

Designed to Crunch



Scouts BSA Nova Award Workbook

This workbook can help you but you still need to read the Scouts BSA Nova Awards Guidebook. This Workbook can help you organize your thoughts as you prepare to meet with your counselor. You still must satisfy your counselor that you can demonstrate each skill and have learned the information. You should use the work space provided for each requirement to keep track of which requirements have been completed, and to make notes for discussing the item with your counselor, not for providing full and complete answers. If a requirement says that you must take an action using words such as "discuss", "show", "tell", "explain", "demonstrate", "identify", etc, that is what you must do.

Counselors may not require the use of this or any similar workbooks.

No one may a	dd or subtract from the official requirements found in the Sc The requirements were revised in 2015 • This	outs BSA Nova Awards Guidebook (Pub. 34033 – SKU 614936). workbook was updated in June 2020
Scout's Name:_		Unit:
Counselor's Nar	me:http://www.USScouts.Org	Counselor's Phone No.: http://www.MeritBadge.Org
		stions about this <u>workbook</u> to: <u>Workbooks@USScouts.Org</u> <u>ments</u> for the <u>Nova Award</u> to: <u>Program.Content@Scouting.Org</u>

This module is designed to help you explore how math affects your life each day

- Choose A or B or C or D and complete ALL the requirements.
 - A. Watch about three hours total of math-related shows or documentaries that involve scientific models and modeling, physics, sports equipment design, bridge building, or cryptography.

What was watched?	Date	Start Time	Duration

Some examples include—but are not limited to—shows found on PBS ("NOVA"), Discovery Channel, Science Channel, National Geographic Channel, TED Talks (online videos), and the History Channel. You may choose to watch a live performance or movie at a planetarium or science museum instead of watching a media production. You may watch online productions with your counselor's approval and under your parent's supervision.

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1.

2.

Then do the following:

•	
	vo of the questions or ideas with your counselor.
cuss tv	vo of the questions or ideas with your counselor.
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	Helpful Link						
	"The Mathema						
	Website: http://	www.rnath.un	nass.edu/~gu	nnells/talks/o	crypt.pdf		
en do t	he following:						
List a	nd record the URLs	s of the website	es you visited a	and the major	topics covered	on the websites	$you\ visited.$
	use the copy and pa	aste function—	-eliminate the v			urces.)	
URL	<u></u>			Major Topics			

C B. Research (about three hours total) several websites (with your parent's or guardian's permission) that discuss and

explain cryptography or the discoveries of people who worked extensively with cryptography.

Start Time

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Duration

End Time

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Date

Designed to	Crun	ch	Scout's Name:					
	2.	Discuss with your counselor uses mathematics.	how cryptography is used in	the military and in everyday	life and how a cryptographer			
c C	to re	id at least three articles (abo ead about how technology ar struction, bridge building, en	nd engineering are changin	g sports equipment, how an	cryptography. You may wish d why triangles are used in eep information secure, or			
		Science, Science Illustra	ated, Discover, Air & Space	d to—Odyssey, Popular Me e, Popular Astronomy, Astro uts and Volts, and Scientific	nomy, Science News,			
	-1		ai mistory, Robot, Servo, N	uts and voits, and scientific	American.			
	abo	ut the stock market.	ъ.	C1 1 T'	ь .:			
		What was read?	Date	Start Time	Duration			
	L							
	1 h e 1.	n do the following:	actions or ideas from each s	urtiala				
	1.	Make a list of at least two qu	estions of ideas from each a	ii iicie				

Designed to Cr	unch		Scout's Name:	
2	Discuss two of the questions	or ideas with your counselor.		
	1.			
	2.			
c D D	o a combination of roading, was	tching and recearching (aho	ut throo hours total)	
c D D	o a combination of reading, wa' What was watched or read?	Date	Start Time	Duration
Γ	what was wateried of redu.	Dute	Start Time	Duration
-				
-				

Then do the following:

	1.	Make	e a list of at least two quest	ions or ic	leas from each article, website	e, or sho	W.
	2.	Disc	uss two of the questions or	ideas wi	th your counselor.		
		1.					
		2.					
2.	Complete O	NE me	erit badge from the followi	ng list. (0	Choose one that you have no	t alread	y used toward another Nova award.
	-		American Business	C	Drafting	С	Radio
			Chess	С	Entrepreneurship	С	Signs, Signals, and Codes
			Computers	С	Orienteering	С	Surveying
		С	Digital Technology	С	Personal Management	С	Weather

gned to C	run	ch Scout's Name:
After com	ple	ion, discuss with your counselor how the merit badge you earned uses mathematics.
Choose T support yo A.	WC our) from A or B or C or D or E and complete ALL the requirements. (Write down your data and calculations to explanation to your counselor. You may use a spreadsheet. Do not use someone else's data or calculations Calculate your horsepower when you run up a flight of stairs.
С А .		Calculate your norsepower when you run up a night of stalls.
L		Handra and the same and the sam
c 1	1.	How does your horsepower compare to the power of a horse?
C 2	2	How does your horsepower compare to the horsepower of your favorite car?
Cl		
Snare	e yo	our calculations with your counselor, and discuss what you learned about horsepower.

Designed to	Cruno	h			Scout's Name:	
			Website: <u>h</u>	alculate Your Horsepowenttp://www.wikihow.com/Ca	alculate-Your-Horsepower	
C B.	Atten	d at least Date	two track, cr	oss-country, or swim meet Type of Meet	ts. Competitors	
				Type of mook		
	С .	1. For ea	ach meet, tim	ne at least three racers. (T	ime the same racers at each meet.)	
			Date	Distance	Racer	Time
	с 2		late the aver lations.)	age speed of the racers yo	ou timed. (Make sure you write down	your data and
	С		pare the aver s you attende		to each other, to the official time, and	I to their times at the two

Designed to	Crunch	ì							Scou	t's Nar	ne:		
		your ca	alculations	with yo	ur coun	selor, and o	discuss y	our conclus	sions a	bout th	e racers	s' streng	ths and
c C .	Attend	a soc	cer, baseb	all, softb	all, or b	asketball g	ame. Ch	oose two pla	ayers.	Keep	rack of	their effo	orts during the
	game. examp	(Make oles:	sure you	write do	wn your	data and o	alculatio	ns.) Calcula	ite the				
	2. B	aseball	or softbal	l—Battir	ng avera	age, runs ba	atted in, f	ouls, offside ielding stati	stics,				
		asketba	all—Points			pted, rebou	ınds, stea	als, turnove 	rs, an	d block	ed shots	6	
	Date				Sport:			Teams:					
	Play	er 1:						Player 2:					

ed to Crui	nch						Scout's l	Name:
Share y	our c	alculations with	your co	unselor, an	d discuss	your conclu	sions about the	e players' strengths and weakn
effo	orts o		eam duri	ng the gan	ne. (Make			arent or friend.) Keep track of t data and calculations.) Calculat
Da	te			Teams:				
1.	Kick	cs/punts						
	a.	Kickoff—Kick	return ya	rds				
		Kicks						
		Return Yards	S					
	b.	Punt—Numbe	r, yards					
		Punts						
		Yards						
		Return Yards	5					
	C.	Field goals—	Attempted	d, percent o	completed,	yards		
		Attempts						
		Completed						
		Yards						
	d.	Extra point—A	ttempted	d, percent o	ompleted			
		Attempts						
		Competed						
2.	Offe	ense						
	a.	Number of firs	t downs					
		First Downs						
	b.	Forward passe of passes cau	es—Atter ght by ea	mpted, per och receive	cent compl r, yardage	eted, total I gained by (ength of passes	s, longest pass, number and le fter catching a pass
		Attempted						
		Completed						
		Yards						
		Longest	+					

ed to Crunch		Scout's Name:	
	Receptions		
	Yards gained		
C.	Running plays- or lost, and nu	nber, yards gained or lost for each run, longest run from scrim of touchdowns	mage line, total yards gained
	Plays		
	Yards Gained		
	Yards Lost		
	Longest run		
	Total Yards		
	Touchdowns		
3. De	efense—Number	arterback sacks, interceptions, turnovers, and safeties	
S	Sacks	·	
lı	nterceptions		
_	urnovers		
5	Safeties		
	visit NASA's S 8/features/F_C Note: The URL	Participate in a star count to find out. This may be done alone to swith your counselor. It Observation Network website at https://www.nasa.gov/audie.ng_the_Stars.html for instructions on performing a star count. If in the Nova Awards Guidebook is no longer valid. The URL I but see the note below.	nce/foreducators/5-
2.	•	ve clear nights at the same time each night.	
	Date:	Number	
Note:	The NACA	listed in requirement 3E1 contains the following statement:	

The NASA webpage listed in requirement 3E1 contains the following statement:

Disclaimer: This material is being kept online for historical purposes. Though accurate at the time of publication, it is no longer being updated. The page may contain broken links or outdated information, and parts may not function in current web browsers.

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	J		С	3.	Report your results on NASA's Student Observation Network website and see how your data compares to others.
4.	Do A	ΔΙΙ	of th	e fol	llowing:
					ate your calculator and explore the different functions.
	С	В.	Dis	CUSS	the functions, abilities, and limitations of your calculator with your counselor. Talk about how these affect wha
	C	-	you	can	and cannot do with a calculator. (See your counselor for some ideas to consider.)
5.	Disc	cuss	with	you	r counselor how math affects your everyday life.

Scout's Name: _

When working on Nova and Supernova awards, Scouts and Scouters should be aware of some vital information in the current edition of the *Guide to Advancement* (BSA publication 33088).Important excerpts from that publication can be downloaded from http://usscouts.org/advance/docs/GTA-Excerpts-nova.pdf.

You can download a complete copy of the Guide to Advancement .from http://www.scouting.org/filestore/pdf/33088.pdf.

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