	Austin Adams	Ethan Northup	Evan White	an Kerby	Nathen Hebert	Nicko Moran	Noah Dynka	Ryan Dynka
Designed to Crunch! Patrol- Blackhawks	Aus	Eth	Eva	lan	Nai	Nic	No	Rya
1. Choose A or B or C or D and complete ALL the requirements.								
A. Watch about three hours total math-related shows or documentaries that								
involve scientific models and modeling, physics, sports equipment design, bridge								
building, or cryptography. Then do the following:								
1. Make a list of at least five questions or ideas from the show(s) you watched.								
Discuss two of the questions or ideas with your counselor								
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. Then do the following:								
people into nonea citation, man di people priji men de ane isine ining.								
1. List and record the URLs of the websites you visited and the major topics								
covered on the websites you visited. (You may use the copy and paste								
function—eliminate the words—if you include your sources.)								
2. Discuss with your counselor how cryptography is used in the military and in								
everyday life and how a cryptographer uses mathematics.								
C. Read at least three articles (about three hours total) about physics, math,								
modeling, or cryptography. You may wish to read about how technology and								
engineering are changing sports equipment, how and why triangles are used in								
construction, bridge building, engineering, climate and/or weather models, how								
banks keep information secure, or about the stock market. Then do the following:								
banks keep information secure, or about the stock market. Then do the following.								
1. Make a list of at least two questions or ideas from each article.								
2. Discuss two of the questions or ideas with your counselor.								
D. Do a combination of reading, watching, or researching (about three hours								
total). Then do the following:								
1. Make a list of at least two questions or ideas from each article, website, or								
show.  2. Discuss two of the guestions or questions with your counselor.								
2. Complete ONE merit badge from the following list. (Choose one that you have								
not already used toward another Nova award.) After completion, discuss with								
your counselor how the merit badge you earned uses mathematics.								
American Business								
Orienteering								
Chess Personal Management								
Computers								
Radio								
Drafting								
Surveying								
Entrepreneurship								
Weather								
3. Choose TWO from A or B or C or D or E and complete ALL the requirements.								
(Write down your data and calculations to support your explanation to your								
counselor. You may use a spreadsheet. Do not use someone else's data or								
Calculations.)								
A. Calculate your horsepower when you run up a flight of stairs.  1. How does your horsepower compare to the power of a horse?								
2. How does your horsepower compare to the horsepower of your favorite car?								
2 assaysar norsepower compare to the norsepower or your lavorite car:								
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Designed to Crunch! Patrol- Blackhawks  3. Discuss with your counselor:  8. Attend at least two track, cross-country, or swim meets.  1. For each meet, line at least three racers, filme the same racers at each meet.  2. Calculate the average speed of the racers you timed. (Make sure you write down your data and calculations.)  3. Compare the average speeds of your racers to each other, to the official time, and to their times at the two meets you attended.  4. Share your calculations with your counselor, and discuss your conclusions about the racers' strengths and weaknesses.  C. Attend a soccer, baseball, softball, or basketball game. Choose two players and keep track of their efforts during the game. (Make sure you write down your data and calculations.) Calculate their statistics using the following as examples:  1. Soccer—Goals, assists, corner kicks, keeper saves, fouls, offsides  2. Baseball or softball—Batting average, runs batted in, fielding statistics, pitching statistics  3. Basketball—Points, baskets attempted, rebounds, steals, turnovers, and blocked shots  4. Share your calculations with your counselor, and discuss your conclusions about the players' strengths and weaknesses.  D. Attend a football game or watch one on TV. (This is a fun activity to do with a parent or friend) Keep track of the efforts of your favorite team during the game. (Make sure you write down your data and calculations.) Calculate your team's statistics using the following as examples:  1. Ricks/punts  3. Kickoff—Rick return yards  5. Punt-Number, yards  6. Extra poll-Mappley—Humber, yards gained or lost for each run, longest run from scrimmage line, total yards gained or lost, and number of fouchdowns  3. Defense—Number of quarterback sacks, interceptions turnovers, and safeties  4. Share your calculations with your counselor, and discuss your conclusions about your team's statistics using the following as examples:  1. Fired goals—Attempted, percent completed, total length of passes, number and length of passes, and the ye								,	
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www.nasa.gov/audience/foreducators/son/energy/starcount/ for instructions on performing a star count.  2. Do a star count on five clear nights at the same time each night.  3. Report your results on NASA's Student Observation Network website and see									
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2. Do a star count on five clear nights at the same time each night.      3. Report your results on NASA's Student Observation Network website and see									
3. Report your results on NASA's Student Observation Network website and see									
how your data compares to others.									
	how your data compares to others.								

Designed to Crunch! Patrol- Blackhawks	Austin Adams	Ethan Northup	Evan White	lan Kerby	Nathen Hebert	Nicko Moran	Noah Dynka	Ryan Dynka
4. Do ALL of the following.								
A. Investigate your calculator and explore the different functions.								
B. Discuss the functions, abilities, and limitations of your calculator with your								
counselor. Talk about how these affect what you can and cannot do with a								
calculator. (See your counselor for some ideas to consider.)								
5. Discuss with your counselor how math affects your everyday life.								

	_									
	Chase Seeberger	Conner Godfrey	Conner Maxey	Dexter Siroky	Kyle Hardy	Luke Farrell	Sam Burch	Sean Taylor	Trey Oletski	Zane McClish
Designed to Crunch! Patrol- Blue Pheonix	Cha	Ç	Cor	De	K	Luk	San	Sea	Tre	Zar
1. Choose A or B or C or D and complete ALL the requirements.										
A. Watch about three hours total math-related shows or documentaries that										
involve scientific models and modeling, physics, sports equipment design, bridge										
building, or cryptography. Then do the following:										
1. Make a list of at least five questions or ideas from the show(s) you watched.										
2. Discuss two of the questions or ideas with your counselor	-	-								
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. Then do the following:										
propre me										
1. List and record the URLs of the websites you visited and the major topics										
covered on the websites you visited. (You may use the copy and paste										
function—eliminate the words—if you include your sources.)										
2. Discuss with your counselor how cryptography is used in the military and in										
everyday life and how a cryptographer uses mathematics.										
C. Read at least three articles (about three hours total) about physics, math,										
modeling, or cryptography. You may wish to read about how technology and										
engineering are changing sports equipment, how and why triangles are used in										
construction, bridge building, engineering, climate and/or weather models, how										
banks keep information secure, or about the stock market. Then do the following:										
1. Make a list of at least two questions or ideas from each article.		-								
2. Discuss two of the questions or ideas with your counselor.										
D. Do a combination of reading, watching, or researching (about three hours										
total). Then do the following:  1. Make a list of at least two questions or ideas from each article, website, or										
show.										
2. Discuss two of the questions or questions with your counselor.										
2. Complete ONE merit badge from the following list. (Choose one that you have										
not already used toward another Nova award.) After completion, discuss with										
your counselor how the merit badge you earned uses mathematics.										
American Business Orienteering										
Chess										
Personal Management										
Computers										
Radio										
Drafting										
Surveying										
Entrepreneurship										
Weather  Change TWO from A or Box Cox Dox F and complete All the requirements										
3. Choose TWO from A or B or C or D or E and complete ALL the requirements.										
(Write down your data and calculations to support your explanation to your										
counselor. You may use a spreadsheet. Do not use someone else's data or calculations.)										
A. Calculate your horsepower when you run up a flight of stairs.										
How does your horsepower compare to the power of a horse?										
2. How does your horsepower compare to the horsepower of your favorite car?										

Designed to Crunch! Patrol- Blue Pheonix	Chase Seeberger	Conner Godfrey	Conner Maxey	Dexter Siroky	Kyle Hardy	Luke Farrell	Sam Burch	Sean Taylor	Trey Oletski	Zane McClish
	ਹ	ၓ	Ö	De	Κ	Γn	Sa	Se	Ļ	Za
3. Discuss with your counselor:										
B. Attend at least two track, cross-country, or swim meets.  1. For each meet, time at least three racers. (Time the same racers at each										
meet.)										
2. Calculate the average speed of the racers you timed. (Make sure you write										
down your data and calculations.)										
3. Compare the average speeds of your racers to each other, to the official time,										
and to their times at the two meets you attended.										
4. Share your calculations with your counselor, and discuss your conclusions										
about the racers' strengths and weaknesses.										
C. Attend a soccer, baseball, softball, or basketball game. Choose two players and										
keep track of their efforts during the game. (Make sure you write down your data										
and calculations.) Calculate their statistics using the following as examples:										
Soccer—Goals, assists, corner kicks, keeper saves, fouls, offsides										
Soccer—Goals, assists, corner kicks, keeper saves, rouls, orisides     Baseball or softball—Batting average, runs batted in, fielding statistics,										
pitching statistics										
3. Basketball—Points, baskets attempted, rebounds, steals, turnovers, and										
blocked shots										
4. Share your calculations with your counselor, and discuss your conclusions										
about the players' strengths and weaknesses.										
D. Attend a football game or watch one on TV. (This is a fun activity to do with a										
parent or friend! ) Keep track of the efforts of your favorite team during the										
game. (Make sure you write down your data and calculations.) Calculate your										
team's statistics using the following as examples:										
1. Kicks/punts										
a. Kickoff—Kick return yards										
b. Punt—Number, yards										
c. Field goals—Attempted, percent completed, yards										
d. Extra point—Attempted, percent completed										
2. Offense										
a. Number of first downs										
b. Forward passes—Attempted, percent completed, total length of passes,										
longest pass, number and length of passes caught by each receiver, yardage										
gained by each receiver after catching a pass										
c. Running plays—Number, yards gained or lost for each run, longest run from										
scrimmage line, total yards gained or lost, and number of touchdowns										
3. Defense—Number of quarterback sacks, interceptions turnovers, and safeties										
3. Detense Manuscr of quarterback sucks, interceptions turnovers, and sureties										
4. Share your calculations with your counselor, and discuss your conclusions										
about your team's strengths and weaknesses.										
E. How starry are your nights? Participate in a star count to find out. This may be										
done alone but is more fun with a group. Afterward, share your results with your										
counselor.										
1. Visit NASA's Student Observation Network website at										
www.nasa.gov/audience/foreducators/son/energy/starcount/ for instructions										
on performing a star count.  2. Do a star count on five clear nights at the same time each night.										
3. Report your results on NASA's Student Observation Network website and see										
how your data compares to others.										
, 5 5. 5.5.5 55 p. 5. 55 5 6 51.0.0.										

Designed to Crunch! Patrol- Blue Pheonix	Chase Seeberger	Conner Godfrey	Conner Maxey	Dexter Siroky	Kyle Hardy	Luke Farrell	Sam Burch	Sean Taylor	Trey Oletski	Zane McClish
4. Do ALL of the following.										
A. Investigate your calculator and explore the different functions.										
B. Discuss the functions, abilities, and limitations of your calculator with your										
counselor. Talk about how these affect what you can and cannot do with a										
calculator. (See your counselor for some ideas to consider.)										
5. Discuss with your counselor how math affects your everyday life.										

Designed to Crunch I. Datrol. Bayon	Aaron Sauer	Brian Guiana	Cameron Uli	Chase Sullivan	oshua Lindgren	Mark Szobonya	Mathew Kemper	Ryan Morgan
Designed to Crunch! Patrol- Raven	Aa	Br	Ca	Сh	Jos	Ž	Ž	R
1. Choose A or B or C or D and complete ALL the requirements.								
A. Watch about three hours total math-related shows or documentaries that								
involve scientific models and modeling, physics, sports equipment design, bridge								
building, or cryptography. Then do the following:								
1. Make a list of at least five questions or ideas from the show(s) you watched.								
2. Discuss two of the questions or ideas with your counselor								
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. Then do the following:								
people wild worked extensively with cryptography. Then do the following.								
1. List and record the URLs of the websites you visited and the major topics								
covered on the websites you visited. (You may use the copy and paste								
function—eliminate the words—if you include your sources.)								
2. Discuss with your counselor how cryptography is used in the military and in								
everyday life and how a cryptographer uses mathematics.								
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C. Read at least three articles (about three hours total) about physics, math,								
modeling, or cryptography. You may wish to read about how technology and								
engineering are changing sports equipment, how and why triangles are used in								
construction, bridge building, engineering, climate and/or weather models, how								
banks keep information secure, or about the stock market. Then do the following:								
Make a list of at least two questions or ideas from each article.      Discuss two of the greating an idea with a great large.								
<ul><li>2. Discuss two of the questions or ideas with your counselor.</li><li>D. Do a combination of reading, watching, or researching (about three hours</li></ul>								
total). Then do the following:								
1. Make a list of at least two questions or ideas from each article, website, or								
show.								
2. Discuss two of the questions or questions with your counselor.								
2. Complete ONE merit badge from the following list. (Choose one that you have								
not already used toward another Nova award.) After completion, discuss with								
your counselor how the merit badge you earned uses mathematics.								
American Business								
Orienteering								
Chess								
Personal Management								
Computers								
Radio Drafting								
Surveying								
Entrepreneurship								
Weather								
3. Choose TWO from A or B or C or D or E and complete ALL the requirements.								
(Write down your data and calculations to support your explanation to your								
counselor. You may use a spreadsheet. Do not use someone else's data or								
calculations.)								
A. Calculate your horsepower when you run up a flight of stairs.								
1. How does your horsepower compare to the power of a horse?								
2. How does your horsepower compare to the horsepower of your favorite car?								
					L			

			1					
	Aaron Sauer	Brian Guiana	Cameron Uli	Chase Sullivan	oshua Lindgren	Mark Szobonya	Mathew Kemper	Ryan Morgan
Designed to Crunch! Patrol- Raven	Aar	Bria	Can	Cha	Jost	Mai	Mai	Rya
3. Discuss with your counselor:								
B. Attend at least two track, cross-country, or swim meets.								
1. For each meet, time at least three racers. (Time the same racers at each								
meet.)  2. Calculate the average speed of the racers you timed. (Make sure you write								
down your data and calculations.)								
3. Compare the average speeds of your racers to each other, to the official time,								
and to their times at the two meets you attended.								
4. Share your calculations with your counselor, and discuss your conclusions								
about the racers' strengths and weaknesses.								
C. Attend a soccer, baseball, softball, or basketball game. Choose two players and keep track of their efforts during the game. (Make sure you write down your data								
and calculations.) Calculate their statistics using the following as examples:								
and calculations.) Calculate their statistics using the following as examples.								
1. Soccer—Goals, assists, corner kicks, keeper saves, fouls, offsides								
2. Baseball or softball—Batting average, runs batted in, fielding statistics,								
pitching statistics								
3. Basketball—Points, baskets attempted, rebounds, steals, turnovers, and								
blocked shots  4. Share your calculations with your counselor, and discuss your conclusions								
about the players' strengths and weaknesses.								
D. Attend a football game or watch one on TV. (This is a fun activity to do with a								
parent or friend! ) Keep track of the efforts of your favorite team during the								
game. (Make sure you write down your data and calculations.) Calculate your								
team's statistics using the following as examples:								
1. Kicks/punts								
a. Kickoff—Kick return yards								
b. Punt—Number, yards								
c. Field goals—Attempted, percent completed, yards								
d. Extra point—Attempted, percent completed								
2. Offense a. Number of first downs								
b. Forward passes—Attempted, percent completed, total length of passes,								
longest pass, number and length of passes caught by each receiver, yardage								
gained by each receiver after catching a pass								
c. Running plays—Number, yards gained or lost for each run, longest run from								
scrimmage line, total yards gained or lost, and number of touchdowns								
3. Defense—Number of quarterback sacks, interceptions turnovers, and safeties								
5. Detense—Muniber of quarterback sacks, interceptions turnovers, and safeties								
4. Share your calculations with your counselor, and discuss your conclusions								
about your team's strengths and weaknesses.								
E. How starry are your nights? Participate in a star count to find out. This may be								
done alone but is more fun with a group. Afterward, share your results with your								
counselor.  1. Visit NASA's Student Observation Network website at								
www.nasa.gov/audience/foreducators/son/energy/starcount/ for instructions								
on performing a star count.								
2. Do a star count on five clear nights at the same time each night.								
3. Report your results on NASA's Student Observation Network website and see								
how your data compares to others.								

Designed to Crunch! Patrol- Raven	Aaron Sauer	Brian Guiana	Cameron Uli	Chase Sullivan	Joshua Lindgren	Mark Szobonya	Mathew Kemper	Ryan Morgan
4. Do ALL of the following.								
A. Investigate your calculator and explore the different functions.								
B. Discuss the functions, abilities, and limitations of your calculator with your								
counselor. Talk about how these affect what you can and cannot do with a								
calculator. (See your counselor for some ideas to consider.)								
5. Discuss with your counselor how math affects your everyday life.								

Designed to Crunch! Patrol- Troll  1. Choose A or B or C or D and complete ALL the requirements.  A. Watch about three hours total math-related shows or documentaries that involve scientific models and modelling, physics, sports equipment design, bridge building, or cryotography. Then do the following:  1. Make a list of at least five questions or ideas from the show(s) you watched.  2. Discuss two of the questions or ideas with your counselor and the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited and the major topics covered on the websites you visited and the major topics covered on the websites you visited and the major topics covered on the websites you visited and the major topics covered on the websites you visited. Flow may use the copy and paste function—eliminate the words—if you include your sources.  2. Discuss with your counselor how cryotography. Then do the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited. Flow may use the copy and paste function—eliminate the words—if you include your sources.  2. Discuss with your counselor how cryotography is used in the military and in everyday life and how a cryotographer uses mathematics.  C. Read at least three articles (about three hours total) about physics, math, modelling, or cryotography. You may wish to read about how technology and engineering are changing sports equipment, how and why triangles are used in construction, bridge building, engineering, climate and/or weather models, how banks keep information secure, or about the stock market. Then do the following:  1. Make a list of at least two questions or ideas with your counselor.  2. Discuss two of the questions or ideas with your counselor.  3. Chouses two of the questions or guestions with your counselor.  4. And the properties of the provided p													
1. Choose A or B or C or D and complete ALL the requirements.  A Watch about three hours total math-related shows or documentaries that involve scientific models and modeling, physics, sports equipment design, bridge buildine, or croatography. Then do the followling:  1. Make a list of at least five questions or ideas from the show(s) you watched.  2. Discuss two of the questions or ideas with your counselor  8. 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. Then do the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited. (You may use the copy and paste function—eliminate the words—if you include your sources.)  2. Discuss with your counselor how cryptography is used in the military and in everyday life and how a cryptographer uses mathematics.  C. Read at least three articles (about three hours total) about physics, math, modeling, or cryptography. You may wish to read about how technology and engineering are changing sports equipment, how and why triangles are used in construction, bridge building, engineering, climate and/or weather models, how banks keep information secure, or about the stock market. Then do the following:  1. Make a list of at least two questions or ideas from each article.  2. Discuss two of the questions or ideas with your counselor.  2. Complete ONE merit badge from the following list. (Choose one that you have not already used toward another Nova award.) After completion, discuss with your counselor how the merit badge you earned use mathematics.  American Business  Orienteering  Chess  Personal Management  Computers  3. Choose TWO from A or B or C or D or E and complete ALL the requirements.  Wirtle down your data and calculations to support your explanation to your counselor. You may use a spreadsheet. Do not use someone else's data or calculations.)  1.	Designed to Crunch! Patrol- Troll	Braden Dykstra	Braeden Chadwell	Brandon Derr	Brandon Foster	Gavin Culbertson	Hunter Sparks	Jack Akers	Jake Kerby	Jared Kerby	Jonathan Porter	Mason Cheney	Michael George
A. Watch about three hours total math-related shows or documentaries that involve scientific models and modeling, physics, sports equipment design, bridge huilding or crocatography. Then do the following:  1. Make a list of at least five questions or ideas with your counselor people who worked extensively with cryptography or the discoveries of people who worked extensively with cryptography. Then do the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited. (You may use the copy and paste function—eliminate the words—if you include vour sources.)  2. Discuss with your counselor how cryptography is used in the military and in everyday life and how a cryptographer uses mathematics.  C. Read at least three articles (about three hours total) about physics, math, modeling, or cryptography. You may wish to read about how technology and engineering are changing sports equipment, how and why triangles are used in construction, bridge building, engineering, climate and/or weather models, how banks keep information secure, or about the stock market. Then do the following:  1. Make a list of at least two questions or ideas from each article.  2. Discuss two of the questions or ideas with your counselor.  D. Do a combination of reading, watching, or researching (about three hours total). Then do the following:  1. Make a list of at least two questions or ideas from each article, website, or show.  2. Discuss two of the questions or questions with your counselor.  D. Do a combination of reading, watching, or researching (about three hours total). Then do the following:  1. Make a list of at least two questions or ideas from each article, website, or show.  2. Discuss two of the questions or questions with your counselor.  2. Discuss two of the questions or questions with your counselor.  2. Discuss two of the questions or questions or ideas from each article, website, or show.  3. Choose two work of the power of a horse?  3. Choose two forms of the powe	1. Choose A or B or C or D and complete ALL the requirements.								Ĺ	Í			
building, or cryotography. Then do the following:  1. Make a list of at least five questions or ideas with your counselor  8. 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. Then do the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited. (You may use the copy and paste function—eliminate the words—if you include your sources.)  2. Discuss with your counselor how cryptography is used in the military and in everyday life and how a cryptographer uses mathematics.  C. Read at least three articles (about three hours total) about physics, math, modeling, or cryptography. You may wish to read about how technology and engineering are changing sports equipment, how and why triangles are used in construction, bridge building, engineering, climate and/or weather models, how banks keep information secure, or about the stock market. Then do the following:  1. Make a list of at least two questions or ideas from each article.  2. Discuss two of the questions or ideas with your counselor.  D. Do a combination of reading, watching, or researching (about three hours total). Then do the following:  1. Make a list of at least two questions or ideas from each article, website, or show.  2. Discuss two of the questions or questions with your counselor.  2. Complete ONE merit badge from the following list. (Choose one that you have not already used toward another Nova award.) After completion, discuss with your counselor how the merit badge you earned uses mathematics.  American Business  Orienteering Chess American Business  Orienteering Chess American Business  Orienteering Chess Accounter of the properties of the power of a horse?  In they does your horsepower when you run up a flight of stairs.  A. Calculator your horsepower compare to the power of a horse?													
building, or cryotography. Then do the following:  1. Make a list of at least five questions or ideas with your counselor  8. 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. Then do the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited. (You may use the copy and paste function—eliminate the words—if you include your sources.)  2. Discuss with your counselor how cryptography is used in the military and in everyday life and how a cryptographer uses mathematics.  C. Read at least three articles (about three hours total) about physics, math, modeling, or cryptography. You may wish to read about how technology and engineering are changing sports equipment, how and why triangles are used in construction, bridge building, engineering, climate and/or weather models, how banks keep information secure, or about the stock market. Then do the following:  1. Make a list of at least two questions or ideas from each article.  2. Discuss two of the questions or ideas with your counselor.  D. Do a combination of reading, watching, or researching (about three hours total). Then do the following:  1. Make a list of at least two questions or ideas from each article, website, or show.  2. Discuss two of the questions or questions with your counselor.  2. Complete ONE merit badge from the following list. (Choose one that you have not already used toward another Nova award.) After completion, discuss with your counselor how the merit badge you earned uses mathematics.  American Business  Orienteering Chess American Business  Orienteering Chess American Business  Orienteering Chess Accounter of the properties of the power of a horse?  In they does your horsepower when you run up a flight of stairs.  A. Calculator your horsepower compare to the power of a horse?	involve scientific models and modeling, physics, sports equipment design, bridge												
2. Discuss two of the questions or ideas with your counselor 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. The not the following:  1. List and record the URLs of the websites you visited and the major topics covered on the websites you visited. (You may use the copy and paste function—eliminate the words—if you include your sources.]  2. Discuss with your counselor how cryptography is used in the military and in everyday life and how a cryptographer uses mathematics.  C. Read at least three articles (about three hours total) about physics, math, modeling, or cryptography. You may wish to read about how technology and engineering are changing sports equipment, how and why triangles are used in construction, bridge building, engineering, climate and/or weather models, how banks keep information secure, or about the stock market. Then do the following:  1. Make a list of at least two questions or ideas from each article.  2. Discuss two of the questions or ideas from each article, website, or show.  2. Discuss two of the questions or ideas from each article, website, or show.  2. Discuss two of the questions or questions with your counselor.  2. Complete ONE merit badge from the following list. (Choose one that you have not already used toward another Nova award.) After completion, discuss with your counselor how the merit badge you earned uses mathematics.  American Business  Onenteering  Chess  Personal Management  Computers  Radio  Drafting  Surveying  Interpreneurship  Weather  3. Choose TWO from A or B or C or D or E and complete ALL the requirements.  (Write down your data and calculations to support your explanation to your counselor. You may use a spreadsheet. Do not use someone else's data or calculations.)  A. Calculate your horsepower when you run µ a flight of stairs.													
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Designed to Crunch! Patrol- Troll	Braden Dykstra	Braeden Chadwell	Brandon Derr	Brandon Foster	Gavin Culbertson	Hunter Sparks	Jack Akers	lake Kerby	lared Kerby	Jonathan Porter	Mason Cheney	Michael George
3. Discuss with your counselor:					)				_			_
B. Attend at least two track, cross-country, or swim meets.												
1. For each meet, time at least three racers. (Time the same racers at each												
meet.)												
2. Calculate the average speed of the racers you timed. (Make sure you write												
down your data and calculations.)												
3. Compare the average speeds of your racers to each other, to the official time												
and to their times at the two meets you attended.  4. Share your calculations with your counselor, and discuss your conclusions	1											
about the racers' strengths and weaknesses.												
C. Attend a soccer, baseball, softball, or basketball game. Choose two players and												
keep track of their efforts during the game. (Make sure you write down your data												
and calculations.) Calculate their statistics using the following as examples:												
1. Soccer—Goals, assists, corner kicks, keeper saves, fouls, offsides												
2. Baseball or softball—Batting average, runs batted in, fielding statistics,												
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4. Share your calculations with your counselor, and discuss your conclusions												
about the players' strengths and weaknesses.												
D. Attend a football game or watch one on TV. (This is a fun activity to do with a												
parent or friend! ) Keep track of the efforts of your favorite team during the												
game. (Make sure you write down your data and calculations.) Calculate your												
team's statistics using the following as examples:												
1. Kicks/punts												
a. Kickoff—Kick return yards												
b. Punt—Number, yards												
c. Field goals—Attempted, percent completed, yards												
d. Extra point—Attempted, percent completed												
2. Offense												
a. Number of first downs	-											
b. Forward passes—Attempted, percent completed, total length of passes,												
longest pass, number and length of passes caught by each receiver, yardage gained by each receiver after catching a pass												
c. Running plays—Number, yards gained or lost for each run, longest run from	1											
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3. Defense—Number of quarterback sacks, interceptions turnovers, and safeties	;  <u> </u>											
4. Share your calculations with your counselor, and discuss your conclusions												
about your team's strengths and weaknesses.												
E. How starry are your nights? Participate in a star count to find out. This may be												
done alone but is more fun with a group. Afterward, share your results with your												
counselor.  1. Visit NASA's Student Observation Network website at												
www.nasa.gov/audience/foreducators/son/energy/starcount/ for instructions on performing a star count.												
<ol> <li>Do a star count on five clear nights at the same time each night.</li> </ol>												
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B. Discuss the functions, abilities, and limitations of your calculator with your												
counselor. Talk about how these affect what you can and cannot do with a												
calculator. (See your counselor for some ideas to consider.)												
5. Discuss with your counselor how math affects your everyday life.												

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	Aaron Northup	CJ Hamann	Claiborne	Koby Wheeler	Mathew Thompson	Thomas Hunt	Tim Brackus	Wesley Runner
Designed to Crunch! Patrol- Viper	Aar	H C		(ob	Mat	ГҺо	Гim	۷e
1. Choose A or B or C or D and complete ALL the requirements.								
A. Watch about three hours total math-related shows or documentaries that								
involve scientific models and modeling, physics, sports equipment design, bridge								
building, or cryptography. Then do the following:								
1. Make a list of at least five questions or ideas from the show(s) you watched.								
2.5:								
2. Discuss two of the questions or ideas with your counselor								
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. Then do the following:								
people who worked extensively with cryptography. Then do the following.								
1. List and record the URLs of the websites you visited and the major topics								
covered on the websites you visited. (You may use the copy and paste								
function—eliminate the words—if you include your sources.)								
2. Discuss with your counselor how cryptography is used in the military and in								
everyday life and how a cryptographer uses mathematics.								
C. Read at least three articles (about three hours total) about physics, math,								
modeling, or cryptography. You may wish to read about how technology and								
engineering are changing sports equipment, how and why triangles are used in								
construction, bridge building, engineering, climate and/or weather models, how								
banks keep information secure, or about the stock market. Then do the following:								
1. Make a list of at least two questions or ideas from each article.								
2. Discuss two of the questions or ideas with your counselor.								
D. Do a combination of reading, watching, or researching (about three hours								
total). Then do the following:								
1. Make a list of at least two questions or ideas from each article, website, or								
show.								
<ol> <li>Discuss two of the questions or questions with your counselor.</li> <li>Complete ONE merit badge from the following list. (Choose one that you have</li> </ol>								
not already used toward another Nova award.) After completion, discuss with								
your counselor how the merit badge you earned uses mathematics.								
your counselor now the ment budge you carned uses mathematics.								
American Business								
Orienteering								
Chess								
Personal Management								
Computers								
Radio								
Drafting								
Surveying Entrepreneurship								
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