Cub Scout Submission Package for STEM-NOVA Program

Scout Name: _____

Scout Address: _____

Scout Phone #: _____

Scout E-mail: _____

Scout Current Rank: _____

Scout Pack #: _____

Mentor/Counselor: _____

Mentor/Counselor Signature: _____

Date: _____

Please check the boxes that have been completed for the NOVA tasks that have been completed.

NOVA – Science (This award may be repeated for different belt loops/pins with Cub Scouts earning up to three NOVA Science awards)

1. ☐ Watch or read, choose one:

   a. ☐ Watch an episode or episodes (about an hour total) of NOVA or other media production* about animals, rockets, tornadoes and hurricanes, the environment, or anything science related.

      i. ☐ Make a list of at least two questions or ideas from each production

      ii. ☐ Discuss the ideas and questions with your counselor

   b. ☐ Read one long or two short magazine articles** about animals, rockets, tornadoes and hurricanes, the environment, or anything science related.

      i. ☐ Make a list of at least two questions or ideas from the article(s)

      ii. ☐ Discuss the ideas and questions with your counselor

   c. ☐ Do a combination of reading and watching

      i. ☐ Make a list of at least two questions or ideas from the article or production

      ii. ☐ Discuss the ideas and questions with your counselor

2. ☐ Complete one belt loop or pin from the following list.

   ☐ Astronomy
   ☐ Collecting
   ☐ Geography
   ☐ Geology
   ☐ Map & Compass
   ☐ Nutrition
   ☐ Pet Care
   ☐ Photography
   ☐ Science
   ☐ Weather
   ☐ Wildlife Conservation

3. ☐ Act like a scientist!
   a. ☐ With your counselor, choose a question you would like to investigate.
      Examples (you may get other ideas from your belt loop activities):
      i. ☐ Why do rockets have fins? Is there any connection between the feathers on arrows and fins on rockets?
      ii. ☐ Why do some cars have spoilers? How do spoilers work?
      iii. ☐ Where does water from the creek in your neighborhood go?
      Does your stream flow to the Atlantic or the Pacific Ocean? (You may wish to use Google maps to follow the streams and rivers to the ocean. Keep track of the names of the streams, lakes, and rivers connecting your stream to the ocean. A fun book to read is Paddle to the Sea by Holling C. Holling.)
      iv. ☐ Is the stream in your neighborhood or park polluted? (You can do a stream sample to investigate what kinds of things are living in the water and under the rocks – some things live in polluted water, others can only live in clean water. You can discover if a stream is polluted by investigating what lives there.)
   b. ☐ With a parent or your counselor, use the scientific method to investigate your question (you may do this section with another Cub Scout if you wish).
      ☐ Keep records of your question, what information you found, how you investigated, and what you found out about your question.
   c. ☐ Discuss your investigation and findings with your counselor.

4. ☐ Visit
   a. ☐ Visit a place where science is being done, used, or explained.
      i. Examples:
         a) ☐ Zoo
         b) ☐ Aquarium
         c) ☐ Water treatment plant
         d) ☐ Observatory
         e) ☐ Science museum
         f) ☐ Weather Station
         g) ☐ Fish Hatchery
   b. ☐ Talk to someone in charge about science.
   c. ☐ Discuss with your counselor the science done, used, or explained at the place you visited.

*(Some media examples are the Discovery Channel, Science Channel, National Geographic, and the History Channel.)

(Examples of magazine sources include Odyssey, Know : the Science Magazine for Curious Kids, Kids Discover, National Geographic Kids, Owl or **OWLkids Online. You may wish to look at an article from Popular Mechanics or Popular Science with one of your parents.)

NOVA – Tech Talk (This award may be repeated for different belt loops with Cub Scouts earning up to three NOVA Tech awards)

1. ☐ Look up a definition of Technology and discuss it with your counselor.

2. ☐ Watch or read, choose one:
   a. ☐ Watch an episode or episodes (about an hour total) of NOVA or other media production* that involves technology or how technology is used.
      i. ☐ Make a list of at least two questions or ideas from each production
      ii. ☐ Discuss the ideas and questions with your counselor
   b. ☐ Read one long or two short magazine articles** that talk about technology or how it is used.
      i. ☐ Make a list of at least two questions or ideas from the article(s)
      ii. ☐ Discuss the ideas and questions with your counselor
   c. ☐ Do a combination of reading and watching
      i. ☐ Make a list of at least two questions or ideas from the article or production
      ii. ☐ Discuss the ideas and questions with your counselor

3. ☐ Complete a belt loop or pin from the following list

☐ Astronomy	☐ BB Gun Shooting
☐ Bicycling	☐ Bowling
☐ Computers	☐ Map and Compass
☐ Music	☐ Photography
☐ Snow Ski and Board Sports	☐ Video Games

4. ☐ What technology is used in your belt loop or pin?
   a. ☐ How do you think this technology
      i. ☐ Was invented?
      ii. ☐ Could be made better?
   b. ☐ Discuss your ideas with your counselor

5. ☐ Discuss with your counselor, then
   a. ☐ Visit a place of your choice that uses technology and
   b. ☐ talk to someone in charge about
      i. ☐ the technologies used where you are visiting
      ii. ☐ Why they use these technologies

      Possible choices of places to visit may include
      a) ☐ An amusement park
      b) ☐ A police or fire station
      c) ☐ A radio or television station
      d) ☐ A newspaper office
      e) ☐ A factory or store

6. ☐ Discuss with your counselor
    a. ☐ how technology is used in
        i. ☐ Communication (radio, TV, newspapers and magazines)
        ii. ☐ Business
        iii. ☐ Construction
        iv. ☐ Sports
        v. ☐ Entertainment
    b. ☐ Why technology is important

*(Some media examples are the Discovery Channel, Science Channel, National Geographic, and the History Channel.)
(Examples of magazine sources include Odyssey, Know : the Science Magazine for Curious Kids, Kids Discover, National Geographic Kids, Owl or **OWLkids Online. You may wish to look at an article from Popular Mechanics or Popular Science with one of your parents.**)**

STEM – NOVA PROGRAM –
CUB SCOUT PROGRAM REQUIREMENTS

NOVA – Motion (This award may be repeated for different belt loops with Cub Scouts earning up to three NOVA Motion awards)

1. ☐ Watch or read, choose one:
   a. ☐ Watch an episode or episodes (about an hour total) of NOVA or other media production* that involves motion or machines.
      i. ☐ Make a list of at least two questions or ideas from each production
      ii. ☐ Discuss the ideas and questions with your counselor
   b. ☐ Read one long or two short magazine articles** that show(s) how motion or machines is/are measured, used, created.
      i. ☐ Make a list of at least two questions or ideas from the article(s)
      ii. ☐ Discuss the ideas and questions with your counselor
   c. ☐ Do a combination of reading and watching
      i. ☐ Make a list of at least two questions or ideas from the article or production
      ii. ☐ Discuss the ideas and questions with your counselor

2. ☐ Complete a Belt loop or Pin from the following list
   - ☐ Badminton
   - ☐ BB Gun Shooting
   - ☐ Golf
   - ☐ Softball
   - ☐ Tennis
   - ☐ Baseball
   - ☐ Fishing
   - ☐ Hockey
   - ☐ Table Tennis

3. ☐ Levers
   a. oMake a list or drawing of the three types of levers
      (a lever is one kind of simple machine)
   b. ☐ Be able to tell your counselor
      i. ☐ The class of each lever
      ii. ☐ How it works.
   c. ☐ With your counselor, discuss
      i. ☐ The type of lever involved with the motion in your chosen Pin
      ii. ☐ What you learned about levers and motion from doing your Pin

4. ☐ Visit –
   a. ☐ A playground
      i. ☐ Discuss with your counselor what playground or sports equipment uses levers

5. ☐ Design
   a. ☐ Design, including a drawing or sketch, one of the following
      i. ☐ A new playground fixture that uses a lever
      ii. ☐ A new game or sport using a lever
   b. ☐ Discuss with your counselor
      i. ☐ How the lever in your design will move something

*(Some media examples are the Discovery Channel, Science Channel, National Geographic, and the History Channel.)
(Examples of magazine sources include Odyssey, Know : the Science Magazine for Curious Kids, Kids Discover, National Geographic Kids, Owl or **OWLkids Online. You may wish to look at an article from Popular Mechanics or Popular Science with one of your parents**.)**