

Model Ecosystem

Students in 6th grade build a self-sustaining terrarium/ aquarium using seeds and snails. Students document changes to the ecosystem over a 4 week period. This activity models the interrelationship between biotic and abiotic factors in ecosystems.

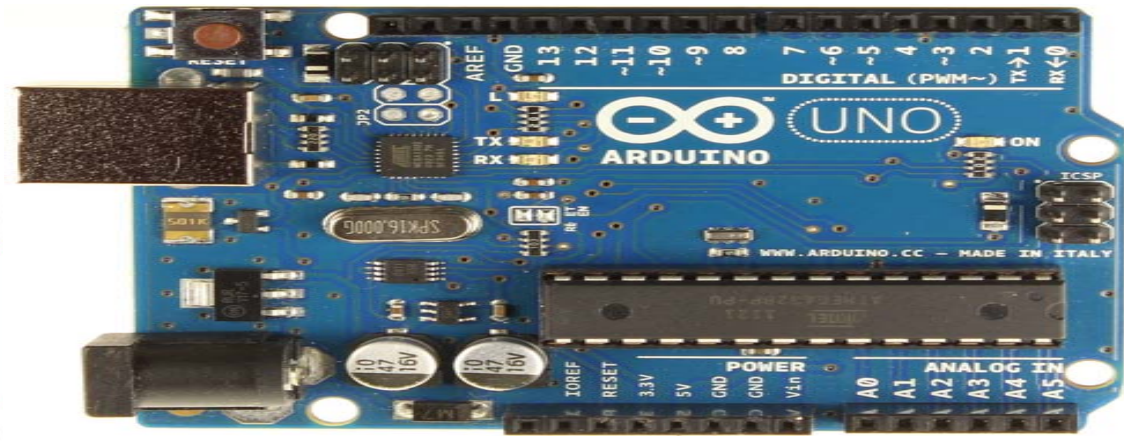
These design challenges, connected to the NJCCCS and NGSS, are available for your classes. Please contact your building's STEM Specialist.



# Step into

Bringing engineering into the classroom through an integrative, real-world approach to learning science and mathematics.

# STEM



3D Designs

Students in 6th grade math classes are introduced to 3D printer basic designing with primitive shapes in Tinkercad. Tinkercad is open-source free software that can be used to design various objects in 3D. Students are encouraged to freely design various objects (i.e., iPhone stands, key chains) and the class selects the design to be printed in a competition format using Google forms.



### Middle School STEM Specialists

Bayshore  
JoAnn Layton  
x2610

Thompson  
Jeanette VanFechtman  
x8776

Thorne  
Kristen Parry  
x7785

## Summer Camps in STEM

Various locations all around Middletown, NJ offer STEM summer camps, so check out some of the links listed below. Some are right here in our own backyard!...The Middletown township School District is offering a STEM-based summer enrichment class for grades 6-8.

<http://www.middletownk12.org/cms/lib07/NJ01912805/Centricity/Domain/2235/Summer%20Enrichment%20Program%202016.pdf>

Middletown Arts Center  
<http://www.middletownarts.org/camp>

Science Explorers  
<https://scienceexplorers.com/stem-camps/>

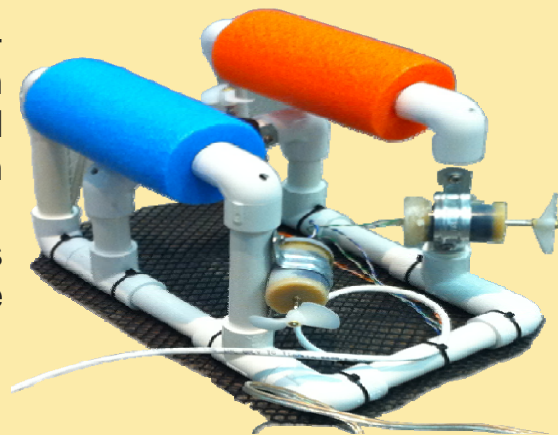
Brookdale College  
<http://www.brookdalecc.edu/documents/continuinged/2016-summer-camp-web.pdf>

### Middle School Students Compete at Rowan University

On Saturday, April 16th, nine middle school teams from Bayshore, Thompson and Thorne competed in the Sea Perch underwater competition held at Rowan University. There were 21 teams from NJ that participated in the event.

The first part of the competition included students navigating through an underwater obstacle course as quickly as possible. In the Orb Challenge round, they had to collect a variety of balls released from an underwater device and place them into a bucket. Students submitted a design notebook on their experience and prepared a poster presentation for the judges.

Bayshore Middle School's A.I. Dolphins placed 3rd in the poster presentation! Way to go, Dolphins!



### COMING SOON TO OUR MIDDLE SCHOOLS: Arduino Boards

Arduino boards are popular open-source electronic boards that are capable of controlling just about any DIY hardware project. In other words, you can use the Arduino to read sensors and control things like motors and lights. This allows you to upload programs to this board which can then interact with things in the real world. With this, you can make devices which respond and react to the world at large. The possibilities of the Arduino are almost limitless but some examples include LED clothing, talking clocks, Bluetooth cars, and robotic hands. Information from [www.arduino.cc/](http://www.arduino.cc/) and [www.instructables.com](http://www.instructables.com).



Science Learning Through Engineering Design  
<https://stemedhub.org/>  
Challenges include designing a sun shade for a picnic bench for both summer and winter use, designing a plastic water bottle holder, solar panel trackers and a toy racer.



Current events in the field of science by students  
Science News for Students

Teaching 3D Shapes

<http://www.teachingideas.co.uk/>

The STEM career exploration game  
[lonfuture.org](http://lonfuture.org)

