

Dr. Charles H. Townes**Cub Scout Supernova Award Guide Sheets**

Scout's Name: _____

Unit: _____

Supernova Mentor's Name: _____

Supernova Mentor's Phone No.: _____

These guide sheets can guide you through completing the Dr. Charles Townes Supernova Award, but for full reference, please read the Cub Scout Nova Awards Guidebook. You can download a copy of the *Guide to Advancement* from <http://www.scouting.org/filestore/pdf/33088.pdf>. No one may add or subtract from the official requirements found in the Cub Scout Nova Awards Guidebook (Pub. 34032 – SKU 614935).

Use of these guide sheets are not required, but it is suitable for organizing your thoughts and tracking the appropriate documentation that is required to be submitted to the STEM committee. Per the Supernova Award Application, the candidate states that *"I am submitting this application, with all required signatures and approvals, along with copies of my reports and other appropriate documentation, for consideration."*

You should use the spaces provided for each requirement to keep track of what has been completed, and to make notes for discussions with your mentor.

If a requirement says that you must take an action using words such as "do", "discuss", "show", "tell", "explain", "demonstrate", "identify", etc., that is what you must do.

It is recommended that you earn at least two of the eleven Nova awards for Cub Scouts before earning the Dr. Charles Townes Supernova Award.

Current Novas:

Science	Technology	Engineering	Math
Science Everywhere Down and Dirty Nova Wild Out of This World Uncovering the Past	Tech Talk Cub Scouts Can Code	Swing Up and Away	1-2-3 Go! Fearful Symmetry

1. **Complete** three of the following requirements below:

• Webelos: Adventures in Science

Completion Date: ____/____/____

Copy of Advancement Report attached on page(s) ____ below.

• Webelos : Engineer

Completion Date: ____/____/____

Copy of Advancement Report attached on page(s) ____ below.

• Option A -- Do all of the following:

i. **Construct** one of the following from wood, and one from another **material**:

- | | |
|----------------------|------------------------------------|
| — Book rack, | — Napkin holder, |
| — Shelf, | — Garden tool rack, |
| — Bulletin board, | — Lid holder, |
| — Tie rack, | — Mailbox, |
| — Letter holder, | — Birdhouse, |
| — Notepad holder, | — Desk nameplate, |
| — Toolbox, | — Letter, bill, and pencil holder, |
| — Towel rack, | — Bread box, |
| — Recipe holder, | — Key rack, |
| — Lamp stand, | — Measuring cup rack, |
| — Kitchen knife rack | — Measuring spoon rack |

Completion Date: ____/____/____

Pictures of objects constructed are attached on page(s) ____ below.

ii. **Keep** an “insect zoo” with insects that you have collected. You might have crickets, ants, or grasshoppers. **Study** them for a while **then release** them. **Share** your experience with your den or your Mentor.

Completion Date: ____/____/____

I, as the Supernova Mentor, have talked to _____ about their “insect zoo” and what they learned.

iii. With adult supervision, **show** how to check the oil level and tire pressure on a car.

Completion Date: ____/____/____

• Option B -- Do all of the following:

i. **Take** a field trip to a geological site, geological laboratory, or rock show.

Discuss what you learned at an upcoming den meeting with your mentor.

Completion Date: ____/____/____

I, as the Supernova Mentor, have talked to _____ about their field trip and what they learned.

ii. **Construct** a simple working electrical circuit using a flashlight battery, a switch and a light.

Completion Date: ____/____/____

iii. **Do** five activities within your home or school that require the use of mathematics.

Explain to your den or your Mentor how you use math every day.

Completion Date: ____/____/____

*I, as the Supernova Mentor, have talked to _____
on how they use math every day.*

2. **Complete three (3) of the following adventures below:**

- **Webelos Elective: Build It**

Completion Date: ____/____/____

Copy of Advancement Report attached on page(s) ____ below.

- **Webelos Core Adventure: First Responder**

Completion Date: ____/____/____

Copy of Advancement Report attached on page(s) ____ below.

- **Webelos Core Elective: Into the Wild**

Completion Date: ____/____/____

Copy of Advancement Report attached on page(s) ____ below.

- **Option A -- Do two(2) of the following:**

- i. **Go** on a geocaching adventure with your den or family. **Show** how you used a GPS unit or a smartphone with a GPS application to **locate** a geocache.

Completion Date: ____/____/____

Pictures of geocache adventure are attached on page(s) ____ below.

- ii. **Describe** both the benefits and the harm wildfires can cause in a forest ecosystem. **Tell** how you can prevent wildfire.

Completion Date: ____/____/____

*I, as the Supernova Mentor, have talked to _____
about the benefits and harm of wildfires.*

- iii. **Set up** an aquarium or terrarium. **Keep** it for at least a month.

Completion Date: ____/____/____

Pictures of aquarium or terrarium are attached on page(s) ____ below.

- **Option B -- Do all of the following:**

- i. With adult supervision, **build** and **launch** a model rocket. **Describe** how Newton's third law of motion explains how the rocket is propelled into the sky.

Completion Date: ____/____/____

Pictures of rocket building and launching are attached on page(s) ____ below.

*I, as the Supernova Mentor, have talked to _____
about Newton's third law of motion.*

- ii. While on a campout or night hike, **identify** five constellations or satellites in the night sky.

Completion Date: ____/____/____

*I, as the Supernova Mentor, have talked to _____
about their five constellations.*

3. **Research** (keep notes, write summary) interesting facts about Dr. Charles H. Townes using resources in your school, library or on the Internet (with your parent's or guardian's permission and guidance). **Then discuss** what you learn with your mentor, **including** answers to the following questions

- What very important award did Dr. Townes earn?
- What was Dr. Townes' most famous invention?

Completion Date: _____/_____/_____

Pictures of Dr. Charles H. Townes notes are attached on page(s) ____ below.

4. **Research** (keep notes, write summary) five other famous scientists, technology innovators, engineers, or mathematicians approved by your mentor. **Then discuss** what you learned with your mentor

1. _____
2. _____
3. _____
4. _____
5. _____

Completion Date: _____/_____/_____

I, as the Supernova Mentor, have talked to _____

about the (5) scientists, technologist, engineers or mathematicians and they have provided me relevant information about them.

5. **Speak** with your teacher(s) at school (or your parents if you are home-schooled) OR one of your Cub Scout leaders about your interest in earning the Webelos Scout Supernova award. **Ask** them why they think math and science are important in your education. **Discuss** this activity with your mentor.

Completion Date: _____/_____/_____

Person who was spoken to: _____

I, as the Supernova Mentor, have talked to _____ about the person that they talked to and what they learned from their discussion.

6. **Participate** (keep notes, write summary) in a science project or experiment in your classroom or school OR do a special science project approved by your teacher. Discuss this activity with your mentor.

Completion Date: _____/_____/_____

Science Experiment Done: _____

I, as the Supernova Mentor, have talked to _____ about their science project or experiment.

Pictures of science presentation board/setup and scout working on experiment are attached on page(s) ____ below.

7. **Do ONE of the following:**

- Visit with someone who works in a STEM-related career.

Completion Date: _____/_____/_____

Person who was spoken to: _____
 I, as the Supernova Mentor, have talked to _____
 about the person that they talked to and what they learned from their discussion.
 Photos of Meeting attached on page(s) _____ below.

- B. Learn about a career that depends on knowledge about science, technology, engineering, or mathematics.

Completion Date: ____/____/____

Career: _____

I, as the Supernova Mentor, have talked to _____
 about the career researched and what they learned about it.

8. Under the direct supervision of your mentor, **do** any experiment that shows how the scientific method (or scientific process) is used. **Discuss** this with your mentor, and include a simple demonstration to show what you learned.

Completion Date: ____/____/____

Written notes or report on what was learned about scientific methods and pictures of the experiment done are attached on page(s) _____ below.

I, as the Supernova Mentor, have talked to _____ about the experiment demonstrated.

9. Participate in a Nova- or other STEM-related activity in your Cub Scout den or pack meeting that is conducted by a Boy Scout or Venturer who is working on his or her Supernova award. If this is not possible, participate in another Nova- or STEM-related activity in your den, pack meeting, or event facilitated by your district or council.

Completion Date: ____/____/____

Written notes or pictures of the event attended are attached on page(s) _____ below.

10. Submit an application for the Cub Scout Supernova award to the to the Council STEM Committee with all supporting documentation including this completed guide. This application can be found at: <https://filestore.scouting.org/filestore/STEM/pdf/SupernovaApplication.pdf>

NOTES:

For each requirement, checkbox On the pages that follow please provide the supporting documents by uploading a photo or pdf to each page. As you update the documents, update the pages numbers above to correlate with the requirement.