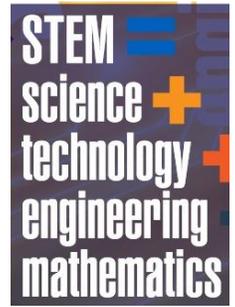




Focus on STEM

Each month, we will put together sample road maps for STEM related achievements or awards to make it easier to integrate STEM into your existing program.



Boy Scouts: Whoosh!

1. Read or watch 3 hours total of engineering-related shows, motion or motion-inspired technology. Make a list of at least 2 questions or ideas from each article or show. Discuss 2 questions with your counselor. *Have the scout watch videos on PBS, Discovery Channel or the Science Channel or read books about engineering, motion or motion-inspired technology.*
2. Complete one merit badge from the following list: Archery, Aviation, Composite Materials, Drafting, Electronics, Engineering, Inventing, Model Design & Building, Railroading, Rifle Shooting, Robotics, Shotgun Shooting. After completion, discuss with your counselor how the merit badge you earned uses engineering. *Scouts should complete this requirement on their own.*
3. Do ALL of the following: (A) Make a list or drawing of the six simple machines. (B) Be able to tell your counselor the name of each machine and how each machine works. (C) Discuss the following with your counselor: (1) the simple machines that were involved in your chosen merit badge, (2) the energy source causing the motion for the subject of your merit badge, (3) what you learned about motion from earning your merit badge. *Using items from the hardware store, have each scout demonstrate the six simple machines.*
4. Choose A or B and complete ALL the requirements. (A) Visit an amusement park. Then discuss the following with your counselor: (1) the simple machines present in at least two of the rides and (2) the forces involved in the motion of any two rides. (B) Visit a playground. Then discuss the following with your counselor: (1) the simple machines present in the playground equipment and (2) the forces involved in the motion of any two playground fixtures. *Explore a local park (find one close to you using parkgeek.com) or take a group of interested scouts to the amusement park. While there, make sure to take note of the simple machines and forces used in the rides or playground fixtures.*
5. Do the following: (A) On your own, design one of the following and include a drawing or sketch: an amusement park ride OR a playground fixture OR a method of transportation. (B) Discuss with your counselor: (1) the simple machines present in your design and (2) the energy source powering the motion of your creation. *Scouts should complete this requirement on their own. Need inspiration? Visit an amusement park, local park, or the transportation museum.*
6. Discuss with your counselor how engineering affects your everyday life.

Proposed Time Schedule

Prep Work

Scouts should watch or read 3 hours of engineering-related shows, motion or motion-inspired technology. Scouts should make a list of at least 2 questions or ideas from each article or show.

Week 1/Counselor Meeting 1

Using items available at the hardware store, have each scout demonstrate the 6 simple machines and how they work.

If time allows, each scout should discuss what they have watched or read. Discuss how engineering affects your life.

Week 2/Counselor Meeting 2

Visit an amusement park or playground. With their counselor, discuss the simple machines and forces used in the rides or playground fixtures.

At Home Work

At home, design an amusement park ride, playground fixture, or method of transportation.

Finish one of the merit badges listed above.

Counselor Meeting 3

With your counselor, discuss the simple machines and energy source powering the motion of your creation.

Scouts should discuss with their counselor how the merit badge earned uses engineering.