

2017 PRS STEAM Week

After School Program Descriptions

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| The Science behind Halloween Effects Grades: K-5 | Spend time learning some of the secrets to your favorite Haunted House Effects! Discover the different ways fog is created, learn the science behind the ghostly lighting effects, and learn how animated projections can seemingly bring still objects to life. This session will give you a better understanding of the science that helps create the amazing effects that you see every Halloween! |
| Dr. Frankenslime's Lab Grades: 1-2 | In the "lab," our future scientists will create a rubbery polymer using Elmer's glue and Borax detergent. The polymer forms due to the cross linking of polyvinyl alcohol in the glue with boric acid found in the detergent. Polymers are important to the fields of both biology and chemistry. In biology, essentially all large biological molecules, such as proteins, DNA, and starches, are polymers. The "goop" polymer that students will be making in this activity can be more closely compared to synthetic chemical polymers such as plastic than to biologic polymers such as DNA. Now let's make some SLIME! |
| Simple Machines Grade: 2 | In today's high tech world, we take for granted a wide variety of specialized machines that can complete almost any task imaginable. Have you ever wondered how large buildings were built and heavy objects were lifted centuries ago? In this activity, students will learn the concept of mechanical advantage and will experiment using wedges, levers, screws, pulleys, inclined planes, and wheels/axles to accomplish a variety of challenges. |
| Roller Coaster Design Grade: 2 | Students will be engaged in designing a roller coaster using the engineering and design process. Their challenge will be to build a roller coaster that allows a sphere to travel up inclines and make turns. Can you design a roller coaster that provides the longest possible ride? What is the greatest distance that your roller coaster can cover? Do the large and small spheres travel at the same rate of speed? Which sphere should reach the bottom first? |
| Explore the PRS Stream (outdoor activity) Grades: 2-3 | Explore the namesake of the Plymouth River School (just behind the school) with a field scientist from the North and South Rivers Watershed Association! By examining water temperature, salinity, and looking for small living creatures in this stream behind the school, children and adults will learn how field scientists measure the health of our waterways. This event will be rain or shine and students should bring rubber boots. |
| Forensics & Crime Solving Grades: 2-3 | Calling all crime sleuths! Have you ever thought about how unique your fingerprints are? Isn't it amazing how no two people have the same fingerprints? Not only is that fascinating, it is also a useful fact...especially if you're a detective solving a mysterious crime! Come examine your own fingerprint patterns and learn to dust and lift prints left behind at the scene of a crime. Officer John Walden will be on hand to speak about the important role of forensic science in real life crime solving! |



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| Recycle Music Grades: 2-5 | Ms. Kelfer and Mrs. Turner are joining forces to offer a STEAM activity combining Science, Art, and Music! Have you ever made music with pots and pans? How about things you found outside? Can you make music using things we don't usually think of as instruments? How is sound created? During this program, students will experiment with sound and vibration before designing and constructing musical instruments using recycled materials! |
| The Rhythm of your Heart Grades: 3-4 | Calling all future doctors, nurses and scientists! Join us as we learn all about your heart, how it works, and the importance of keeping it healthy. Explore how your heart functions using real life medical equipment including a stethoscope, EKG, and ultrasound. |
| Programming a Robot for beginners! Grades: 3-4 | Sphero SPRK+ is far more than just a robot - it's your vehicle to discovery incorporating STEAM activities, creativity, and collaboration. We will learn to use the Sphero Lightning Lab app on an iPad to learn programming and complete activities with the Sphero SPRK+ Robot. Beginners can give robots commands by utilizing a familiar block-based drag and drop interface for their robot to follow. The more advanced can create a maze and give Sphero the right commands to navigate the maze successfully. |
| Leverage - Catapults & Trebuchets Grades: 4-5 | Learn about leverage, fulcrum points, math and the art of flinging projectiles through the air. Students will have a chance to experiment with toy trebuchets (a catapult propelled with weight rather than tension) where they will learn how different weights and launch angles result in different distances. We will then use that knowledge to launch a pumpkin (or watermelon) with a real trebuchet on the PRS fields! In addition to readying students for their next castle siege, they will see how math translates into real life results.....plus shooting stuff is FUN! |
| Soap box Sleds Grades: 4-5 | Have you ever wondered why some sleds go faster than others? In this activity, students will design and race soap box sleds down an incline. Students will measure how different materials affect the performance of their sled. They will experiment with weight and surface materials to determine how they affect the speed of their sled. |
| HCAM Video Production Grade: 5 | Lights! Camera! Action! HCAM staff, Erin DiMartino (Educational Access Coordinator), and Assistant Principal, Mrs. Smith, will bring students on a "virtual field trip" to the local TV station: Hingham Community Access and Media. In addition, there will be an explanation of how a green screen works. Students will be able get a hands-on experience using the video production equipment and have a chance to be the videographer, actor, narrator, and learn about all the work that happens behind the scene! |

