetics quiz asks students to remember terms such as *allele* and *gene*, as well as genotypes and runs them through some genetics problems. The cell organelles and structures quiz asks questions about functions of several organelles and also about the differences between prokaryotic and eukaryotic cells. As mentioned, the questions are mostly recall and do not require a lot of in-depth

knowledge, but are great for reinforcing general concepts and terms students need to know.

Each of the videos in the series runs just under 10 minutes. In a 45-minute class period, this is a lot of time to use. Teachers should consider whether use of **Before the Bell Biology** might be better at the end of class instead of the beginning. Or, another idea might be to intersperse the questions through the lesson to check for understanding. Teachers could also assign the videos as homework, asking students to quiz themselves as review before a test.

However teachers choose to use **Before the Bell Biology**, they will have an engaging activity that will help enhance student learning. While the animations and illustrations are somewhat elementary in their appearance, the content is definitely geared toward high school students and does a good job of presenting the material on grade level. There are vocabulary terms and concepts that need to be explained to ensure they are being understood, but students should have no problem navigating their way through the videos.

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Abington Heights High School, Clarks Summit, PA
Aiken County Career and Technology Center,
Warrenville, SC
Arcadia High School, Phoenix, AZ
Archbishop Curley High School, Baltimore, MD
Arroyo High School, San Lorenzo, CA
Athens High School, Troy, MI
Athens High School, Athens, IL
The Barstow School, Kansas City, MO
Bethlehem High School, Bardstown, KY
Bishop Garcia Diego High School, Santa Barbara, CA
Bloomington High School South, Bloomington, IN
Brentwood Academy, Brentwood, TN
Cabarrus Kannapolis Early College High School,
Concord, NC
Canadian Valley Technical Center, OK
Caney Valley High School, Ramona, OK
Cardinal Gibbons High School, Raleigh, NC
Carrboro High School, Carrboro, NC
Castle Park High School, Chula Vista, CA
Cedarcrest High School, Duvall, WA
Central Carolina Technical College, Sumter, SC
Central Falls High School, Central Falls, RI
Central Magnet School, Murfreesboro, TN
Chelan High School, Chelan, WA
Chester High School, Chester, PA
Clayton High School, Clayton, MO
Colonia High School, Colonia, NJ
Coronado High School, Colorado Springs, CO
Cuyohoga Community College, Macedonia, OH
Darnell-Cookman School of the Medical Arts,
Jacksonville, FL
DeVry Advantage Academy, Chicago, IL
Divine Savior Holy Angels High School,
Milwaukee, WI
Dora R-III School, Dora, MO
Dougherty Valley High School, San Ramon, CA
El Centro College, Dallas, TX
Emergence Academy, Springfield, MA

Emmett High School, Emmett, ID
Fairhaven High School, Fairhaven, MA
Florence Freshman Center, Florence, AL
Florida SouthWestern State College, Naples, FL
Freedom High School, Freedom, WI
Frontier Regional School, S Deerfield, MA
Georgia State University Perimeter College,
Decatur, GA
Gillette College, Gillette, WY
Grandville High School, Grandville, MI
Greater Lowell Technical High School,
Tyngsborough, MA
Greater New Bedford Regional Vocational
Technical High School, New Bedford, MA
Greensburg Salem High School, Greensburg, PA
Hampton Roads Academy, Newport News, VA
Harmony School in Innovation, Katy, TX
Hillsboro High School, Hillsboro, OR
Hilltop High School, Chula Vista, CA
Holt High School, Holt, MI
Julia R Masterman School, Philadelphia, PA
Kenmore West High School, Buffalo, NY
Kent County High School, Worton, MD
Kettle Run High School, Nokesville, VA
Lake Metroparks, Concord, OH
Laurence Manning Academy, Manning, SC
Lexington High School, Mansfield, OH
Louisiana School for Math, Science and the Arts,
Natchitoches, LA
Martin Luther College, New Ulm, MN
Mary Persons High School, Forsyth, GA
Marysville High School, Marysville, KS
McDowell Intermediate High School, Erie, PA
Metropolitan Community College, Omaha, NE
Midland Park High School, Midland Park, NJ
Mid Michigan College, Harrison, MI
Minnetonka High School, Minnetonka, MN
Morganton, NC West Mifflin Area High School,
West Mifflin, PA
Moscow High School, Moscow, ID
Mount Abraham Union High School, Bristol, VT
Nassau Community College, Garden City, NY
Northampton Area High School, Northampton, PA
Northwest Mississippi Community College, Oxford, MS
Olivet Nazarene University, Bourbonnais, IL
Oologah High School, Oologah, OK

Palm Tree School, Fairfax, VA
Perkins High School, Sandusky, OH
Pike High School Freshman Center,
Indianapolis, IN
Pikeview High School, Princeton, WV
Pinecrest High School, Southern Pines, NC
Putnam City High School, Oklahoma City, OK
Riverside City College, Riverside, CA
Riverside High School, Leesburg, VA
Saint Ignatius High School, Cleveland, OH
Seabury Hall, Makawao, HI
Seneca East High School, Attica, OH
Sherando High School, Winchester, VA
Sibley East Middle and High School,
Arlington, MN
Skyline High School, Sammamish, WA
Snow College, Ephraim, UT
Southeast Community College, Lincoln, NE
South Central Jr Sr High School, Elizabeth, IN
South Garner High School, Garner, NC
Southern Wells High School, Poneto, IN
St. Andrew's Episcopal School, Potomac, MD
St. Clair High School, St. Clair, MI
State Library of PA, Lykens, PA
Stillwater High School, Stillwater, OK
Stouffville District Secondary School,
Whitchurch-Stouffville, ON, Canada
The Summit County Day School, Cincinnati, OH
Sunlake High School, Land O'Lakes, FL
Taylor University, Upland, IN
Tiffin Columbian High School, Tiffin, OH
Troy High School, Troy, MI
Unionville High School, Kennett Square, PA
University Christian High School, Hickory, NC
Ursuline Academy, Dedham, MA
Vincennes University, Vincennes, IN
Visitation Academy - Saint Louis, St. Louis, MO
Walters State Community College, Rutledge, TN
Westdale Secondary School, Hamilton, Ontario
Western Piedmont Community College,
Morganton, NC
West Mifflin Area High School, West Mifflin, PA
Wheeling Park High School, Wheeling, WV
Worthington Christian High School,
Worthington, OH