ENERGY MERIT BADGE WORKBOOK

This Scoutmaster Bucky Merit Badge Workbook is based off the current Scouts BSA Requirements.

Consider also using the Energy merit badge class preparation page for clarification and expections when participating in a Scoutmaster Bucky merit badge opportunity (online or in-person).

https://scoutmasterbucky.com/merit-badges/energy/

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REQUIREMENT 1: Do the following:
REQUIREMENT 1 A: With your parent's permission, use the internet to find a blog, podcast, website, or an article on the use or conservation of energy. Discuss with your counselor what details in the article were interesting to you, the questions it raises, and what ideas it addresses that you do not understand.
REQUIREMENT 1 B: After you have completed requirements 2 through 8, revisit your source for requirement 1a. Explain
to your counselor what you have learned in completing the requirements that helps you better understand the article.
REQUIREMENT 2: Show you understand energy forms and conversions by doing the following:

REQUIREMENT 2 A: Explain toaster, greenhouse, lightbulb,	how THREE of the bow drill, cell phone	following devices u e, nuclear reactor, sw	se energy, and eat lodge.	explain their energ	y conversions:
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REQUIREMENT 2 B: Construc	t a system that make	es at least two energ	y conversions a	nd explain this to you	ır counselor.
REQUIREMENT 3: Show you situation where energy moves	understand energy through a system to	efficiency by expla produce a useful res	ining to your coult. Do the follow	ounselor a common wing:	example of a

REQUIREMENT 3 A: Identify the parts of the system that are affected by the energy movement.	
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REQUIREMENT 3 B: Name the system's primary source of energy.	
REQUIREMENT 3 B: Name the system's primary source of energy.	
REQUIREMENT 3 C: Identify the useful outcomes of the system.	
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REQUIREMENT 3 D: Identify the energy losses of the system.	
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REQUIREMENT 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.

14-day log		_
	Energy audit of your home	
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	14-day log	
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What you have learned
REQUIREMENT 4 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.
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.

REQUIREMENT 4 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 what is meant by sustainable energy sources. Explain how you can change your energy use through reuse and recycling.

Energy required for the things you do and use on a daily basis What is meant by sustainable energy sources What is meant by sustainable energy sources How you can change your energy use through reuse and recycling	
What is meant by sustainable energy sources	Ways you and your family can use energy resources more wisely
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REQUIREMENT 5: In a notebook, identify and describe five Suggest in each case possible ways to reduce this waste. De do the following:	re examples of energy waste in your school or community. scribe the idea of trade-offs in energy use. In your response,
Example of energy waste	Possible ways to reduce this waste
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The idea of trade-offs in energy use.	
REQUIREMENT 5 A: Explain how the changes you suggest w	rould lower costs, reduce pollution, or otherwise improve your
community.	oala lower costs, reduce pollution, or otherwise improve your

REQUIREMENT 5 B: Explain what changes to routines, habits, or convenience are necessary to reduce energy waste. Tell why people might resist the changes you suggest.
REQUIREMENT 6: Prepare pie charts showing the following information, and explain to your counselor the important ideas each chart reveals. Tell where you got your information. Explain how cost affects the use of a nonrenewable energy resource and makes alternatives practical.
How cost affects the use of a nonrenewable energy resource and makes alternatives practical

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Pie chart	TO A: The energy resu	urces that supply the	Officed States with th	ost of its effergy	
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Where you got you	ır information				
Where you got you	ar imormation				

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REQUIREMENT 6	B: The share of energy	resources used by the	e United States that co	mes from other countrie	!S
Pie chart					
Where you got your inf	ormation				
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REQUIREMENT 6 C: The proportio	n of onorgy recourses i	read by homos businesse	os industry and transports	tion
Pie chart	if of effergy resources t	ised by homes, businesse	es, muustry, and transporta	ILIOII
Where you got your information				

REQUIREMENT 6 D: The fue	als used to generate Amor	cica's alastricity	
Pie chart	sis used to generate Amer	ica's electricity	
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Where you got your information			

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	T 6 E: The world's known	and estimated primary e	energy resource reserves	5	
Pie chart					
Where you got you	ır information				

REQUIREMENT 7: Tell what is being done to make FIVE of the following energy systems produce more usable energy. In your explanation, describe the technology, cost, environmental impacts, and safety concerns.		
 Biomass digesters or waste-to-energy plants Cogeneration plants Fossil fuel power plants Fuel cells Geothermal power plants Nuclear power plants Solar power systems Tidal energy, wave energy, or ocean thermal energy conversion devices Wind turbines 		
First energy source		
What is being done to make it produce more usable energy		
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Environmental impacts	Safety concerns
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Environmental impacts	Safety concerns
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Third energy source	
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Technology	Cost
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Environmental impacts	Safety concerns
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Fourth energy source	
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What is being done to make it produce more usable energy	
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Technology	Cost

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Environmental impacts	Safety concerns
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Fifth energy source	
What is being done to make it produce more usable energy	
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Technology	Cost

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Environmental impacts	Safety concerns
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REQUIREMENT 8: Find out what opportunities are available	for a career in energy. Choose one position that interests you
Opportunities that are available for a career in energy	
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Education and training required for one position	