

# HOMESCHOOL SCHEDULE OF CLASSES

## GRADES 6–8 (11–13 YEARS OLD)

### AUGUST 2016 THROUGH MAY 2017

The grade/age ranges listed are determined based on the state standards that these classes support and are not intended to be considered a limiting factor. You are responsible for registering your child(ren) for the correct grade/age group based on what you think is appropriate for your child(ren).

You will receive a pre-class and post-class resource and activity guide for each class that you are registered for, which are emailed out approximately one week prior and the day after the class, respectively.

## REGISTRATION OPENS JULY 25, 2016

Register online at: [azscience.org/Learning/homeschool](http://azscience.org/Learning/homeschool)

For all questions and/or a more detailed description of specific content covered, please email us: [homeschools@azscience.org](mailto:homeschools@azscience.org)

### **Insect Inquiry**

Aug. 16, 2016 | 1:30–3 p.m.

Can you tell the difference between an insect and an arachnid? Delve into classification as we dissect a scorpion and a grasshopper to compare their anatomy.

### **Cellular Circus**

Aug. 23, 2016 | 1:30–3 p.m.

The structure and function of the parts of a cell are explored in this hands-on classroom experience. Use a microscope to compare the structural differences between plant cells and animal cells.

### **Eco-Investigators All-Day Experience**

Sep. 2, 2016 | 10–3 p.m.

Can you solve some of nature's mysteries? Who left these tracks? What did an owl have for dinner? Students will explore how field ecologists answer these questions and many others.

Day includes admission into the World of Giant Insects traveling exhibition, giant screen film, challenge in CREATE, and general admission to Arizona Science Center.

Day schedule will be emailed to participants approximately one week prior to this day.

### **Scratch Coding**

Sep. 13, 2016 | 1:30–3 p.m.

Sep. 15, 2016 | 1:30–3 p.m.

Have you ever wondered how to make your own animations? Learn the basics of scratch coding as we work in groups to create then share simple animations.

### **Arduino**

Sep. 20, 2016 | 1:30–3 p.m.

Sep. 22, 2016 | 1:30–3 p.m.

The basics of written code will be explored in their class as students get hands on experience programming an Arduino to follow basic commands.

### **Squid Dissection**

Oct. 11, 2016 | 1:30–3 p.m.

Oct. 13, 2016 | 1:30–3 p.m.

Dive into the alien world of invertebrate zoology with a hands-on squid dissection. We will review basic dissection techniques as well as in depth coverage of squid anatomy and physiology. Come write your name in squid ink using the mysterious squid "pen"!

Additional \$5 per student to work on group specimen or additional \$8 to work on an individual specimen

### **Rat Dissection**

Oct. 18, 2016 | 1:30–3 p.m.

Oct. 20, 2016 | 1:30–3 p.m.

Students will work individually or in small groups and explore the anatomy of real rat specimens and will learn about their unique respiratory and digestive systems, in addition to proper dissection technique and etiquette.

Additional \$8 per student to work on group specimen or additional \$15 per student to work on an individual specimen.

Extended program

### **Cow Femur Dissection**

Oct. 25, 2016 | 1:30–3 p.m.

Oct. 27, 2016 | 1:30–3 p.m.

Explore the inner workings of bones and discover how our skeletal system is connected to our circulatory system! Students will work individually or in small groups to dissect a real cow femur and learn that bones are much more

than sticks that hold us together. Join us for a bone-a-fide good time!

Additional \$3 per student

### **Meteorology Mayhem**

Nov. 8, 2016 | 1:30–3 p.m.

Students will step into the shoes of a meteorologist as they present their own weather broadcast. Students will learn how to read a weather map then present their broadcast using a green screen.

### **Mission to Mars**

Dec. 6, 2016 | 1:30–3 p.m.

Did you know scientists have found water on Mars? Students will learn more about the red planet while they design and build a prototype of the Mars rover of the future.

### **CSI Forensics**

Dec. 13, 2016 | 1:30–3 p.m.

CSI Intern, your job is to use fingerprinting and other crime solving techniques to determine who committed the crime. You will take evidence from the crime scene and from crime suspects to try to figure out who is the criminal. Do you think you can solve the case?

### **Disaster Zone**

Jan. 10, 2017 | 1:30–3 p.m.

Would your home survive an earthquake? What about a tsunami? Explore the principles of disaster planning as you work in teams to engineer a disaster resistant structure.

### **Rocks and Minerals**

Jan. 17, 2017 | 1:30–3 p.m.

Work as field geologists to identify igneous, metamorphic, and sedimentary rocks. Explore what rocks are made of while identifying common rocks and minerals, then put your newfound skills to the test to identify different mystery minerals.

### **Engineering Challenge**

Feb. 7, 2017 | 1:30–3 p.m.

Work together as a team to design and create a contraption that in the team's opinion will benefit society. But choose your materials wisely, you'll be operating on a budget! After the designs have been made, teams will create a marketing plan to promote their product.

### **Heart Healthy**

Feb. 14, 2017 | 1:30–3 p.m.

Learn about the anatomy and physiology of the heart through a series of experiments and activities that measure heart rate. Understand the impact of exercise and diet on your heart health! As part of the class, each student will receive their own stethoscope!

Additional \$7 per student

### **Ocean Acidification**

Feb. 21, 2017 | 1:30–3 p.m.

Why should Arizonans be concerned about the ocean? Learn about the impacts humans have on the world's oceans, and how the ocean's chemistry is changing. Artistic techniques will be incorporated in this lesson as students explore concepts in acid-base chemistry.

### **Ocean Commotion All-Day Experience**

Mar. 3, 2017 | 10–3 p.m.

Explore the underwater world of cartilaginous fish as we examine their role in the ocean food chain and delve into their internal anatomy. We will compare the internal anatomy of two cartilaginous fish, a skate and a dogfish shark, to discover how they are adapted to survive in their ocean habitat.

Day includes admission into the Planet Shark traveling exhibition, giant screen film, challenge in CREATE at Arizona Science Center®, and general admission to Arizona Science Center.

Day schedule will be emailed to participants approximately one week prior to this day.

### **Really Cool Science**

Apr. 11, 2017 | 1:30–3 p.m.

The properties of solid, liquid and gas are explored through a variety of experiments using liquid nitrogen. Students learn and witness the changes to these states of matter as liquid nitrogen is used to freeze racquet balls, balloons, and even make ice cream to share!

Additional \$5 per student

### **Newtonian Know How**

Apr. 18, 2017 | 1:30–3 p.m.

Learn about force and motion as we examine the impact of Newton's Three Laws of motion on various everyday tasks.

### **Stranded!**

Apr. 25, 2017 | 1:30–3 p.m.

Learn how and why the human body gets energy from food by covering the four different macromolecules (carbohydrates – simple and complex, lipids, and proteins) needed by cells in order to function. Identify what kinds of foods offer the most nutrition and discover which foods contain carbohydrates, lipids, and proteins!

### **Space Science**

May 9, 2017 | 1:30–3 p.m.

The solar system, comets and the moon are all discussed as the students take their journey through space. Students are able to weigh themselves on planet scales as they learn more about gravity and mass of each planet. A comet is even made with the ingredients necessary to form a dirty snowball.

### **Life in a Drop**

May 23, 2017 | 1:30–3 p.m.

All life on our Earth depends on water for survival. Discover the microscopic world within a drop of water by identifying and classifying organisms found in various water samples.