



Cub Day Camp STEM / Nova 1-2-3 Go! Award

This year at OCBSA Cub Day Camp Cub Scouts will be working on the BSA STEM / Nova Award 1-2-3 Go! This award explores how math, physics, and science play a part in our everyday lives. Unfortunately, due to time constraints we will not be able to complete all of the requirements, so your Cub Scout will receive a partial. Which they can complete at home after Cub Day Camp, then meeting with a OCBSA STEM / Nova Counselor to earn the award. If you wish for your Cub Scout to earn the award while at Cub Day Camp, then they can complete this requirement before they come to Cub Day Camp. That will allow for your Cub Scout to meet with an OCBSA STEM / Nova Counselor at Cub Day Camp, and complete the award. Below is the requirement they need to complete to earn the award.

BSA STEM / Nova 1-2-3 Go! Requirement #1

Choose A or B or C and complete ALL the requirements.

A. Watch an episode or episodes (about one hour total) of a show that involves math or physics.

Then do the following:

- (1) Make a list of at least two questions or ideas from what you watched.
- (2) Discuss two of the questions or ideas with your counselor.

B. Read (about one hour total) about anything that involves math or physics. Then do the following:

- (1) Make a list of at least two questions or ideas from what you read.
- (2) Discuss two of the questions or ideas with your counselor.

C. Do a combination of reading and watching (about one hour total) about anything that involves math or physics. Then do the following:

- (1) Make a list of at least two questions or ideas from what you read and watched.
- (2) Discuss two of the questions or ideas with your counselor.

To assist you with this requirement, I have attached a list of books that your Cub Scout can pick from to read, a list of PBS Nova programs that your Cub Scout could watch, and a list of YouTube videos they can pick from to watch. You should note that YouTube videos contain adds, and the time spent watching adds does not count towards their 1 hour. Please ensure that whatever combination of reading and / or watching your Cub Scout does is approximately 1 hour. Since Cub Day Camp includes youth from 2nd to 6th grade some of the material listed on the attached list may be beyond your Cub Scout's level. So be sure to check out each item to ensure that the material is at your Cub Scout's level. Please make sure that your Cub Scout has your permission if they will be using a computer on the internet to work on this assignment. Also, these lists are not an inclusive listing of everything your Cub Scout can pick from, but are meant to be a guide. So, if there is something else that you have or know of that meets the requirement, then your Cub Scout can read or watch that. If your Cub Scout completes this requirement before Cub Day Camp, then please make sure that they bring their two questions to camp and inform us of what they have read or viewed. So that we can complete the discussion of the question at Cub Day Camp.



Cub Day Camp 1-2-3 Go Nova Award Suggested Reading List

1. **My First Book About Physics (Paperback)** by [Patricia J. Wynne](#) (Author), [Donald M. Silver](#) (Author)
2. **Physics for Curious Kids: An Illustrated Introduction to Energy, Matter, Forces, and Our Universe! (Curious Kids, 4)** by [Laura Baker](#) (Author), [Alex Foster](#) (Illustrator)
3. **Math for Curious Kids: An Illustrated Introduction to Numbers, Geometry, Computing, and More! (Curious Kids, 3)** by Lynn Huggins-Cooper (Author)
4. **Simple Machines!: With 25 Science Projects for Kids (Explore Your World)** by [Anita Yasuda](#) (Author), [Bryan Stone](#) (Illustrator)
5. **Simple Machines: Wheels, Levers, and Pulleys** by [David A. Adler](#) (Author), [Anna Raff](#) (Illustrator)
6. **Pull, Lift, and Lower: A Book About Pulleys (Amazing Science: Simple Machines)** by [Michael Dahl](#) (Author), [Denise Shea](#) (Illustrator)
7. **Quantum Physics for Smart Kids: A Little Scientist's Guide to Atoms, Molecules, Matter, and More** by Carlos Pazos (Author)
8. **Space for Smart Kids: A Little Scientist's Guide to Astronauts, Gravity, Rockets, and the Atmosphere (1) (Future Geniuses)** by [Carlos Pazos](#) (Author)
9. **I Can Be a Math Magician: Fun STEM Activities for Kids (Dover Science For Kids)** by [Anna Claybourne](#) (Author)
10. **I Can Be a Science Detective: Fun STEM Activities for Kids (Dover Science For Kids)** by [Claudia Martin](#) (Author)
11. **Energy: Physical Science for Kids** by [Andi Diehn](#) (Author), [Hui Li](#) (Illustrator)
12. **Forces: Physical Science for Kids** by [Andi Diehn](#) (Author), [Hui Li](#) (Illustrator)
13. **Waves: Physical Science for Kids** by [Andi Diehn](#) (Author), [Hui Li](#) (Illustrator)
14. **Matter: Physical Science for Kids** by [Andi Diehn](#) (Author), [Hui Li](#) (Illustrator)
15. **My First Book About Engineering: An Awesome Introduction to Robotics & Other Fields of Engineering (Dover Science For Kids Coloring Books)** by [Patricia J. Wynne](#) (Author), [Donald M. Silver](#) (Author), [Ariel Fleming](#) (Author)
16. **Gravity Is a Mystery (Let's-Read-and-Find-Out Science 2)** by [Dr. Franklyn M. Branley](#) (Author), [Edward Miller](#) (Illustrator)
17. **Forces Make Things Move (Let's-Read-and-Find-Out Science 2)** by [Kimberly Bradley](#) (Author), [Paul Meisel](#) (Illustrator)



18. **I Can Be a Science Detective: Fun STEM Activities for Kids (Dover Science For Kids)** by Claudia Martin
19. **The Mysteries of the Universe: Discover the best-kept secrets of space (DK Children's Anthologies)** by [Will Gater](#) (Author)
20. **What Is Physics?** by [Rebecca Woodbury PH D](#) (Author)
21. **Move It!: Motion, Forces and You (Primary Physical Science)** by [Adrienne Mason](#) (Author), [Claudia Dávila](#) (Illustrator)
22. **Solar System for Kids: A Junior Scientist's Guide to Planets, Dwarf Planets, and Everything Circling Our Sun** by [Hilary Statum](#) (Author)
23. **Let's Get Moving!: Newtonian Physics for Kids Explained through Everyday Examples** by [Chris Ferrie](#) (Author)
24. **The Speed of Starlight: An Exploration of Physics, Sound, Light, and Space** by [Colin Stuart](#) (Author), [Ximo Abadia](#) (Illustrator)
25. **The Language of the Universe: A Visual Exploration of Mathematics** by [Colin Stuart](#) (Author), [Ximo Abadia](#) (Illustrator)
26. **What's the Point of Math? (DK What's the Point of?)** by [DK](#) (Author)
27. **Electricity and Magnetism (Science for Smart Kids)** by [Colleen kessler](#) (Author)
28. **10 Days of Nuclear Science How It Works and Activities: Science Book For Kids** by [Scitenberg Kids](#) (Author), [Dr. Ref](#) (Author)
29. **10 Days of Space Facts & Activities: Science Book For Kids** by [Dr. Ref](#) (Author)
30. **Light (A True Book: Physical Science) (A True Book (Relaunch))** by [Jo S. Kittinger](#) (Author)
31. **How Airplanes Get from Here . . . to There!: Ready-to-Read Level 3 (Science of Fun Stuff)** by [Jordan D. Brown](#) (Author), [Mark Borgions](#) (Illustrator)
32. **Energy (A True Book: Physical Science)** by [Jacob Batchelor](#) (Author)
33. **Primary Physics: The principles behind Leonardo's science** by [Marti Ellen](#) (Author), [Andrew Davies](#) (Illustrator)
34. **Can You Feel the Force? (Big Questions)** by [Richard Hammond](#) (Author)
35. **Physics, Pre-Level 1 (Real Science-4-Kids)** by [Rebecca W Keller](#) (Author), [Janet Moneymaker](#) (Illustrator)



CBSA Cub Day Camp 1-2-3 Go Nova Award Suggested Watch List

1. Zero to Infinity - NOVA: Season 49, Episode 18
2. Ultimate Space Telescope - NOVA: Season 49, Episode 10
3. NOVA Universe Revealed: Big Bang - NOVA: Season 48, Episode 21
4. NOVA Universe Revealed: Milky Way - NOVA: Season 48, Episode 18
5. Rise of the Rockets - NOVA: Season 46, Episode 5
6. Apollo's Daring Mission - NOVA: Season 45, Episode 17
7. Flying Supersonic - NOVA: Season 45, Episode 13
8. Search for the Super Battery - NOVA: Season 44, Episode 3
9. The Great Math Mystery - NOVA: Season 42, Episode 17
10. Big Bang Machine - NOVA: Season 42, Episode 1
11. First Man on the Moon - NOVA: Season 41, Episode 23
12. At the Edge of Space - NOVA: Season 40, Episode 23
13. The Fabric of the Cosmos: Universe or Multiverse? - NOVA: Season 38, Episode 19
14. The Fabric of the Cosmos: Quantum Leap - NOVA: Season 38, Episode 18
15. The Fabric of the Cosmos: The Illusion of Time - NOVA: Season 38, Episode 17
16. The Fabric of the Cosmos: What Is Space? - NOVA: Season 38, Episode 16
17. Hunting the Edge of Space: The Ever Expanding Universe - NOVA: Season 37, Episode 9
18. Hunting the Edge of Space: The Mystery of the Milky Way - NOVA: Season 37, Episode 8
19. Newton's Dark Secrets - NOVA: Season 32, Episode 19
20. Origins: Back to the Beginning - NOVA: Season 31, Episode 14
21. The Elegant Universe: The String's the Thing - NOVA: Season 30, Episode 13
22. The Elegant Universe: Einstein's Dream - NOVA: Season 30, Episode 12



23. Galileo's Battle for the Heavens - NOVA: Season 29, Episode 12
24. STEM - What is it and why is it important?:
https://www.youtube.com/watch?v=fH5iLx_jCUk
25. What is STEM | Introduction to STEM | STEM for kids:
<https://www.youtube.com/watch?v=dRsZX6i9Y2M>
26. What is ARTIFICIAL INTELLIGENCE?:
<https://www.youtube.com/watch?v=HdlppwUJ0f8>
27. Eureka Math Grade 2 Module 6 Lesson 19 – Investigating Odd & Even Patterns:
https://www.youtube.com/watch?v=i57LwC_Mino
28. What are Computer Programs? | Early Elementary | Kodable:
<https://www.youtube.com/watch?v=J12LbISKz-0>
29. What are Computer Programs? | Late Elementary | Kodable:
https://www.youtube.com/watch?v=m-cgqh_li04
30. What is Sequence? | Coding for Kids | Kodable:
https://www.youtube.com/watch?v=v_Pc3UnePZY
31. What are Conditions? | Coding for Kids | Kodable:
<https://www.youtube.com/watch?v=dJYIRcsdHWg>
32. What is Physics?:
<https://www.youtube.com/watch?v=yWMKYID5fr8>
33. Time Dilation - Einstein's Theory Of Relativity Explained!:
<https://www.youtube.com/watch?v=yuD34tEpRFw>
34. The Map of Physics:
<https://www.youtube.com/watch?v=ZihytixUYo>
35. The Map of Engineering:
<https://www.youtube.com/watch?v=pQgxiQAMTTo>
36. Why Do Computers Use 1s and 0s? Binary and Transistors Explained:
<https://www.youtube.com/watch?v=Xpk67YzOn5w>
37. Map of Computer Science:
https://www.youtube.com/watch?v=SzJ46YA_RaA
38. Electricity for Kids | What is Electricity? Where does Electricity come from?:
<https://www.youtube.com/watch?v=Dx3RpXdJw2k>



39. What is Force? | Contact Force and Non-Contact Force | Science Lesson for Kids:
<https://www.youtube.com/watch?v=LlwqZQOnMKc>
40. Newton's 3 Laws of Motion for Kids: Three Physical Laws of Mechanics for Children:
https://www.youtube.com/watch?v=aA_mqSzbkM0
41. The Science of Light and Color for Kids: Rainbows and the Electromagnetic Spectrum:
<https://www.youtube.com/watch?v=9Vsl0lom3S0>
42. Introduction to Gravity for Children: Gravity, Weight, and Mass for Kids:
<https://www.youtube.com/watch?v=L1Xw9QMxaiQ>
43. All About Stars for Kids: Astronomy and Space for Children:
<https://www.youtube.com/watch?v=PeNuj2GH8xg>
44. What Is An Atom?:
https://www.youtube.com/watch?v=jMW_0Ro6b5c
45. How Does An Airplane Fly? | Evolution Of Planes:
<https://www.youtube.com/watch?v=aKNrX2d-who>
46. How Does An Airplane Fly? | Evolution Of Planes:
<https://www.youtube.com/watch?v=aKNrX2d-who>
47. Make your own Cipher Wheel!:
<https://www.youtube.com/watch?v=skgfgls1m-Y>
48. How To Write Secret Codes Using Ciphers!:
<https://www.youtube.com/watch?v=W-2eh66-lIk>
49. The Map of Mathematics:
<https://www.youtube.com/watch?v=OmJ-4B-mS-Y>
50. The Map of Chemistry:
<https://www.youtube.com/watch?v=P3RXtoYCW4M>
51. The Basic Structure of the Atom | Chemistry and Our Universe: How it All Works:
<https://www.youtube.com/watch?v=Ml1bk9wDXVo>
52. The 4 Tectonic Plate Boundaries and the Hazards they Create:
<https://www.youtube.com/watch?v=oCPjgv2Pccc>
53. Ax-2 launch and Falcon 9 first stage landing:
<https://www.youtube.com/watch?v=1TiBsc6CcUE>
54. The Beginning of Everything – The Big Bang:
<https://www.youtube.com/watch?v=wNDGgL73ihY>
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