

# STEM Summer Assignment 2016

For the 2016 summer and fall Academy wide assignment, our Academy will embark on choosing our own STEM Adventure. In order to complete the adventure, the students will pick and choose assignments from a provided list. Each student needs to **CHOOSE ONE OF THE OPTIONS BELOW** to complete over the course of the summer. This will be assessed through a creative presentation - POWERPOINTS AND TRI FOLD POSTER BOARDS ARE NOT ALLOWED! Be creative and innovative. **Ideas for presentations include make a TED-Talk, video presentation, web-site, professional poster, prototype, other creative outlets.** The presentation expectations are found on the attached rubric.

1. Watch a series of approved design talks (listed below) and prepare a presentation relating the talks to STEM Habits or d.School process. (100 pts) These are easiest to find by going on YouTube and searching using these titles. You may also find links directly to these on the HVA STEM Academy webpage.
  - A. Prototyping, Iterating and Making New Things by Chris Milne at TEDx Spence School
  - B. Cosmology- Discovering the Unknown by Renee Hlozek at TEDx Spence School
  - C. The Unexpected Benefit of Celebrating Failure by Astro Teller at TEDx
  - D. How Broken Toasters Can Make You Happy by Maayke Damen at TEDx RSM
  - E. Turning Particles into Surfers by Edda Gschwendtner at TEDxCERN

Your presentation will be your own TED talk combining elements of all FIVE videos and their connection to our STEM habits and d.school engineering design process.

2. Read a STEMish novel of a minimum of 300 pages. Prepare a presentation relating the book to STEM Habits or d.School process. Some possibilities include: *Cinder*, *Rex Riders*, *Feed*, *House of the Scorpion*, *Witch and Wizard*, *Digital Fortress*, *The Wave: In Pursuit of the Rogues, Freaks, and Giants of the Ocean*, *The Gemini Effect*, *Deception Point*, *Brain Jack*. **Parental note: please understand most of these novels contain varying degrees of profanity. These are suggested titles due to themes, students are invited to research with their parents to find alternates with similar STEM connections that are acceptable to your family.**
3. Job Shadow and Interview someone in a STEM occupation for a minimum of 8 hours. Prepare a presentation relating the experience to the STEM Habits or d.School process. Students **MAY NOT** job shadow a relative, but may participate in the same place.
  - Current title and role of individual
  - Educational preparation required – years of schooling, degrees, continuing education
  - Why he or she chose this profession
  - A brief description of the field/career
  - Current salary ranges, including starting salary
  - Skills and strengths needed for success in the field
  - Suggestions that the individual you are interviewing has for you as a Health Science student
  - After you complete the interview, respond to the following reflection questions. What impressions do you have about this career? In what ways does it meet, exceed, or fail to meet your expectations? In what ways are you surprised by what you've learned?

Prepare a presentation for advisory connecting to our habits and d.school process.

4. Volunteer for STEM Camp working with 2<sup>nd</sup>-7<sup>th</sup> grade students. Prepare a presentation relating the experience to the STEM Habits or d.School process. STEM Camp
  - Detailed description of work done. Include explanations as appropriate so that audience understands scope of work
  - Exposure to something that was unexpected or description of new learning
  - Describe your thoughts, emotions, and feelings regarding your experience. Include things that you may have learned about yourself or challenges you may have faced and/or how you went about solving challenges.
  - Include pictures/visuals of your experience. No children's faces should be captured in photos. Broad, general, experiment type pictures.
5. Use the d.School process to solve a problem. Your choice, be creative, bonus points for implementing a solution OUTSIDE of your world, and prepare a presentation.

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## Presentation Rubric

	<b>Exemplary – 12</b>	<b>Commendable – 9</b>	<b>Acceptable – 8</b>	<b>Revisit – 5</b>
Introduction and time limit	Presenter powerfully introduces the topic and Essential Question. Presentation adheres to 3-5 minute time limit.	Presenter clearly introduces the topic and Essential Question. Presentation is slightly longer than 5 minute time limit.	Presenter introduces Essential Question. Presentation is slightly shorter than 3 minute minimum.	Presenter does not introduce Essential question. Presentation is significantly out of time range (above or below).
Diction and eye contact	Presenter speaks clearly and uses appropriate volume and pacing. Presenter maintains eye contact.	Presenter speaks clearly and loud enough to be heard. Presenter makes eye contact frequently.	Presenter can be heard. Presenter makes some eye contact with the audience.	Presenter is difficult to hear. Presenter makes little eye contact, reads presentation.
STEM Habits connection	Presenter clearly understands STEM habits and draws strong connections to each.	Presenter has partial understanding of STEM habits and draws some connections.	Presenter shows little understanding of STEM habits and makes minimal connections.	Presenter does not demonstrate understanding of STEM habits and/or does not draw connections.
d.school Engineering Design Connection	Presenter clearly understands Design process and draws strong connections.	Presenter has partial understanding of design process and draws some connections.	Presenter shows little understanding of design process and makes minimal connections.	Presenter does not demonstrate understanding of design process and/or does not draw connections.
Information	Information is accurate and relevant; details and examples are carefully chosen to make the exhibition more meaningful.	Information is accurate and relevant; details and examples are used.	Information is accurate and covers the major issues surrounding the topic.	Information is inaccurate or significant information is left out.
Conclusion	The presenter answers the EQ with valid and convincing evidence.	The presenter answers the EQ with valid evidence.	The presenter answers the EQ with some evidence.	Presenter does not answer EQ.
Visual aids NO POWERPOINTS NO POSTER BOARDS	Visuals are skillfully executed, effectively incorporated into the exhibition, and are used to make the exhibition more meaningful.	Visuals are competently executed, used to complement the information and make the exhibition more interesting.	Visuals can be seen clearly and convey relevant and accurate information about the topic.	Visuals are poorly executed, lacks connection to topic.
Works cited	Presenter flawlessly cites multiple resources showing varied media.	Presenter correctly cites most resources showing varied media.	Presenter makes minimal citations or incorrectly cites few resources.	Presenter does not cite resources.