

AP CAPSTONE RESEARCH

Language from the AP Research Course and Exam Description was utilized in the syllabus.

Overview of AP Research

This course engages students to deeply explore an academic topic, problem, issue, or idea of individual interest. Within this course they will design, plan, and implement a yearlong investigation to address a research question. The skills that were acquired in AP Seminar of research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information will be applied to their research process. Students will reflect on their skill development, document their processes, and curate the artifacts of their scholarly work through a process and reflection portfolio (PREP Journal). The course culminates in an academic paper of approximately 4,000-5,000 words and a presentation with an oral defense.

Goals of AP Research

Students will be empowered by this class to:

- engage in rigorous college-level curricula focused on the skills necessary for successful college completion;
- extend their abilities to synthesize information from multiple perspectives and apply skills in new situations and cross-curricular contexts;
- be enabled to collect and analyze information with accuracy and precision;
- cultivate their abilities to craft, communicate, and defend evidence-based arguments; and • be provided with opportunities for them to practice disciplined and scholarly research skills while exploring relevant topics that appeal to their interests and curiosity

Core Skills of AP Research

The focus of AP Research is on skill development and students will be given opportunities to practice, refine, and master the skills critical for academic success. The following skills will be sequenced and scaffold in order to assist students to develop them fully:

- Critical thinking and reasoning;
- Critical reading;
- Inquiry and Research;
- Argumentation;
- Communicating; and
- Collaboration

These skills will allow students to develop and strengthen their critical and creative thinking skills and learn to consider multiple points of view to develop their own perspectives on complex issues and topics through inquiry and investigation. The wide variety of academic sources will provide the opportunity to gain a rich appreciation and understanding of issues as students independently analyze and evaluate the evidence to consider options, alternatives, solutions or resolutions of real-world or academic problems.

Five Big Ideas of AP Research

This course is not tied to a specific content area; instead it emphasizes and strives for competency in core academic areas. Students develop and apply discrete skills identified in Q.U.E.S.T by learning objectives and enduring understandings within the five big ideas. In order to assist the students in mastering the elements of Q.U.E.S.T the essential questions will be utilized to scaffold the skills for each section.

Big Idea 1: Question and Explore – Essential Questions

- How might others see a problem or issue differently?
- What questions have yet to be asked?
- What do I want to know, learn, or understand?
- How does my research question shape who I go about trying to answer it?
- How does my project goal shape the research or inquiry I engage in to achieve it?

Big Idea 2: Understand and Analyze – Essential Questions

- What strategies will help me comprehend a text?
- What is the main idea of the argument or artistic work and what reasoning does the author use to develop it?
- What biases may the author have that influence his or her perspective?
- Does this argument acknowledge other perspectives?
- How can I assess the quality or strength of others' research, products, or artistic works?

Big Idea 3: Evaluate Multiple Perspectives – Essential Questions

- What patterns or trends can be identified among the arguments about this issue? • What are the implications and/or consequences of accepting or rejecting a particular argument?
- How can I connect the multiple arguments? What other issues, questions, or topics do they relate to?
- How can I explain contradictions within or between arguments?
- From whose perspective is this information being presented, and how does that affect my evaluation?

Big Idea 4: Synthesize Ideas – Essential Questions

- How can I connect and analyze the evidence in order to develop an argument and support a conclusion?
- Are there other conclusions I should consider?
- How does my scholarly work emerge from my perspective, design choices, or aesthetic rationale?
- How do I acknowledge and account for my own biases and assumptions?
- What is the most appropriate way to acknowledge and attribute the work of others that was used to support my argument? How do I ensure the conclusions I present are my own?

Big Idea 5: Team, Transform, and Transmit

- How can I best appeal to and engage my audience?
- What is the best medium or genre through which to reach my audience?
- How might I adapt my written and oral presentations for different audiences and situations?
- How might my communication choices affect my credibility with my audience? • Which revision strategies are most appropriate to developing and refining my project at different stages?
- How do I provide feedback that is valuable to others? How do I act upon feedback I have received?
- How can I benefit from reflecting on my own work?

Process Reflection Portfolio (PREP) Journal

To help guide students through the inquiry process they will keep a PREP Journal, a formative assessment tool which will be shared with the AP Research Teacher. Students will document their inquiry process, communication with their teachers and consultants, and reflections on their thought processes.

Students will address the big five ideas in Q.U.E.S.T. with specific attention paid to the following:

- Choice of the research question and interest in the subject matter.
- Research process, including resources; analysis of evidence; directions in which the inquiry or project seems to lead; changes to initial assumptions.
- Ways in which students have worked both on their own and as part of a larger community.
- Challenges and solutions.

AP

Research Assessment Overview

Students are assessed with one through course performance task consisting of two distinct components. Both components will be included in the calculation of students' final AP score.

Task	Percent
<p><u>Academic Research Paper</u>: well-reasoned argument based on the evidence collected in an academic paper of 4,000 – 5,000 words.</p> <p><u>Components</u>:</p> <ul style="list-style-type: none">• Introduction• Method, Process, or Approach• Results, Product, or Findings• Discussion, Analysis, and/or Evaluation • Conclusion and Future Directions• Bibliography	75%
<p><u>Presentation and Oral Defense</u>: a 15-20 minute presentation and deliver it to an oral defense panel of three evaluators.</p> <p><u>Oral Defense Questions</u>:</p> <ul style="list-style-type: none">• Research/Inquiry Process• Depth of Understanding• Reflection Throughout the Inquiry Process	25%

Instructional Resources

To meet the course objectives, current media, magazines, journals, newspapers, and other secondary and primary sources will be incorporated. Instructional and readings will also come from the following text:

- AP Course and Exam Description for AP Research (2017). New York: College Board
- AP Research Student Workbook (2017). New York: College Board
- Past AP Research student work (with permission granted) for exemplars and discussion pieces

Class Expectations & Rules

- **Attendance/Tardiness/Discipline:** The school policies will be followed and enforced.
- **Responsibilities:** You are responsible for the materials needed for this course. You will also be responsible for any and all work missed due to excused absences. Late work will be penalized. No late work in a unit of study is accepted after the unit assessment.
- **Preparation:** Completion of homework and readings is essential. Being prepared gives you the opportunity to succeed on tests and quizzes. As an upper level student, you must understand that your studying is not finished until you have a thorough understanding of the topics covered in each unit. Not being prepared leads to poor performance and missing assignments.
- **Organization:** You will be responsible for collecting handouts, taking notes, and keeping all these materials organized.
- **Participation:** You are expected to participate in discussions and group work, answer when called upon, and be attentive to material being presented.
- **Respect:** Respect the opinions and input of your classmates, their goals, and the goals of the teacher. Respect yourself by taking ownership of the things you produce, the knowledge you acquire, and the skills you learn.
- **Additional Help:** Check with your teacher. He/she is often available before/after school or during the school day. You are strongly encouraged to meet with the teacher to discuss any problems you are having in this course

Class Evaluation and Grading Distribution

Category	Percentage
Formal Writing/Assessments	45%
PREP/Quizzes	35%
Homework/Classwork	20%

Students will be assessed on their mastery of the course's five "Big Ideas" or **QUEST**:

- Question & Explore
- Understand & Analyze Arguments
- Evaluate Multiple Perspectives
- Synthesize Ideas
- Team, Transform and Transmit

These skills will be assessed for a grade through both formative and summative assessments within each unit.

Grading: The course grading scale will adhere to our school policy.

92 – 100 A – Distinguished Honors

83 – 91 B – Honors

74 – 82 C – Acceptable Work

65 – 73 D – Marginally Passing

0 – 64 F – Failing Work

Homework/Classwork: 20% of Class Grade

- Homework may consist of reading that needs to be completed from our course text or various handouts. Classwork may require the annotation of said reading, or it may require the organization of or inclusion of various parts of the PREP journal.

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PREP Portfolio: 35% of Class Grade

- A required instructional component of the course is that students maintain a Process and Reflection Portfolio (PREP) in which students keep track of their learning. The primary purpose of the PREP is to document students' development as they investigate their research questions, thereby providing evidence that they have demonstrated a sustained effort during the entire inquiry process. Throughout the inquiry process, students will document their research or processes, communication with their teachers and expert advisor, and reflections on their thought processes. The combined group of questions and tasks in the PREP document will address all five big ideas in the curriculum framework (QUEST):
 - Choice of the research question and interest in the subject matter.
 - Research process, including resources (documents, people, multimedia); analysis of evidence; directions in which the inquiry or project seems to lead; changes to initial assumptions
 - Ways in which students have worked both on their own and as part of a larger community
 - Challenges and solutions
- PREP activities, prompts, and questions will continue throughout the year to scaffold and support the various phases of the inquiry process and the skills necessary for success in this process. Students will maintain the PREP both in response to specific assignments and prompts generated by the instructor, and independently as they move through the research process. [CR4a]
- The PREP will be reviewed regularly by the instructor, and the student and instructor will meet in conjunction with this review to discuss student progress. Feedback on the PREP may be verbal (in one-on-one conferences) or written (digitally or in the PREP itself). [CR4b] Students will receive both electronic and paper versions of the above information, and will go through an activity with the task description/requirements as well as the description of the PREP which will require students to annotate the task description/PREP guidelines, identify any questions they have about either element of the course, and explain specific components of the task to a peer as a check for understanding. [CR4a] — Students document their inquiry processes, communicate with their teachers and any expert advisors, and reflect on their thought processes. [CR4b] — Students have regular work-in-progress interviews with their teachers to review their progress and to receive feedback on their scholarly work.

The final version of the PREP will include the following:

- Title page and table of contents.
- Copy of the completed and approved Inquiry Proposal Form.
- PREP entries made throughout.
- Specific pieces of work the student feels best showcases his/her work.
- Annotated bibliography of sources important to the student’s work, as well as other elements such as:
 - Photographs, charts, spreadsheets, and/or links to videos, other relevant visual research artifacts.
 - Draft versions of selected portions of the paper.
 - Notes in preparation for the presentation and oral defense.
 - Copy of the academic paper.
 - Documentation of permission(s) received from primary sources such as IRB permission [CR2a]
 - Documentation or log of the student’s interactions with expert advisor(s) and the role the expert advisor(s) played in the student’s learning and inquiry process (e.g., what areas of expertise did they have, did they give the help the student needed, areas the expert advisor was able to help)
 - Questions asked to and feedback received from peer and adult reviewers both in the initial stages and at key points.
 - Reflections on whether the feedback was accepted or rejected and why.
 - Attestation signed by the student which states, “I hereby affirm that the work contained in this Process and Reflection Portfolio is my own and that I have read and understand the AP Capstone Policy on Plagiarism and Falsification or Fabrication of Information.”

Formal Writing/Assessments: 45% of Class Grade

- Institutional Review Board Application: Detailed form completed to ensure that students are prepared to conduct ethical and feasible research with the backing of Shepherd Hill Regional High School.
- Inquiry Proposal Form: Students must submit an Inquiry Proposal Form that clearly identifies the topic of study, research question, preliminary research, and the relevant methodological and ethical considerations involved in the study. Only once approval has been granted will the student be allowed to seek a consulting expert and begin the research process in earnest. If the proposed inquiry requires a more extensive consideration of ethics and potential harm (e.g., involvement of human subjects), approval will not be granted until the inquiry proposal has also passed review by an Institutional Review Board (IRB). [CR2a] [CR3] [CR2a]
- Annotated Bibliography: This assignment will be used to assist students in conducting research.
- Elevator Pitches, Outlines, and Peer Revisions: Students will be given multiple opportunities to express their ideas and goals in the classroom through elevator pitches (short, mini-presentations) and more formal Poster Presentations. Students will also be required to catalog the development of their academic paper through various assignments. These opportunities will allow students to receive feedback from peers and other faculty within the school regarding research elements.

Instructional Materials

- Foutz, Brian. *Your Guide to AP® Research*. FFH Publishing, 2020.
- *AP Capstone Research Course and Exam Description*. College Board, 2017.

- *AP Research Workshop Handbook and Resources*. College Board, 2017.
- The inquiry-based nature of the Research course requires activities and assessments from a variety of resources (library/internet research, audio/video sources, etc.). Information used to address an issue may come from various print and non-print secondary sources (articles, studies, analyses, reports) and/or primary sources (original texts and works of personally collected data such as experiments, surveys, questionnaires, and interviews).
- Students will be expected to use technology to access and manage information from online databases (EBSCO, ProQuest, JSTOR, Google Scholar) that grant access to primary and secondary sources. Students should plan to have access to a laptop with internet and database access during class.

AP Capstone Policy on Plagiarism and Falsification or Fabrication of Information [CR4b]

Participating teachers shall inform students of the consequences of plagiarism and instruct students to ethically use and acknowledge the ideas and work of others throughout their course work. The student's individual voice should be clearly evident, and the ideas of others must be acknowledged, attributed, and/or cited. A student who fails to acknowledge the source or author of any and all information or evidence taken from the work of someone else through citation, attribution or reference in the body of the work, or through a bibliographic entry, will receive a score of 0 on that particular component of the AP Seminar and/or AP Research Performance Task. In AP Seminar, a team of students that fails to properly acknowledge sources or authors on the Team Multimedia Presentation will receive a group score of 0 for that component of the Team Project and Presentation.

A student who incorporates falsified or fabricated information (e.g., evidence, data, sources, and/or authors) will receive a score of 0 on that particular component of the AP Seminar and/or AP Research Performance Task. In AP Seminar, a team of students that incorporates falsified or fabricated information in the Team Multimedia Presentation will receive a group score of 0 for that component of the Team Project and Presentation. [CR2b]

AP Capstone students will be held to exceptionally high standards of academic honesty and ethics. Preparing fairly and effectively for the completion of the paper and presentation tasks requires advanced planning and time management. Many difficulties with plagiarism arise when students leave work to the last minute. Keep track of all the sources used to ensure you do not misattribute information. As an additional safeguard against plagiarism, Advanced Placement Research work—even the drafts—will be submitted to Turnitin.com. [CR2a] Success in AP Capstone—and in life—is not about reporting information, it is about synthesizing and creating new ideas. Your work in this class is the doorway to that reality. [CR2b] — Students develop an understanding of the AP Capstone Policy on Plagiarism and Falsification or Fabrication of Information. [CR2a] — Students develop an understanding of ethical research practices.

First Quarter (Weeks 1–9)

This first quarter will lead students to Question and Explore (Big Idea 1) a number of topics that may lead them to successfully identify an area of inquiry for their year long research project, while at the same time, continuing to develop and deepen their skills of Understanding and Analyzing (Big Idea 2) and Evaluating Multiple Perspectives (Big Idea 3). We will *begin* work on Synthesizing (Big Idea 4) initial research to inform question construction and the direction the research will go, as well as Team, Transform, and Transmit (Big Idea 5) throughout the quarter.

- AP Research students are introduced to the course goals, policies, procedures, grading scale, and specific task description.
- Students consider topics, problems, or ideas for inquiry and practice developing research questions. • Students choose a topic/issue, carry out a preliminary search for other’s studies pertaining to their topic of inquiry, develop an annotated bibliography, and finalize a research question and proposal. • Students present a preliminary inquiry proposal for peer review; identify the need for, recruit, and begin communication with expert advisors; finalize and submit a proposal; and reflect on feedback received from the instructor.
- Students complete the background component of their academic paper and finalize the choice and design of their inquiry method. If necessary, they submit a revised version of their proposal for final approval. Proposals will be submitted for instructor approval no later than November 30.

Introduction to the Course Goals and Task Description (Weeks 1 and 2)

In AP Research, students will further the skills they developed in the AP Seminar course by learning research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information as they address a research question/project goal. They will conduct research and implement a developed or chosen inquiry methodology to design, plan, and conduct an in-depth study or investigation of an area of personal interest, culminating in a paper of 4,000–5,000 words that must include the following elements:

- Introduction
- Method, Process, or Approach
- Results, Product, or Findings
- Discussion, Analysis, and/or Evaluation
- Conclusion and Future Directions
- Bibliography

Throughout the course, students will document and reflect upon the research process and their communication with their instructor and any outside expert advisor(s) using a process and reflection portfolio (PREP). The PREP will be reviewed regularly by the instructor and students will receive feedback (verbal or written) on their PREP entries.

In addition to completing a research paper, students will do the following:

- Arrange for a viewing of additional scholarly work (where applicable)
- Deliver a presentation (using appropriate media)
- Defend research design, approach, and findings to a panel (instructor and two additional adults/experts)

Process and Reflection Portfolio (PREP) – A Required Instructional Component (based on Course and Exam Description)

The primary purpose of the PREP is to document students' development as they investigate their research questions, thereby providing evidence that they have demonstrated a sustained effort during the entire inquiry process. Throughout the inquiry process, students will document their research or processes, communication with their teachers and expert advisor, and reflections on their thought processes. The combined group of questions and tasks in the PREP document will address all five big ideas in the curriculum framework (QUEST), with specific attention paid to the following: **[CR4a]**

- Choice of the research question and interest in the subject matter
- Research process, including resources (documents, people, multimedia); analysis of evidence; directions in which the inquiry or project seems to lead; changes to initial assumptions
- Ways in which students have worked both on their own and as part of a larger community • Challenges and solutions

PREP activities, prompts, and questions will continue throughout the year to scaffold and support the various phases of the inquiry process and the skills necessary for success in this process. Students will maintain the PREP both in response to specific assignments and prompts generated by the instructor, AND independently as they move through the research process. **[CR4a]**

The PREP will be reviewed regularly (at least every other week) by the instructor, and the student and instructor will meet in conjunction with this review to discuss student progress. Feedback on the PREP may be verbal (in one-on-one conferences) or written (digitally or in the PREP itself). **[CR4b]**

Students will receive both electronic and paper versions of the above information, and will go through an activity with the task description/requirements as well as the description of the PREP which will require students to annotate the task description/PREP guidelines, identify any questions they have about either element of the course, and explain specific components of the task to a peer as a check for understanding.

[CR4a] — Students document their inquiry processes, communicate with their teachers and any expert advisors, and reflect on their thought processes.

[CR4b] — Students have regular work-in-progress interviews with their teachers to review their progress and to receive feedback on their scholarly work as evidenced by the PREP.

Identifying a Topic of Interest and an Area of Inquiry - Question and Explore: Big Idea One

Explore the possibilities:

- Students will read, watch, and/or listen to a series of sources to explore potential areas of inquiry. The beginning unit seeks to expose the students to many world issues, as well as many different possible formats and sources of information.
- A specific activity that will relate to learning objectives (LOs) or to essential knowledge statements (EKs) will accompany each of the various sources with which the students engage. This will, for example, move students toward a thoughtful and successful achievement of LO 1.1C as they explore many different areas to discover what issues and topics are of a personal interest to them (EK 1.1C1). Students will be working on the big ideas of the course framework through these activities, as they consider the sources and engage in questioning and exploring the topics, analyzing arguments, and evaluating multiple perspectives.

Course Resources

Primary texts:

- Marcus Tullius Cicero's "The Defense of Injustice"
- U.S. Constitution selections
- Thomas Jefferson's Declaration of Independence (1776)
- Elizabeth Cady Stanton's Declaration of Sentiments and Resolutions

Podcasts (NPR, etc.):

- NPR: Science Friday Podcasts about Nanotechnology

Literature dealing with topical/controversial issues:

- Mill, John Stuart. *The Subjection of Women*. Reprint ed. Mineola, NY: Dover Publications, 1997.
- Wollstonecraft, Mary. "Of the Pernicious Effects Which Arise from the Unnatural Distinctions Established in Society or The Vindication of the Rights of Women" In *A Vindication of the Rights of Women*, 212-224. London: T. Fisher Unwin, 1792.
- Knox, John. *The First Blast of the Trumpet Against the Monstrous Regiment of Women*, edited by Edward Arber. London, 1558.

TED Talks about trees:

- Preston, Richard. "The mysterious lives of giant trees." TED Talk, 19:31. Filmed February 2003.
- White, Topher. "What can save the rainforest? Your used cell phone." TED Talk, 9:30. Filmed September 2014.
- Asner, Greg. "Ecology from the air." TED Talk, 13:50. Filmed June 2013.

Newspaper Sources:

- Do, Quynhanh. "The Evolution of ISIS." *New York Times* video, 5:42. February 18, 2015.
- "How ISIS Works." *New York Times* interactive. September 16, 2014.

Art pieces:

- Petronio Bendito's "Natural Disaster Color" artworks
- Sashie Masakatsu's surrealist art about natural disasters

Articles from credible/relevant periodicals:

- Moyer, Michael. "Why Does Food Taste So Delicious." *Scientific American*, August 20, 2013.
- Kummer, Corby. "Breakfast with Zeke." *The Atlantic*, July 25, 2015.

TED Talk Trees Activity

This activity will be used to develop student abilities to Question and Explore (Big Idea 1), Understand and Analyze (Big Idea 2), and Evaluate Multiple Perspectives (Big Idea 3).

- Students will form small groups and complete a jigsaw activity with a variety of TED Talk pieces about trees. While the students have begun to develop the various QUEST skills during their AP Seminar course, the instructor will model each of the following activities using a separate source prior to the students completing the activity on their own source.
- Students will assess the credibility of the source by considering many of the components that are outlined in many EKs (relevance, credibility, reputation and credentials of author, perspectives represented,

research methods, reception by peers in the field) and using criteria of credibility tools including RAVEN and PAARC. **[CR1b]**

- In addition to this, they will be asked to summarize the main idea of the piece effectively as well as to summarize and then analyze the argument and line of reasoning presented in the piece. • To conclude this activity, students will be asked to evaluate the different arguments presented in each of the TED Talks and come to consensus as a group about which was the strongest argument based on their analysis and evaluation activities.
- They will craft a rationale for this as a group and explain their judgment to small groups for peer feedback and then to the instructor and class. This final synthesis activity will serve as an example of a small-scale version of the synthesis that will be required for their subsequent independent research.

[CR1b] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 2: Understand and Analyze.

Primary Text Analysis and Evaluation Activity

This activity will be used to develop student abilities to Evaluate Multiple Perspectives (Big Idea 3).

- Students will then be assigned the collection of primary text documents (from above) to read and analyze, and asked to identify a theme connecting the texts and the multiple perspectives that are identifiable within that theme. **[CR1c]**
- Selecting one of these texts, students will then consider strengths and weaknesses of the argument and evaluate the efficacy of the argument based on these. Students will then craft a written response to an instructor generated prompt. **[CR1c]**
- Students will discuss their analysis in small groups and exchange peer feedback, and then will present informally to the entire class. **[CR1c]**
- Students will receive individual feedback from the instructor about their analysis of the text. • Students will then use this foundation of knowledge to identify a potential area of inquiry related to the texts they analyzed.
- From this, small groups will use skills from the specific lesson on narrowing down areas of inquiry into research questions to formulate research question drafts. These will be peer reviewed based on the criteria given for crafting successful research questions. **[CR1a]**

[CR1c] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 3: Evaluate Multiple Perspectives.

[CR1a] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 1: Question and Explore.

Question Writing

Area of focus

Questions – draft versions

“Poster” presentation (graphic organizer to vet questions)

Refining questions

- Students will work on moving from identifying an area of inquiry to formulating a research question during the first quarter. **[CR1a]**
- Following instruction on crafting effective research questions, students will practice this in small groups and then individually. **[CR1a]**

- This will culminate in students presenting to the entire class in a “poster” presentation to explain their research question to the class, defend their choice, explain their planned research project and research method, and consider peer and instructor feedback. **[CR1a] [CR1g]**
- This process will result in continued refinement of the research question throughout the first quarter. **[CR1a]**

[CR1a] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 1: Question and Explore.

[CR1g] — Students develop and apply written and oral communication skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.

Ethical Research Practices – Academic Honesty, Plagiarism, IRBs, and Turnitin

- Students will receive a handout and digital copy of the school’s academic honesty policy and the AP Capstone Policy on Plagiarism and Falsification or Fabrication of Information (included at the end of the syllabus).
 - We will have a class discussion about plagiarism, followed by example scenarios that students will identify as plagiarism, poor scholarship, or neither of these. This will help both students and instructors to identify students’ understanding of what does and does not constitute plagiarism. **[CR2a]**
 - At this time, students will also receive a handout about Institutional Review Boards (IRBs) and the purpose of an IRB. **[CR2a]**
 - Students will explore two provided websites to understand what research projects might require IRB approval and what will not. Similar to the plagiarism exercise, students will be given sample scenarios to identify as either needing IRB approval or not requiring it. **[CR2a]**
- [CR2a]** — Students develop an understanding of ethical research practices.

Introduction of the PREP – Initial Activities (Weeks 2 and 3)

Initial PREP activities will include questions and prompts (such as those that follow) to encourage development of the research question and selection of an appropriate method for the inquiry process.

- From stimuli such as those mentioned below, identify five themes of potential interest. • Generate one key researchable question from each of these five themes (not a *formal* research question). • Pick the most interesting and relevant to you and consider it as a potential area of inquiry for your research project.
 - ◊ Identify an interesting article or news clipping that sparks an idea.
 - ◊ Watch headline news to help identify a world issue of interest.
 - ◊ Scour such websites such as TED Talks to identify issues of interest or problems that need a solution.
 - ◊ Talk to respected leaders in the field (start with someone you know; ask for their recommendations) to ask about problems that need solving within their industries.
 - ◊ Visit a museum.
 - ◊ Attend a concert, play, or lecture of interest (see if these spark an idea).
 - ◊ Read a popular press article in such magazines as *Time*, *Atlantic Monthly*, *Psychology Today*, *Scientific American*, etc.
- Additional PREP activities, prompts, and questions will continue throughout the year. **[CR4a]** • Students will document their research process in the PREP throughout the course of the research project. The PREP will be reviewed regularly by the instructor, and the student and instructor will meet to discuss student progress. **[CR4b]**
- Feedback on the PREP may be verbal (in one-on-one conferences) or written (digitally or in the PREP

itself). **[CR4b]**

[CR4a] — Students document their inquiry processes, communicate with their teachers and any expert advisors, and reflect on their thought processes.

[CR4b] — Students have regular work-in-progress interviews with their teachers to review their progress and to receive feedback on their scholarly work as evidenced by the PREP.

Introduction to Research Methods (Weeks 4–9)

Quantitative, qualitative, and mixed methods

Introduction to the literature review

Research Methods and Moving Toward Alignment

- During the first quarter there will be specific lessons on various approaches to qualitative research—including its parameters, and/or appropriate application. This will be followed by similar quantitative research lessons with activities designed to establish understanding of the approaches and appropriate uses for these methods. Finally, a discussion of mixed methods and when this is an appropriate choice for an area of inquiry will round out the introduction to research methods. **[CR1a]**
- The research methods will be explained and explored through “example” areas of inquiry (e.g., issues relating to animals in captivity) so that students will be able to transfer and apply their understanding of the different research methods to their actual area of inquiry. **[CR1a]**
- As part of this, students will read a variety of different example research papers and will, in small groups, analyze the papers for the specific discipline associated with their assigned research paper(s), the methods used in the research, and the discipline specific style of the resultant paper. They will discuss strengths and/or weaknesses of the various approaches taken, ultimately generating constructive hypothetical “feedback” about alignment and approach of the selected methods. **[CR1a]**
- Finally, students will consider their own chosen area of inquiry and complete a PREP entry (in response to a given prompt) that identifies, explains and offers a rationale for the research method (and its alignment) that they are intending for their project. **[CR1a]**

[CR1a] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 1: Question and Explore.

Research Plan of Attack

What do you know?

What do you need to know?

Wish list of sources?

- Through a series of activities, regular conferencing with the instructor, and weekly work with the PREP, students will continue to formulate a plan of attack for their research and what resources they will seek. • They will consider what knowledge they have already and what their initial research has indicated to create a plan going forward to successfully research their area of inquiry and to answer their research question. • There will be a focus on intentional analysis of all sources—from basic credibility and relevance (RAVEN) and analysis (PAARC) to identifying the perspective represented by the source, to evaluation of the argument/source’s line of reasoning and evidence. This will lead students to effective synthesis of sources throughout the research project and will be incorporated into an annotated bibliography and their literature review. **[CR1d]**

[CR1d] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 4: Synthesize Ideas.

Finding an Expert Advisor

To engage in a community of scholars, students must learn with whom to engage, how to engage them, and what to engage them about. These following questions (responses in the PREP) are designed to get students to reflect on these questions before (and while) seeking out an expert advisor for advice.

Throughout the year, as you consider how someone who works in your field of inquiry can assist you, ask yourself these questions:

1. What is the most important question or set of questions that you could ask of someone working in your field of inquiry *at this stage* in your inquiry process?
2. Who would be the most appropriate person to whom you could ask this question or set of questions?
3. What is the best way to approach this person with these questions?

Expert Advisor Protocol

Expectations

Communication

Goal-setting

Defining roles

Expert Advisors may be drawn from the following sources:

- Faculty
- Community
- Local or nonlocal businesses and industries
- Higher education institutions

Students will do research and inquiry to create a list of potential expert advisors and appropriate contact information in their PREP. They will write a rationale for their top potential choices and will draft an initial communication to the potential expert advisors. They will meet with the instructor to discuss their expert advisor plan. The list and initial communication (email, letter, “plan” for phone call) will be vetted by the instructor before being sent. **[CR1e]**

The instructor and student will review the role of the expert advisor and how this will relate to the student’s specific area of inquiry. Students will understand the role of expert advisors as follows:

- *When asked, should provide feedback and guidance to students regarding their choice of research questions/project goals, data- or information-collection methods, and analysis strategies*
- *May hold individual work-in-progress interviews with students to discuss the progress of their papers or presentations, explore issues and/or discuss topics and perspectives, and question students as necessary*
- *May provide necessary background for a topic — including suggesting possible resources — so that students are not disadvantaged in their exploration*
- *May help students with the mechanics of the research process (e.g., strategizing to find answers to questions, helping them understand how to access resources, etc.)*
- *May provide general feedback to students about elements of their papers or presentations that need improvement*
- *May vary in number, according to the needs of the paper or presentation*

(Based on criteria in the AP Research Course and Exam Description)

[CR1e] — Students develop and apply collaboration skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.

Data Base/Source Tutorial/Review

EBSCOhost

ProQuest

Gale

Public library

University options, et al.

- While students have learned about and accessed many of these sources during their AP Seminar experience, the first quarter will be a good time to revisit these various research options and the rich resources they may prove to be.
- This will take the form of a research scavenger hunt, specific activities that will require accessing a number of the above listed sources (or others the students find on their own), and a reflective piece with analysis and evaluation of the different sources as they relate to the student's specific area of inquiry. **[CR1b]**
- This will lead to practicing and applying the skills of synthesis as the students will respond to a prompt (in the PREP) about the general conclusion they can make—to this point—regarding what their research indicates about their area of inquiry. **[CR1d]**

[CR1b] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 2: Understand and Analyze.

[CR1d] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 4: Synthesize Ideas.

Annotated Bibliography

- Students will continue to collect research from a variety of appropriate sources and keep a properly formatted bibliography from the outset of the project. Sources should be recorded in the PREP, but a separate, digital version should exist as well.
- Students will be instructed on the value of an annotated bibliography, and explore how an annotated bibliography is distinctly different from a literature review.
- Students will learn how their annotated bibliography is an excellent tool to record the relevance, credibility, and value of a particular source in relation to their area of inquiry. **[CR1b]**
 - Students will use their annotated bibliography as a means of examining multiple and alternative perspectives about their topic. This analysis will help students recognize whether or not they are successfully considering multiple perspectives as they research to answer their question. **[CR1c]**
- Additionally, students will be expected to use their annotated bibliographies as a tool to help create their literature review.

[CR1b] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 2: Understand and Analyze.

[CR1c] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 3: Evaluate Multiple Perspectives.

Inquiry Proposal Form

- We will review the requirements of the Inquiry Proposal Form, and students will use some of the activities and prompts from the PREP, as well as the work they have done so far in the first quarter with research

methods, analysis and evaluation of sources, and developing a research plan to complete the proposal.

- Prior to submitting their proposal forms, students will engage in peer review to analyze the inquiry proposal based on the course criteria, and then exchange constructive feedback. After considering feedback, students will revise, then submit their proposal for instructor approval. **[CR3]**
- Pending instructor feedback and approval, approval with proviso, or return for revision, students will either refine and resubmit, or proceed based on their outlined research plan. **[CR3]**

[CR3] — In the classroom and independently (while possibly consulting any expert advisors), students learn and employ research and inquiry methods to develop, manage, and conduct an in-depth investigation of an area of personal interest, culminating in an academic paper of 4,000-5,000 words that includes the following elements:

- Introduction
- Method, Process, or Approach
- Results, Product, or Findings
- Discussion, Analysis, and/or Evaluation
- Conclusion and Future Directions
- Bibliography

Literature Review

- Through direct instruction, examples, and practice, students will learn what a literature review is, why it is important, and what role it will play in their research project. We will explore the scope of what a literature review can accomplish as well as common pitfalls of the literature review.
- Throughout the first, second, and third quarter, students will be expected to maintain a current review of the literature they have read/listened to/watched relating to their area of inquiry to ensure that their project is carried out within this context. **[CR1b]**
- Students will be expected to maintain this in their PREP and be prepared to discuss or explain it during regular (scheduled) peer feedback sessions, one-on-one conferences with the instructor, and/or interactions with the expert in the field with whom they may be consulting.

[CR1b] — Students develop and apply discrete skills identified in the learning objectives within the Big Idea 2: Understand and Analyze.

QUEST - Big Ideas 1 through 5 (Second Quarter: Weeks 10–18)

- Students recruit and begin communication with expert advisors, submit a proposal, and reflect on feedback received.
- Students complete the background component of their inquiry and finalize the choice and design of their inquiry method. If necessary, they submit a revised version of their proposal for final approval. *Proposals should be approved by the teacher no later than November 30.* **[CR3]**
- Students implement their inquiry methods while engaging in progress and reflection interviews with the teacher to ensure challenges with methods and time management are addressed. *Students curate the inquiry process, writing, and reflection artifacts from September to March in their process and reflection portfolios (PREP).* **[CR4a]**

[CR3] — In the classroom and independently (while possibly consulting any expert advisors), students learn and employ research and inquiry methods to develop, manage, and conduct an in-depth investigation of an area of personal interest, culminating in an academic paper of 4,000-5,000 words that includes the following elements:

- Introduction
- Method, Process, or Approach
- Results, Product, or Findings
- Discussion, Analysis, and/or Evaluation
- Conclusion and Future Directions

- Bibliography

[CR4a] — Students document their inquiry processes, communicate with their teachers and any expert advisors, and reflect on their thought processes.

Implement Inquiry Methods

Apply discipline appropriate methodology

Apply effective research strategies

Organize and record research findings

PREP

Annotated bibliography

- Students will continue with the development of the **LOs** from the first quarter while conducting their research project. They will continue to apply the **big ideas (QUEST)** to their investigation and will continue to record their progress in the **PREP** based on independent work in the PREP as well as instructor generated prompts, activities, and questions.
- Students will continue to work with their **expert advisor** to receive project-specific guidance as they research, and will continue to meet regularly with the instructor to discuss their progress, their challenges, and their victories. **[CR1e]**
- Students will work toward all of the **Learning Objectives (and associated EKs)** of Question and Explore, Understand and Analyze, Evaluate Multiple Perspectives, and Synthesize Ideas, while beginning to address elements of Big Idea 5 – Team, Transform, and Transmit.

[CR1e] — Students develop and apply collaboration skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.

Presentation Skills

- There will be a focus on elements of effective presentations that will build on skills initially learned in the AP Seminar course. The focus will move toward more in-depth presentations, and examples from the National Council on Undergraduate Research (NCUR) will serve as a baseline for expectations of quality. **[CR1g]**
- Students will analyze exemplary presentations based on the rubric and identify areas of strength and areas of weakness. **[CR1g]**
- We will consult with the speech and debate instructor and the drama instructor for mini-workshops to focus on skills of effective delivery, and students will practice by presenting their question and research “to date” at different points in the quarter. **[CR1g]**
- Students will receive peer and instructor feedback in addition to critiquing their own (recorded) presentations according to the rubric. **[CR1g]**

[CR1g] — Students develop and apply written and oral communication skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.

QUEST - Big Ideas 1 through 5 (Third Quarter: Weeks 20–29 and Fourth Quarter: Weeks 30–37)

- Students implement their inquiry methods while engaging in progress and reflection interviews with the teacher to ensure challenges with methods and time management are addressed. Students curate the inquiry process, writing, and reflection artifacts from September to March in their process and reflection portfolios (PREP). **[CR4a]**
- Students write, proofread, peer review, and submit their academic papers, ensuring all components are present and meet rubric criteria. Students finalize additional scholarly work or product if such was required

as a result of their inquiry. [CR1g]

[CR4a] — Students document their inquiry processes, communicate with their teachers and any expert advisors, and reflect on their thought processes.

[CR1g] — Students develop and apply written and oral communication skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.

Implement Inquiry Methods

Apply discipline appropriate methodology

Apply effective research strategies

Informal annotated bibliography (in PREP)

Organize and record research findings PREP

- Students will continue with the development of the **LOs** from the first quarter while conducting their research project. They will continue to apply the **Big Ideas (QUEST)** to their investigation and will continue to record their progress in the **PREP** based on independent work in the PREP as well as instructor generated prompts, activities, and questions.
 - Students will continue to work with their expert advisor to receive project-specific guidance as they research, and will continue to meet regularly with the instructor to discuss their progress, their challenges, and their victories.
 - This will work toward all of the **Learning Objectives (and associated EKs)** of **Question and Explore, Understand and Analyze, Evaluate Multiple Perspectives, Synthesize Ideas, and Team, Transform, and Transmit.**

Submitting Final Paper and Presentations

- Students will complete and **submit their final research project**, having gone through an extensive peer and expert-in-the-field review process (description follows) in addition to their own rubric-based assessment of their work.
- We will discuss appropriate forms of **media** for their presentations and view a variety of examples of use of media for presentations. In small groups they will discuss the strengths and weaknesses of the approaches/methods identified in the examples. Students will explore what is appropriate media for their specific area of inquiry.
- Students will then **prepare their presentation and associated media** and will familiarize themselves with the potential questions that may be asked of them during the **presentation and oral defense**. (These can be found in the Course and Exam Description along with the Task Instructions. Students will have access to these when they receive the official Task Instructions.) In small groups, students will practice presenting their project, and will record their practice presentation. They will then participate in peer review activities, as well as being required to assess their own presentation practice using the rubric guidelines. Their assessment of their own practice presentation will be recorded in their PREP. [CR5]
- Students will finish a **full draft** of their paper by February 16, and go through a **peer review** process with classmates, in addition to meeting with (virtually or actually) their expert in the field for feedback on the draft, each of who will use the course rubric to assess the effectiveness of the paper and offer general feedback. Students will continue to apply the QUEST skills as well as the feedback from peer and expert advisor review to develop and hone their paper throughout the third quarter in preparation for their due date in the last week of March. [CR3]
- Prior to submitting their final draft, students will use the course task descriptions and the rubric to assess their own paper. Using a color-coding system, they will annotate their own work based on the rubric elements, noting where there is clear, consistent evidence of each of the assessed learning objectives.

[CR5] — Students develop and deliver a presentation (using an appropriate medium) and an oral defense to a panel on their research processes, method, and findings.

[CR3] — In the classroom and independently (while possibly consulting any expert advisors), students learn and employ research and inquiry methods to develop, manage, and conduct an in-depth investigation of an area of personal interest, culminating in an academic paper of 4,000-5,000 words that includes the following elements:

- Introduction
- Method, Process, or Approach
- Results, Product, or Findings
- Discussion, Analysis, and/or Evaluation
- Conclusion and Future Directions
- Bibliography

Students Submit and Present their Work/Instructor Scores Work

- March 15–30: Students complete papers.
- April 1–15: Students prepare, practice, and deliver presentations with oral defense. Students must arrange for viewing of additional scholarly work by teacher and panelists prior to giving their presentations and oral defense (where applicable). **[CR5]**
- April 15–30: Teachers finalize and upload scores for papers and presentations with oral defense. AP Research students present a summary of work and lessons learned to AP Seminar students.

[CR5] — Students develop and deliver a presentation (using an appropriate medium) and an oral defense to a panel on their research processes, method, and findings.

Post Research Project

- With the time remaining in the school year, students will further practice the skills of reflection in the PREP based on instructor prompts, questions, and activities to consider their project in a larger context, and to thoughtfully reflect on both their content and their process as they move throughout the year. **[CR1f]**
- Students will be expected to (among other things) consider the implications of their research findings in the bigger context, as well as the implications for themselves as scholars going forward. **[CR1f]** • Finally, students will serve as mentors for the students who are finishing up their AP Seminar course and are just embarking on the segue from AP Seminar to AP Research.
- In a roundtable format, AP Research students will meet with current AP Seminar students to discuss the evolution of their research project as it moved from area of inquiry, to specific research question, to a draft of a paper to their final paper and presentation.
- They will focus on the connection between their own research and the larger field in an attempt to make clear their own personal contribution to the area of inquiry. **[CR1f]**

[CR1f] — Students develop and apply reflection skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.