



Student Capstone Challenge

Information and Requirements

2022-2023

~CAPSTONE~

-The crowning achievement, point, element, event.-

DESCRIPTION

A capstone challenge is a culminating activity in your 8th-grade year incorporating STEM careers and concepts in a project serving others.

Capstone projects demonstrate each student's unique ability, creativity, collaboration, and problem-solving skills, along with your written, oral, organizational, and production skills.

GENERAL DESCRIPTION

GOALS:

- Honor and serve others
- Showcase your talents and passions for serving others
- Find a client to benefit from the school, community, or world
- **CRITICAL THINKING:**
 - Student detects potential problems or solves problems as they arise
 - Expand and improve on ideas, products, procedures, etc
 - Formulate core questions for your client in order to provide the best service possible
- **CREATIVITY:**
 - Think “outside the box”
- **PROBLEM-SOLVING:**
 - Student detects potential problems or solves problems as they arise
 - Expand and improve on ideas, products, procedures, etc
- **RESEARCH:**
 - The student uses information and technology to learn and deepen their understanding of the chosen product
- **COMMUNICATION:**
 - Communication with the client to identify needs and wants, both at the beginning and ongoing throughout the project

COMPONENTS

The Eighth Grade Capstone Challenge Components are:

1. Proposal
2. Research Paper
3. Project
4. Logbook
5. Presentation

PROPOSAL:

- **Proposal Form**
 - All students must fill out a project proposal form on Google docs
 - This form must be updated as needed
- **Teacher Approval**
 - All students must meet with Mr. A. for a brief conference
- **Class Presentation**
 - All students must prepare a brief presentation to the class about their project
 - Mr. A. and class will provide feedback
- **Approval**
 - Teacher and class will provide approval of project

RESEARCH PAPER:

- The Capstone research paper is approximately one to two pages (double-spaced). The topic of your research paper must be linked to your Capstone project. For example, if you are holding a coat drive for the Dr. Martin Luther King Center, your research paper might be on homelessness in the Denver area. Or, if you are teaching a class in nutrition, your research paper might be on the effects of a healthy diet. If you are building a table, your research paper might be on the history of furniture-making in New England.
- Start with a thesis statement in the first paragraph. Include also a hook and an overview of the entire paper.
- The body of your paper must include evidence from EACH of your sources. Be sure to include a minimum of one piece of textual evidence from each source.
- You must use a minimum of three sources. No more than one source may be internet-based sources. (Note: No *Wikipedia* entries (or sources of similar type) are accepted. Scholarly journals are preferred.
- (NOTE: science journal articles, books, but no more than one internet site. Periodicals available on-line are not considered internet sites)
- MLA format is required.
Research paper must include a Works Cited page, but does not count as one of the 1-2 required pages

PROJECT:

- A capstone challenge is a culminating activity in your 8th grader year that incorporates one or more aspects of your scientific learning thus far (grades K-8) which serves others.
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- Capstone projects demonstrates each students' unique interests, passion, ability, along with their written and oral, organizational, and production skills.
- Ben Franklin Academy eighth graders are required to complete a Capstone Challenge. A Capstone Challenge allows a student to choose a topic of their choice, but their project must be researched- based and solve a problem.
- The Capstone Challenge is designed to be completed independently by students with the guidance of a mentor of their choice or expert in the field.
- In order to successfully complete their Capstone Challenge, students will need to exhibit the ability to solve complex problems, evaluate and synthesize researched information, write effectively, communicate articulately, stay organized, wisely manage their time, skillfully use technology in a presentation, and artfully complete an oral presentation.

LOGBOOK:

- Each student is responsible to keep a logbook of their work, meetings, etc
- Your logbook format may be any method you choose (a separate lab book, notebook, binder, digital {google doc, video}, etc....
- Document any and all work in your lab book...write, photos, videos, etc...
- Document any and all meetings
- Logbook documentation of your progress by using the following headings:
 - ASK
 - IMAGINE
 - PLAN
 - CREATE
 - TEST
 - IMPROVE
 - SHARE
- Date each entry
- Be organized and neat...but do it your way!!!
- Possible items to include
 - Number of hours per work time
 - Work accomplished
 - Difficulties
 - Solutions



THINGS TO DO or KNOW

APPLIED METHODS:

The student should **choose one** of the following applied learning methods upon which to base their Capstone:

METHOD	DESCRIPTION/IDEAS
<p style="text-align: center;">Designing a product, service or system</p>	<ul style="list-style-type: none"> ● Identify needs that could be met by new products, services, or systems and create solutions for meeting them <ul style="list-style-type: none"> ○ Design and build a specific product (desks, entertainment center, classroom item you have noticed that would benefit teacher and/or student's learning, ○ Design a plan for development ○ Investigate an issue and propose possible solutions ○ Design a service: tutoring, teaching the 4th graders the periodic table of element song, computer class, etc
<p style="text-align: center;">Improving a system</p>	<ul style="list-style-type: none"> ● Develop an understanding of the way systems of people, machines, and processes work; troubleshoot problems in their operation and devise strategies for improving their effectiveness <ul style="list-style-type: none"> ○ Improve the system for water treatment in a community. Design a curriculum unit to address a gap or a problem you identified. ○ Identify a problem within the structure of student government and make a proposed solution. ○ Troubleshoot and repair faults in the operation of an automobile, mechanical device, or computer-based system.
<p style="text-align: center;">Planning and organizing an event or activity</p>	<ul style="list-style-type: none"> ● Take responsibility for all aspects of planning and organizing an event or activity from concept to completion, making good use of the resources of people, time, money, materials and facilities. This event must include content standards. ● Plan and Organize a voter registration drive within the school or community. <ul style="list-style-type: none"> ○ Arrange a series of career information seminars. ○ <i>Hosting a career fair with community businesspeople.</i> ○ Organize a cultural festival/business exposition. <ul style="list-style-type: none"> ○ <i>Examples include putting on a Spanish Festival for 200 students.</i> ○ Organize a presentation of student artwork. <ul style="list-style-type: none"> ○ <i>Examples include various art shows hosted both on and off campus, theater productions hosted by both MHS and Gaudet, improvisational nights, writing expositions, etc.</i>

GENERAL:

- Must choose and serve a client
- Client must:
 - Be a non-family member
 - Be an adult
- Must meet with your client at least three times during the process (at least one in-person meeting is required, zoom meetings and phone calls are acceptable)
- Meetings and conversations must be documented in a logbook of some type (the method of documentation (“logbook”) is your choice)
- No groups allowed
 - You are encouraged to form a Capstone Study Group to help each other

HELPFUL HINTS:

- Start early and work in short periods of time
- Fit into your client’s schedule when planning meetings
- Form a Capstone Work Group. Although ALL capstone projects must be completed individually, helping each other is allowed.

INSTRUCTOR GUIDANCE:

- Periodic conferences with Mr. A. to discuss your project will take place throughout the semester
- You may also request a conference with Mr. A.
- You may wish to meet with other students or the class periodically to gain ideas, insight, and help

IDEAS:

- Develop a song that helps people learn about your topic.
- Develop a song for each chapter learned about in 8th grade
- Help another teaching in this building or another school
- Develop a song where students can learn the Arma Dei Academy Mission Statement...the words are already there.
- We will brainstorm others
- Observe your world, see a need, develop a passion of yours...and do it!!!

HELPFUL HINTS:

- Start early and work in short period of time more often than last minute
- Work with other people. Possibly form Capstone work groups. Unless approved by Mr. A., Capstone projects are to be completed individually, but working in groups to help each other with individual capstone projects is allowed.
- Many Fridays, after our weekly quiz, there will be dedicated class time to work on your Capstone Challenge.

GRADING:

- You will be graded on the following areas
 - PROJECT PROPOSAL
 - A Brief presentation to the class when you are ready to propose your idea/client, etc)
 - RESEARCH
 - How research relates to project
 - PROJECT
 - How it benefits or serves others
 - Purpose
 - LOGBOOK
 - Details
 - Neatness
 - Creativity/Format
 - FINAL PRESENTATION
 - Delivery
 - Content/Organization
 - Enthusiasm/Audience Awareness
- Please see the grading rubric on google classroom for any details you might need on how you will be graded.

CAPSTONE PROJECT

