Greenbush & Boy Scouts of America - Ozark Trails Council Science & Technology Merit Badge University - 2013

Prerequisites:



Merit Badge Requirements - Prerequisites At-a-Glance:

ASTRONOMY	CHEMISTRY	ENERGY	ENVIRONMENTAL SCIENCE	SPACE EXPLORATION	WEATHER
5a, 5b, 6b, 9	none	4, 5	3f1, 6	2, 7, 8	10

Troop Leader	MB Counselor	ASTRONOMY
		5a) List the names of the five most visible planets. Explain which ones can appear in phases similar to lunar phases and which ones cannot, and explain why.
		5b) Using the internet, books, and other resources, find out when each of the five most visible planets will be observable in the evening sky during the next 12 months, then compile the information in a chart or table.
		6b) Sketch the phase and daily position of the Moon at the same hour and place for four days in a row. Include landmarks such as hills, trees, and buildings.
		9) Find out about three career opportunities in astronomy. Pick one and find out the education, training, and experience required for this profession. Discuss with the counselor and explain why the profession might interest you.

Troop Leader	MB Counselor	ENERGY
		4) Conduct an energy audit of your home. Keep a 14 day log that records what you and your family did to reduce energy use. Include the following in your report and, after the 14 day period, discuss what you have learned with your counselor.
petroleum, and natural gas, and tell how each is deli current cost; OR record the transportation fuel used		a) List the types of energy used in your home such as electricity, wood, oil, liquid petroleum, and natural gas, and tell how each is delivered and measured, and the current cost; OR record the transportation fuel used, miles driven, miles per gallon, and trips using your family car or another vehicle.
		b) Describe ways you and your family can use energy resources more wisely. In preparing your discussion, consider the energy required for the things you do and use on a daily basis (cooking, showering, using lights, driving, watching TV, using the computer). Explain how you can change your energy use through reuse and recycling.
		5) In a notebook, identify and describe five examples of energy waste in your school or community. Suggest in each case possible ways to reduce this waste. Describe the idea of trade offs in energy use. In your response, do the following:
		a) Explain how the changes you suggest would lower costs, reduce pollution, or otherwise improve your community.
		b) Explain what changes to routines, habits, or convenience are necessary to reduce energy waste. Tell why people might resist the changes you suggest.





Prerequisites - Continued:

Troop Leader	MB Counselor	ENVIRONMENTAL SCIENCE	
		3f1) Look around your home and determine 10 ways your family can help reduce pollution.	
		Practice (and bring documentation of) at least two of these methods for seven days.	
		6) Find out about up to three career opportunities in environmental science. Pick one and	
		find out the education, training, and experience required for this profession. Come	
		prepared to discuss this with your counselor and explain why this profession might be of	
		interest to you.	

Troop Leader	MB Counselor	SPACE EXPLORATION
		2) Design a collector's card, with a picture on the front and information on the back, about your favorite space pioneer. Bring your card with you to Greenbush and be prepared to share and discuss four other space pioneers with your counselor.
		7) Design an inhabited base located on the Moon or Mars. Make drawings or a model of the base and bring to Greenbush. Your base should consider and plan for the following:
		a) source of energy, b) how it will be constructed,
		c) life-support system, d) purpose, and function
		8) Find two possible careers in space exploration that interest you and list the qualifications, education, and preparation required.

Troop Leader	MB Counselor	WEATHER	
		10) Find out about a weather-related career opportunity that interests you. Be prepared to discuss with and explain to your counselor what training and education are required for	
		such a position, and the responsibilities required of such a position.	



