

# CAMP WILLIAM HINDS, BSA 2017 STEAM PROGRAM



**STEAM** fields are Science, Technology, Engineering, and Mathematics, together with Art and design. This program aims to teach Scouts to think critically and have an engineering and design approach to real-world problems while building on their mathematics and science base.

## OLDER BOY PROGRAMS

If a Scout is 13 years or older, they can participate in unique afternoon programs that are focused on a specific subjects or challenges. Space is limited for all programs. Scouts should plan on attending every day that their activity is offered.

### CSIT (Crime Scene Investigative Team)

**(2 days 3 hours/day) Monday & Tuesday or Wednesday & Thursday**

Do you have what it takes to get to the bottom of it? Are you a master detective? Let's find out!

Solve a murder mystery by applying forensic science techniques. Investigate blood typing activities using simulated blood. Learn how to lift fingerprints and take casts of footprints. Identify mystery substances with paper chromatography and much more.



### BOY SCOUT NOVA AWARDS

**(4 days 3 hours/day) Monday through Thursday**

The Boy Scouts of America developed the Nova Awards program to excite and expand a sense of wonder in our Scouts. By working with an adult counselor or mentor, the various modules allow them to explore the basic principles of STEM and discover how fun and fascinating STEM can be.

In 2017 the Shoot! Award will be featured. "Shoot!" is a hands-on STEM badge that gives the Scouts many real-world opportunities to build, experiment, analyze and explain how projectile motion works.

## MERIT BADGE PROGRAM



Period 1	Period 2	Period 3	Evening
Programming MB Geocaching MB Engineering MB	Model Design & Bld 2+3 Animation MB Photography MB	Model Design & Bld 2+3 Archaeology MB Electricity MB	Astronomy MB

## AFTERNOON ACTIVITIES

Troop and Patrol activities should involve a variety of events. These activities are designed to strengthen the patrol. Activities will emphasize: teamwork, cooperation, leadership, creativity and problem solving.

## THREE PERIOD ACTIVITIES

### Mystery Challenge (3 periods, offered Period 4-6)

This will be in the same vein as the great egg drop challenge (see below) but these activities will be much more involved. The actual challenge given to the patrols (or small groups) will be a surprise. Patrols will be given supplies and a challenge to complete before the end of the time period. Can your patrol successfully complete the challenge?



### Spaghetti Bridges (3 periods, offered Period 4-6)

Civil engineers design structures such as buildings, dams, highways and bridges. Scout teams or patrols explore the field of engineering by making bridges using spaghetti as their primary building material. Then they test their bridges to see how much weight they can carry before breaking.

## TWO PERIOD ACTIVITIES

### Lego Derby (2 periods, offered Period 4-5)

Each pair of Scouts will be given a set of **Lego** derby wheels which will run on a standard Pinewood Derby track. Scouts will be given 20-30 minutes to design and build a derby car out of assorted Lego blocks following a set of pre-printed design rules. At the end of the time, all cars will have a race or two. After the race, teams will have the opportunity to re-design their cars. A second set of races will be held. Again teams will have time to re-design their cars. At the end of the period, the car with the best time will be saved for a campwide race off on Thursday evening.



## ONE PERIOD ACTIVITIES

Leaders are encouraged not to share the activity descriptions with their Scouts ahead of time so that Scouts can express their own creativity. Two activities will be offered each season.

### Great Egg Drop (1 period, offered Period 4, 5, or 6)

Each patrol will be given various materials for building (e.g. straws, masking tape, one fresh egg, newspaper, cardboard, etc.) Patrols will be given Instructions and a set amount of time to complete building a structure, with the egg inside it. Structures are dropped from at least 10 feet in elevation and then inspected to see if the eggs survived. The winners are the patrols that were successful in protecting the egg.

Great Egg Drop



### Sneak a Peek (1 period, offered Period 4, 5, or 6)

The staff will build a small sculpture or design with some type of the building material (Legos, Tinker Toys) and hide it from the patrols. Each patrol will be given enough building material so that they could duplicate what that staff has already created. The original sculpture will be in a place that is hidden but at an equal distance from all the patrols. One member from each patrol will come at the same time to look at the sculpture for five seconds in order to try to memorize it as much as possible before returning to his patrol. After they run back to their patrol, they have twenty-five seconds to instruct their patrol how to build the structure so that it looks like the one that has been hidden. After the twenty-five seconds, each patrol will send up another member of their patrol who gets a chance to "sneak a peek" before returning to their patrol. Continue in this pattern until one of the patrols successfully duplicates the original sculpture.

Sneak a Peek



## EVENING ACTIVITIES

The STEAM Center will offer one evening merit badge and a few drop-in activities.  
2017 Evening Merit Badge - Astronomy MB

### Individual Evening Activities



#### Blast Car Design, Construction, and Racing

Blastcar is a CO<sub>2</sub> powered car for Boy Scouts. Blastcar is similar to a pinewood derby car in that the scout gets a pine wood block, 4 wheels and 4 axles to build a car, but the similarity stops there. Scouts can use their knowledge to experience the engineering design process through sketching an idea for their racer, laying out a design, constructing the car, conducting trial tests, modifying their design, and adding finishing details. Scouts design their racers for optimum performance on the course.



Scouts need to attend all four evenings

Monday: Scouts work on the design phase. Staff will rough cut the cars for Tuesday evening.

Tuesday & Wednesday: Scouts will finish car construction – shaping, painting, adding wheels, etc.

Thursday: Race event.

Scouts will be required to purchase the kit - .under \$5.00

### Drop-in Coding (Monday thru Thursday)

Scouts may drop-in for one, two, three, or four evening. Scouts will experience various coding activities from graphic based to text based and run their code on a screen device (computer or iPad). The actual experiences will be dependent of the hardware and software available when camp opens. Our hope is to have several options available across platforms such as: Scratch, Pyonkee, BASIC, and XCode.



The next step is to program a 3D device. Learn to program a Sphero or BB8 robot. Beginners can give robots commands by drawing a path in the app for their robot to follow. Intermediate coders can utilize the familiar block-based drag and drop interface, while pros can use text programming and write their own code.

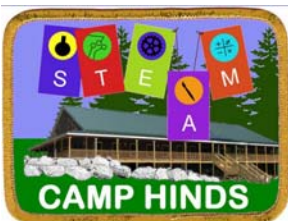
Scouts should be prepared to share resources with other Scouts.

### Drop-in: How to hide secret messages in drawings.

Long before the Boy Scouts existed, Baden-Powell was a well-known officer in the British army. In his role as a spy he hid details of the enemy's forces and installations in sketches of bugs, plants, and even historic churches. As part of the campwide event, you will be expected to have a patrol flag which will include a secret message hidden in its design. Stop by the STEAM center if you need hints as to how to do this.



## CAMP HINDS STEAM AWARD



In celebration of our new STEAM Center, Scouts may earn the new Camp Hind STEAM award. To complete the award Scouts must do the following while in camp.

- 1 – Earn one of the merit badges offered in the morning at the STEAM Center.
- 2 – Take part in either one of the older boy programs or afternoon activities offered at the STEAM Center.
- 3 – Bring a buddy to one of the evening activities at the STEAM Center.