



# Venturing 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 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.

1. The kinds of hazards (to humans, to the environment, to animals) that might occur while engaged in activities in this field

to humans \_\_\_\_\_

to the environment \_\_\_\_\_

to animals \_\_\_\_\_

other \_\_\_\_\_

2. Appropriate safety precautions to help minimize these risks

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Whether it is necessary to obtain training in safety protocols in this field

yes       no       sometimes \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Counselor/Mentor's okay

\_\_\_\_\_  
Date



# Venturing 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 <input type="checkbox"/> a workplace visit <input type="checkbox"/> independent research.	
After the workplace visit, I discussed with my counselor/mentor the following:	
<input type="checkbox"/> A. How much work is done manually and how much work is done with the aid of technology?	
<input type="checkbox"/> B. How much work is done by individuals and how much is done in cooperation with others?	
<input type="checkbox"/> 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:	
<input type="checkbox"/> A. The historical development of this field	
<input type="checkbox"/> B. How tools and techniques have evolved over time	
<input type="checkbox"/> C. How modern tools and techniques have changed over time in this field and how its capacity for accomplishment has been affected	
<input type="checkbox"/> D. The ways in which science, technology, engineering, and/or mathematics are important to this field.	
Counselor/Mentor's okay	Date



## Venturing 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

<input type="checkbox"/>	<b>Hands-On Activity 1</b> Description of activity: _____ Supervisor of this activity: _____ Safety standards: _____ Planned time: _____ Counselor/Mentor approval of plan: _____ Completion date: _____ Actual time spent: _____ Acknowledgment of completion: _____
<input type="checkbox"/>	<b>Hands-On Activity 2</b> Description of activity: _____ Supervisor of this activity: _____ Safety standards: _____ Planned time: _____ Counselor/Mentor approval of plan: _____ Completion date: _____ Actual time spent: _____ Acknowledgment of completion: _____
<input type="checkbox"/>	<b>Hands-On Activity 3</b> Description of activity: _____ Supervisor of this activity: _____ Safety standards: _____ Planned time: _____ Counselor/Mentor approval of plan: _____ Completion date: _____ Actual time spent: _____ Acknowledgment of completion: _____
<input type="checkbox"/>	<b>Hands-On Activity 4</b> Description of activity: _____ Supervisor of this activity: _____ Safety standards: _____ Planned time: _____ Counselor/Mentor approval of plan: _____ Completion date: _____ Actual time spent: _____ Acknowledgment of completion: _____
<div style="display: flex; justify-content: space-between; margin-top: 20px;"> <span>_____</span> <span>_____</span> </div> <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <span>Counselor/Mentor's okay</span> <span>Date</span> </div>	



## Venturing 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

The three career opportunities I investigated were

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

For each career opportunity, I communicated to my counselor or mentor how each of the following is needed for that career.

Training

Education

Experience

\_\_\_\_\_

Counselor/Mentor's okay \_\_\_\_\_  
Date

### 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

I created and presented to my counselor or mentor

an oral report **OR**

a written report

My research included the following sources

Library materials \_\_\_\_\_

Internet materials \_\_\_\_\_

Interviews with experts \_\_\_\_\_

Other \_\_\_\_\_

My report addressed

The problems this field will help us solve.

The ways in which this field might someday help us solve those problems.

\_\_\_\_\_

Counselor/Mentor's okay \_\_\_\_\_  
Date