



# Venturing & Sea Scouts STEM Exploration Plan and Checklist

**Field of Interest for this STEM Exploration:** \_\_\_\_\_

The following requirements apply to any specific STEM field of interest chosen by a Venturer or Sea Scout in the course of completing a Nova or Supernova award.

### Safety Considerations

Discuss with your mentor the following safety issues in the field of interest you have chosen.

1. The kinds of hazards (to humans, to the environment, to animals) that might occur while engaged in activities in this field
2. Appropriate safety precautions to help minimize these risks
3. Whether it is necessary to obtain training in safety protocols in this field
4. The agencies or organizations that can provide such training
5. What it would take to be a certified safety specialist or safety trainer in this field

Safety Considerations Requirement

I discussed the following about my chosen field of interest with my Counselor/Mentor.	
<input type="checkbox"/> 1. The kinds of hazards (to humans, to the environment, to animals) that might occur while engaged in activities in this field	
<input type="checkbox"/> to humans _____	
<input type="checkbox"/> to the environment _____	
<input type="checkbox"/> to animals _____	
<input type="checkbox"/> other _____	
<input type="checkbox"/> 2. Appropriate safety precautions to help minimize these risks	
_____	
_____	
_____	
<input type="checkbox"/> 3. Whether it is necessary to obtain training in safety protocols in this field	
<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> sometimes _____	
<input type="checkbox"/> 4. The agencies or organizations that can provide such training	
_____	
_____	
<input type="checkbox"/> 5. What it would take to be a certified safety specialist or safety trainer in this field	
_____	
_____	
_____	
_____ Counselor/Mentor Sign.	_____ Date



## Venturing & Sea Scouts STEM Exploration Plan and Checklist

### Developing Knowledge

Do ONE of the following.

1. Visit a workplace in this field. Ask to see an example of the work that is done there, the different facilities, and the tools used. After your visit, discuss the following with your counselor/mentor:
  - A. How much work is done manually and how much work is done with the aid of technology?
  - B. How much work is done by individuals and how much is done in cooperation with others?
  - C. The ways in which the fields of science, technology, engineering, and/or mathematics are important to the work done in this business.
2. Using resources, you find on your own such as at the library, on the Internet, or through visits to relevant places of learning, such as museums, learn more about this field. Then discuss the following with your counselor/mentor:
  - A. The historical development of this field
  - B. How tools and techniques have evolved over time
  - C. How modern tools and techniques have changed over time in this field and how its capacity for accomplishment has been affected
  - D. The ways in which science, technology, engineering, and/or mathematics are important to this field

### Developing Knowledge Requirement

I chose to do  a workplace visit  independent research.

After the workplace visit, I discussed with my counselor/mentor the following:

- A. How much work is done manually and how much work is done with the aid of technology?
- B. How much work is done by individuals and how much is done in cooperation with others?
- C. The ways in which the fields of science, technology, engineering, and/or mathematics are important to the work done in this business.

After my independent research, I discussed the following with my counselor/mentor:

- A. The historical development of this field
- B. How tools and techniques have evolved over time
- C. How modern tools and techniques have changed over time in this field and how its capacity for accomplishment has been affected
- D. The ways in which science, technology, engineering, and/or mathematics are important to this field.

\_\_\_\_\_  
Counselor/Mentor Sign.

\_\_\_\_\_  
Date



## Venturing & Sea Scouts STEM Exploration Plan and Checklist

### Hands-On Experiences

In consultation with your counselor/mentor and, if necessary, a consultant who is a specialist in this field, identify four hands-on activities that are examples of work done in this field that you could carry out yourself. Each activity should engage your attention and efforts for approximately three hours. Under the supervision of appropriate specialists and observing the highest standards of safety, carry out all four activities. Discuss with your counselor what you learned during each activity. Examples include—but are not limited to—conducting experiments, building models, designing tools, drawing plans, learning how to use tools, and serving as an assistant/apprentice to a specialist.

#### Hands-On Experiences Requirement

##### Hands-On Activity 1

Description of activity: \_\_\_\_\_  
Supervisor of this activity: \_\_\_\_\_  
Safety standards: \_\_\_\_\_  
Planned time: \_\_\_\_\_  
Counselor/Mentor approval of plan: \_\_\_\_\_  
Completion date: \_\_\_\_\_ Actual time spent: \_\_\_\_\_  
Acknowledgment of completion: \_\_\_\_\_

##### Hands-On Activity 2

Description of activity: \_\_\_\_\_  
Supervisor of this activity: \_\_\_\_\_  
Safety standards: \_\_\_\_\_  
Planned time: \_\_\_\_\_  
Counselor/Mentor approval of plan: \_\_\_\_\_  
Completion date: \_\_\_\_\_ Actual time spent: \_\_\_\_\_  
Acknowledgment of completion: \_\_\_\_\_

##### Hands-On Activity 3

Description of activity: \_\_\_\_\_  
Supervisor of this activity: \_\_\_\_\_  
Safety standards: \_\_\_\_\_  
Planned time: \_\_\_\_\_  
Counselor/Mentor approval of plan: \_\_\_\_\_  
Completion date: \_\_\_\_\_ Actual time spent: \_\_\_\_\_  
Acknowledgment of completion: \_\_\_\_\_

##### Hands-On Activity 4

Description of activity: \_\_\_\_\_  
Supervisor of this activity: \_\_\_\_\_  
Safety standards: \_\_\_\_\_  
Planned time: \_\_\_\_\_  
Counselor/Mentor approval of plan: \_\_\_\_\_  
Completion date: \_\_\_\_\_ Actual time spent: \_\_\_\_\_  
Acknowledgment of completion: \_\_\_\_\_

\_\_\_\_\_  
Counselor/Mentor Sign.

\_\_\_\_\_  
Date



## Venturing & Sea Scouts STEM Exploration Plan and Checklist

### Career Exploration

Find out about three career opportunities in this field. Communicate to your counselor the training, education, and experience that are needed for each career.

#### Career Exploration Requirement

<p>The three career opportunities I investigated were</p> <ul style="list-style-type: none"><li><input type="checkbox"/> a. _____</li><li><input type="checkbox"/> b. _____</li><li><input type="checkbox"/> c. _____</li></ul> <p>For each career opportunity, I communicated to my counselor or mentor how each of the following is needed for that career.</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Training</li><li><input type="checkbox"/> Education</li><li><input type="checkbox"/> Experience</li></ul> <p>_____</p> <p>Counselor/Mentor Sign. <span style="float: right;">_____</span> Date</p>
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### Value and Impact

Using a combination of library research, Internet research (with your parent's or guardian's permission), and interviews with experts, find out how important the role of this field is in addressing the problems facing our modern world: a burgeoning worldwide population, stresses on the environment, ongoing issues of basic health and sustenance, or other concerns. How might knowledge, abilities, and capacity in this field bring about positive change on a significant scale? Create an oral or written report and present it to your counselor.

#### Value and Impact Requirement

<p>I created and presented to my counselor or mentor</p> <ul style="list-style-type: none"><li><input type="checkbox"/> an oral report <b>OR</b></li><li><input type="checkbox"/> a written report</li></ul> <p>My research included the following sources</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Library materials _____</li><li><input type="checkbox"/> Internet materials _____</li><li><input type="checkbox"/> Interviews with experts _____</li><li><input type="checkbox"/> Other _____</li></ul> <p>My report addressed</p> <ul style="list-style-type: none"><li><input type="checkbox"/> The problems this field will help us solve.</li><li><input type="checkbox"/> The ways in which this field might someday help us solve those problems.</li></ul> <p>_____</p> <p>Counselor/Mentor Sign. <span style="float: right;">_____</span> Date</p>
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