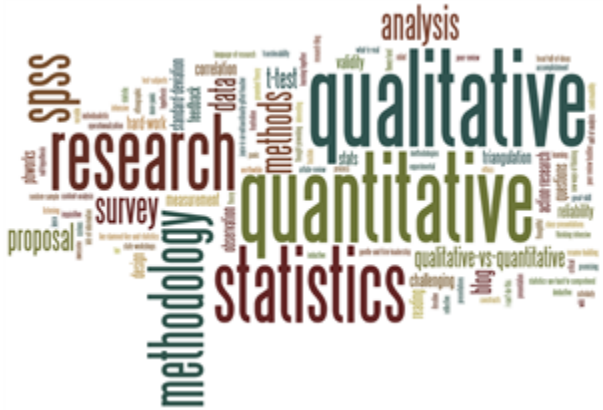
AP RESEARCH CURRICULUM



Grade Level(s): 11-12

Curriculum Author(s): Jessica McKay

Course Description:
In AP Research, the second course in the AP Capstone program, students cultivate the skills and discipline necessary to conduct independent research and inquiry in order to produce and defend their scholarly work. This course allows students to deeply explore an academic topic, problem, issue, or idea of individual interest. Students design, plan, and implement a yearlong investigation to address a research question. Through this inquiry, they further the skills they acquired in the AP Seminar course by learning research methodology, employing ethical research practices, and accessing, analyzing, and synthesizing information. Students reflect on their skill development, document their processes, and curate the artifacts of their scholarly work through a process and reflection portfolio. The course culminates in an academic paper of 4,000-5,000 words (accompanied by a performance, exhibit, or product where applicable) and a presentation with an oral defense.

The AP Capstone program aims to empower students by:

1. engaging them with rigorous college-level curricula focused on the skills necessary for successful college completion;
2. extending their abilities to synthesize information from multiple perspectives and apply skills in new situations and cross-curricular contexts;
3. enabling them to collect and analyze information with accuracy and precision;
4. cultivating their abilities to craft, communicate, and defend evidence-based arguments; and
5. providing opportunities for them to practice disciplined and scholarly research skills while exploring relevant topics that appeal to their interests and curiosity.

The big ideas and learning objectives in the AP Capstone program reflect the core academic skills needed for college, career, and life readiness identified by leading educational organizations and College Board membership.

Year At A Glance			
Unit Title	**Overarching Essential Question**	**Overarching Enduring Understanding**	**Vision of A Learner "I Can" Statements**
Unit 1 | Research Overview 1-2 Weeks (September)	What information/evidence do I need to answer my research question?	Scholars perform, present, and/or produce their work within a larger community. Throughout the inquiry process, scholars interact with and benefit from the scholarly community through thoughtful engagement with the opinions and critiques of others.	TI1(9-12), TI4(9-12), P2, AA2(9-12)
Unit 2 | Topic Exploration 3-4 Weeks (September-October)	What do I want to know, learn, or understand?	Personal interest and intellectual curiosity inspire investigation of topics or issues that may or may not be clearly defined. A well crafted investigation explores the complexity of an issue or topic. Further inquiry can lead to unexpected conclusions, resolutions, innovations, or solutions.	TCC1(9-12), CCE2(9-12), CCE3(9-12), CCE4(9-12), TI3(9-12)
Unit 3 | The Literature Review 4-6 Weeks (October-November)	How do I connect and analyze the evidence in order to develop an argument and support a conclusion?	Not all arguments are equal; some arguments are more credible/valid than others. Through evaluating others' arguments, one's own argument can be situated within a larger conversation.	TCC2(9-12), CCE1 (9-12), TI3(9-12), AA4(9-12)
Unit 4 | Foundations in Methodology 4-6 Weeks (November-January)	What information/evidence do I need to answer my research question?	The investigative process is aided by the effective organization, management, and selection of resources and information. Appropriate technologies and tools enable the scholar to become more efficient, productive, and credible.	TCC2(9-12), CCE4(9-12), TI1(9-12), TI2(9-12), AA1(9-12)

Unit 5 | Methodology and Data Collection 4-6 Weeks (January-March)	What information/evidence do I need to answer my research question?	There are multiple ways to investigate questions, problems, and issues. Methods should be aligned with the purpose of the inquiry.	TCC2(9-12), TCC4(9-12), CCE2 (9-12), CCE3 (9-12), CCE4 (9-12), TI1(9-12), TI4(9-12)
Unit 6 | The Academic Paper 3-4 Weeks (March)	How does my scholarly work emerge from my perspective, design choices, or aesthetic rationale? How do I provide feedback that is valuable to others? How do I act upon feedback I have received?	Forming one's own perspective and reaching new understandings involve innovative thinking and synthesis of existing knowledge with personally generated evidence.	TCC2(9-12), TCC3(9-12, CCE2 (9-12), CCE4 (9-12)
Unit 7 | The Presentation and Oral Defense 4 Weeks (April)	How can I best appeal to and engage my audience?	Scholars perform, present, and/or produce their work within a larger community. Throughout the inquiry process, scholars interact with and benefit from the scholarly community through thoughtful engagement with the opinions and critiques of others.	CCE4 (9-12)
Unit 8 | Authentic Applications 4-5 Weeks (May-June)	What might others in the larger academic community learn from my research and experiences?	Reflection increases learning, self-awareness, and personal growth through identification and evaluation of personal conclusions and their implications.	TCC4(9-12), CCE4 (9-12), TI4(9-12)

Unit 1 - Research Overview

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org

The purpose of this brief unit is to establish a foundation of expectation for students based on the requirements of the AP Research course. By the end of the unit, they will know and understand the expectations and success criteria that will be evaluated when they submit their academic papers and deliver their presentations/oral defense in April/May in the College Board digital portfolio.

Question and Explore:
- EK 1.1B1, EK 1.1D3, EK 1.5A1, EK 1.5B1

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)
TAKE INITIATIVE:
TI1(9-12): I can implement a realistic plan and adapt when necessary to achieve my goals.
TI4(9-12): I can apply my strengths and anticipate challenges to reach my current and future goals.

PERSEVERE:
P2: Believe that individuals can strengthen weaknesses through purposeful strategies, practice, and effort.

ADAPT AND ADJUST:
AA2(9-12): I can assess my past successes and mistakes to change my approach.

Understandings: Students will understand that...
Question and Explore:
- EU 1.5: There are multiple ways to investigate questions, problems, and issues. Methods should be aligned with the purpose of the inquiry.

Understand and Analyze:
- EU 2.1: Authors express their ideas, perspectives, and/or arguments through their works. The first step in evaluating an author's perspective or argument is to comprehend it. Such comprehension requires reading, viewing, listening, and thinking

Essential Questions:
Question and Explore:
- What information/evidence do I need to answer my research question?

Understand and Analyze:
- How can I assess the quality or strength of others' research, products, or artistic works?

critically. Team, Transform, and Transmit: ● EU 5.4: Scholars perform, present, and/or produce their work within a larger community. Throughout the inquiry process, scholars interact with and benefit from the scholarly community through thoughtful engagement with the opinions and critiques of others.	
Students will know... Question and Explore: ● EK 1.1B1: Effective research questions lead to an examination taking into account the complexity of a problem or issue. ● EK 1.1D3: Scholarly inquiry should be situated within a broader understanding of the scholarly community and of importance and relevance to that community. ● EK 1.5A1: The way the problem is posed, situated, framed, or contextualized will guide the inquiry process and influence the type of information needed and appropriate method of gathering it. ● EK 1.5B1: Methods for data collection, analysis, innovation, and/or interpretation should be aligned with the research question/project goal.	**Students will be able to...** Question and Explore: ● LO 1.1D: Articulating the purpose and significance of the scholarly inquiry. ● LO 1.5A: Identifying the information needed for the context of the inquiry. ● LO 1.5B: Designing, planning, and implementing a scholarly inquiry
Key Vocabulary: Academic Paper, Line of Reasoning, Big "R" Research, Research Cycle, Discipline, Discipline-Specific Style, Introduction/Significance, Literature Review, Method, Methodology, Conclusions, Findings	
Assessment Evidence	
Performance Tasks: *Summative*: Sample Reflection and Year-Long Goal Plan	**Other Evidence:** **Process and Reflection Portfolio (PReP)*: 1. Sample academic paper and presentation notes 2. Strengths and areas for improvement reflection 3. Personal goal setting: framing your learning *Interim:* Sample Paper Review/Critique

	Review of the Academic Paper and Presentation Task: ● Goal setting for success *Review of the Academic Paper and Presentation Scoring Rubrics and Notes* ● Creating a success criteria checklist and putting the rubrics into "student friendly" terminology *Denotes a College Board required activity for students to complete throughout the year and collected after academic paper and presentation scores have been submitted by the Research teacher as evidence of the research process.

Learning Plan

Summative: Reflection on academic paper and presentation samples to identify individual strengths and weaknesses while setting goals for personal growth through the research process. Response includes reflections on experiences, challenges, successes in AP Seminar and other classes.

1. Step 1: Review task directions and rubrics
2. Step 2: Review samples
3. Step 3: Put rubrics in "student-friendly" language and create a tentative checklist for success
4. Step 4: Complete interim Sample Paper Review/Critique
5. Step 5: Complete reflection summative

This summative meets the following attributes for Region 14's Vision of a Learner:

TAKE INITIATIVE:
- TI1(9-12): I can implement a realistic plan and adapt when necessary to achieve my goals.
- TI4(9-12): I can apply my strengths and anticipate challenges to reach my current and future goals.

PERSEVERE:
- P2: Believe that individuals can strengthen weaknesses through purposeful strategies, practice, and effort.

ADAPT AND ADJUST:
- AA2(9-12): I can assess my past successes and mistakes to change my approach.

Teacher Resources:

- Current AP Research Course and Exam Description
- AP Research Student Workbook
- AP Research Performance Task Directions and Scoring Guidelines/Notes
- College Board released sample academic papers and scoring notes
- Prior AP Research student academic papers and presentation videos
- *Practical Research: Planning and Design* by Paul Leedy and Jeanne Ormrod

Unit 2 - Topic Exploration

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

The purpose of this unit is to help students explore a variety of topics in order to narrow their focus for the research project of their choosing.

Question and Explore:
- EK 1.1A1, EK 1.1B1, EK 1.1B2, EK 1.1C1, EK 1.1C2, EK 1.1C3, EK 1.1D1, EK 1.1D2, EK 1.1D3, EK 1.1E1 , EK 1.1E2

Synthesize Ideas:
- EK 4.1B1, EK 4.1B2, EK 4.1B3EK 4.1B4

Team, Transform, and Transmit:
- EK 5.3A4

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)
THINK CRITICALLY AND CREATIVELY:
- TCC1(9-12): I can ask purposeful, insightful questions to find a variety of innovative solutions.

COLLABORATE AND COMMUNICATE EFFECTIVELY:
- CCE1(9-12): *I can engage others in meaningful conversations while respecting multiple perspectives.*
- CCE2(9-12): *I can seek, accept, and apply actionable feedback.*
- CCE3(9-12): *I can lead group progress through active listening, questioning, and giving advice.*
- CCE4(9-12): *I can express ideas in a variety of ways, according to context, purpose, and audience.*

TAKING INITIATIVE:
- TI3(9-12): I can formulate and investigate probing questions to further my learning.

ADAPT AND ADJUST:
- AA4(9-12): I can create opportunities to extend my learning by remaining open-minded in any situation.

Understandings: Students will understand that… Question and Explore:	**Essential Questions:** Question and Explore:

• EU 1.1: Personal interest and intellectual curiosity inspire investigation of topics or issues that may or may not be clearly defined. A well crafted investigation explores the complexity of an issue or topic. Further inquiry can lead to unexpected conclusions, resolutions, innovations, or solutions. Synthesize Ideas: • EU 4.1: Scholarly works convey perspectives and demonstrate effective reasoning that have been selected for the intended audience, purpose, and situation. Team, Transform, and Transmit: • EU 5.3: Reflection increases learning, self-awareness, and personal growth through identification and evaluation of personal conclusions and their implications.	• What do I want to know, learn, or understand? • What questions have yet to be asked? • How does my research question shape how I go about trying to answer it?
Students will know... Question and Explore: • EK 1.1A1: Examining the perspectives and ideas of others often leads to questions for further investigation. Inquiry begins with narrowing scope of interest, identifying a problem or issue and its origins within that scope, and situating the problem or issue in a larger context. • EK 1.1B1: Effective research questions lead to an examination taking into account the complexity of a problem or issue. • EK 1.1B2: The inquiry process allows one to draw upon curiosity and imagination to engage with ideas or explore approaches to complex issues. • EK 1.1C1: Topics of inquiry may come from personal interest, passion for a discipline/field, desire to better understand a topic, or desire to address an issue in the world. • EK 1.1C2: The inquiry process involves exploring the knowledge base associated with the topic of interest, including a variety of perspectives, and adjusting the scope of the topic to the parameters, requirements, and resources available for the	**Students will be able to...** Question and Explore: • LO 1.1A: Contextualizing and identifying the complexities of a problem or issue. • LO 1.1B: Posing questions and seeking out answers that reflect multiple, divergent, or contradictory perspectives. • LO 1.1C: Identifying a topic of inquiry. • LO 1.1D: Articulating the purpose and significance of the scholarly inquiry. • LO 1.1E: Developing and revising a focused research question/project goal. Synthesize Ideas: • LO 4.1B: Selecting and consistently applying an appropriate disciplinary or interdisciplinary approach to form a scholarly argument or aesthetic rationale. Team, Transform and Transmit: • LO 5.3A: Reflecting on and revising their own writing, thinking,

project. • EK 1.1C3: Inquiry allows for the discovery of connections that can increase curiosity or understanding and lead to further questions • EK 1.1D1: Scholars explore, explain, and create. • EK 1.1D2: The purpose of scholarly inquiry is to address various kinds of problems (e.g., practical, theoretical, interpretive, aesthetic) and/or corroborate, challenge, or extend an existing idea. • EK 1.1D3: Scholarly inquiry should be situated within a broader understanding of the scholarly community and of importance and relevance to that community. • EK 1.1E1: A research question/project goal emerges from the scholar's purpose (i.e., to explore, explain, and create). • EK 1.1E2: A research question/project goal often requires multiple revisions to ensure it is appropriate in terms of scope and feasibility (time, resources). Synthesize Ideas: • EK 4.1B1: Each discipline has its own conventions and ways of knowing, questioning, and communicating. • EK 4.1B2: Scholars apply discipline-specific terminology in the analysis of scholarly works. • EK 4.1B3: The different disciplines and associated ways of knowing and valuing information are discovered in part through engaging with discipline-specific foundational texts and works. • EK 4.1B4: Disciplines may be broadly or narrowly defined. Disciplines can intersect or be combined to provide new understandings or perspectives Team, Transform, and Transmit: • EK 5.3A4: Scholars reflect on how the inquiry process helped them deepen their understanding, make important connections, and develop greater self-direction.	and creative processes.
Key Vocabulary: Inquiry, Conclusion, Solution, Context, Perspectives, Goal, Research Question, Point of View, Thesis, Claim, Line of Reasoning,	

Argument, Rationale, Commentary, Reasoning

Assessment Evidence	
Performance Tasks: *Summative #1:* Preliminary Research Question Proposal *Summative #2:* Research Question Proposal Presentation	**Other Evidence:** *Common Formative Assessments:* ● Topics Brainstorm Graphic Organizer ● "Discipline-Specific" Group Activity (understanding the attributes of discipline-specific research) ● Research Question Development Worksheet ● 25 Sources Journal *Interims:* ● 25 Sources Reflection ● Research Question Proposal Graphic Organizer ● Rough Draft of Research Question ● Establishing Context and Significance Paragraph

Learning Plan

THINK CRITICALLY AND CREATIVELY:

- TCC1(9-12): I can ask purposeful, insightful questions to find a variety of innovative solutions.

Summative #1: Preliminary Research Question Proposal
Summative #2: Research Question Proposal Presentation
CFA #1: Topic Exploration Brainstorm Worksheet
CFA #2: 25 Sources Journal

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE2(9-12): *I can seek, accept, and apply actionable feedback.*
- CCE3(9-12): *I can lead group progress through active listening, questioning, and giving advice.*

CFA #1: Peer review of research question proposal
CFA #2: Peer review of presentation

- CCE4(9-12): *I can express ideas in a variety of ways, according to context, purpose, and audience.*

Summative #1: Preliminary Research Question Proposal
Summative #2: Research Question Proposal Presentation

TAKING INITIATIVE:

- TI3(9-12): I can formulate and investigate probing questions to further my learning.

Summative #1: Preliminary Research Question Proposal
Summative #2: Research Question Proposal Presentation

Teacher Resources: Resources include, but are not limited to:

- Current AP Research Course and Exam Description
- AP Research Student Workbook
- AP Research Performance Task Directions and Scoring Guidelines/Notes
- *Practical Research: Planning and Design* by Paul Leedy and Jeanne Ormrod
- Databases provided through the NHS Library Resource Website: Statista, Gale, EBSCOHost, JSTOR
- Databases provided through the digital portfolio in College Board
- AllSides.com
- Technology: Google Slides, Google Docs, Google Shared Drive
- Teacher and student selected materials based on research topic/interest

Unit 3 - The Literature Review

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

Question and Explore:
- EK 1.1A1, EK 1.1B1, EK 1.1B2, EK 1.1C2, EK 1.1D3, EK 1.1E2, EK 1.3A1, EK 1.3A2, EK 1.3A3, EK 1.3A4, EK 1.3A5, EK 1.4A1, EK 1.4A2, EK 1.4A3

Understand and Analyze:
- EK 2.2B3, EK 2.2B4, EK 2.2B5, EK 2.2B6, EK 2.2C1, EK 2.2C2, EK 2.2D1

Evaluate Multiple Perspectives:
- EK 3.2A1, EK 3.2A2

Synthesize Ideas:
- EK 4.2A1, EK 4.2A2, EK 4.2A3, EK 4.2A4, EK 4.2B1, EK 4.3A1, EK 4.3A2, EK 4.3A3, EK 4.3A4, EK 4.3A5, EK 4.3A6

Team, Transform, and Transmit:
- EK 5.1A1[R], EK 5.1A2

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)

THINK CRITICALLY AND CREATIVELY:
- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.

COLLABORATE AND COMMUNICATE EFFECTIVELY:
- CCE1: Engage others in meaningful conversations while respecting multiple perspectives.

TAKE INITIATIVE:
- TI3(9-12): I can formulate and investigate probing questions to further my learning.

ADAPT AND ADJUST:
- AA4(9-12): I can create opportunities to extend my learning by remaining open-minded in any situation.

Understandings: Students will understand that…

Question and Explore:

- EU 1.1: Personal interest and intellectual curiosity inspire investigation of topics or issues that may or may not be clearly defined. A well crafted investigation explores the complexity of an issue or topic. Further inquiry can lead to unexpected conclusions, resolutions, innovations, or solutions.
- EU 1.3: The investigative process is aided by the effective organization, management, and selection of resources and information. Appropriate technologies and tools enable the scholar to become more efficient, productive, and credible.
- EU 1.4: The relevance and credibility of the source of information is determined by the context of its use.

Understand and Analyze:

- EU 2.2: Authors choose evidence to shape and support their arguments. Individuals evaluate the line of reasoning and evidence to determine to what extent they believe or accept an argument.

Evaluate Multiple Perspectives:

- EU 3.2: Not all arguments are equal; some arguments are more credible/valid than others. Through evaluating others' arguments, one's own argument can be situated within a larger conversation.

Synthesize Ideas:

- EU 4.2: Scholars responsibly and purposefully engage with the evidence to develop a compelling argument or aesthetic rationale.

Team, Transform, and Transmit:

- EU 5.1: How a perspective or argument is presented affects how people interpret or react to it. The same perspective or argument may be developed or presented differently depending on audience, purpose, and context.

Essential Questions:

Question and Explore:

- What information/evidence do I need to answer my research question?

Understand and Analyze:

- What biases may the author have that influence his or her perspective?
- Does this argument acknowledge other perspectives?

Evaluate Multiple Perspectives:

- 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?

Synthesize Ideas:

- How do I connect and analyze the evidence in order to develop an argument and support a conclusion?
- 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?

Team, Transform, and Transmit:

- 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?

Students will know...	**Students will be able to…**
Question and Explore: • EK 1.1A1: Examining the perspectives and ideas of others often leads to questions for further investigation. Inquiry begins with narrowing scope of interest, identifying a problem or issue and its origins within that scope, and situating the problem or issue in a larger context. • EK 1.1B1: Effective research questions lead to an examination taking into account the complexity of a problem or issue. • EK 1.1B2: The inquiry process allows one to draw upon curiosity and imagination to engage with ideas or explore approaches to complex issues. • EK 1.1C2: The inquiry process involves exploring the knowledge base associated with the topic of interest, including a variety of perspectives, and adjusting the scope of the topic to the parameters, requirements, and resources available for the project. • EK 1.1D3: Scholarly inquiry should be situated within a broader understanding of the scholarly community and of importance and relevance to that community. • EK 1.1E2: A research question/project goal often requires multiple revisions to ensure it is appropriate in terms of scope and feasibility (time, resources). • EK 1.3A1: Information used to address a problem may come from various secondary sources (e.g., articles, other studies, analyses, reports) and/or primary sources (e.g., original texts and works, material culture, or personally collected data such as from experiments, surveys, questionnaires, interviews, observations, personal narratives). • EK 1.3A2: Online databases (e.g., EBSCO, ProQuest, JSTOR, Google Scholar) and libraries catalog and house secondary and some primary sources. • EK 1.3A3: Advanced search tools, Boolean logic, and key words allow scholars to refine, focus, and/or limit their searches based on a variety of factors (e.g., date, peer-review status, type of publication).	Question and Explore: • LO 1.1A: Contextualizing and identifying the complexities of a problem or issue. • LO 1.1B: Posing questions and seeking out answers that reflect multiple, divergent, or contradictory perspectives • LO 1.1D: Articulating the purpose and significance of the scholarly inquiry. • LO 1.1E: Developing and revising a focused research question/project goal. • LO 1.3A: Accessing and managing information using effective strategies. • LO 1.4A: Evaluating the relevance and credibility of the source of information and data in relation to the inquiry. Understand and Analyze: • LO 2.2B: Evaluating the relevance and credibility of evidence used to support an argument, taking context into consideration. • LO 2.2C: Evaluating the validity of an argument. • LO 2.2D: Evaluating and critiquing others' inquiries, studies, artistic works, and/or perspectives. Evaluate Multiple Perspectives: • LO 3.2A: Evaluating alternate, opposing, or competing perspectives or arguments, by considering their implications and limitations. Synthesize Ideas: • LO 4.2A: Interpreting, using, and synthesizing qualitative and/or quantitative data/information from various perspectives and sources (e.g., primary, secondary, print, nonprint) to develop and support an argument. • LO 4.2B: Providing insightful and cogent commentary that links evidence with claims. Team, Transform, and Transmit:

• EK 1.3A4: Consulting the bibliographies of other sources may provide additional ideas or resources. • EK 1.3A5: Social media may be used as a potential source of information, but an understanding of its limitations is necessary to maintain credibility. • EK 1.4A1: The scope and purpose of one's research and the credibility of sources affects the generalizability and the reliability of the conclusions. • EK 1.4A2: Credibility of evidence depends on use of sources and data that are relevant and reliable (current, authoritative). • EK 1.4A3: Determining the credibility of a source requires considering and evaluating the reputation and credentials of the author, publisher, site owner, and/or sponsor; understanding and evaluating the author's perspective and research methods; and considering how others respond to their work. Scholarly articles are often peer-reviewed, meaning the research has been reviewed and accepted by disciplinary experts. Understand and Analyze: • EK 2.2B3: Authors strategically include evidence to support their claims. • EK 2.2B4: Writers appeal to (or possibly manipulate) readers through a variety of strategies and techniques (e.g., language, authority, qualifiers, fallacies, emphasis). • EK 2.2B5: Evidence may be used to identify and explain relationships (comparative, causal, or correlational) and/or patterns and trends. • EK 2.2B6: Credibility is compromised when authors fail to acknowledge and/or consider the limitations of their conclusions, opposing views or perspectives, and/or their own biases. • EK 2.2C1: An argument is valid when there is logical alignment between the line of reasoning and the conclusion. • EK 2.2C2: Validity is most often achieved when the presented evidence is aligned with the conclusions. The strength of an argument depends upon an author acknowledging and/or considering the limitations of his or her conclusions, opposing	• LO 5.1A[S]: Planning, producing, and presenting a cohesive argument, considering audience, context, and purpose. • LO 5.1A[R]: Planning and producing a cohesive academic paper, considering audience, context, and purpose.

views or perspectives, and/or his or her own biases.
- EK 2.2D1: Scholars analyze and evaluate others' studies and artistic works in terms of internal coherence and alignment of the purposes, goals, and methods of inquiry.

Evaluate Multiple Perspectives:
- EK 3.2A1: Critical thinkers are aware that some arguments may appeal to emotions, core values, personal biases and assumptions, and logic.
- EK 3.2A2: When evaluating multiple perspectives or arguments, consideration must be given to how one's own personal biases and assumptions can influence one's judgment.

Synthesize Ideas:
- EK 4.2A1: Evidence can be collected from print and nonprint sources (e.g., libraries, museums, archives), experts, or data gathered in the field (e.g., interviews, questionnaires, observations).
- EK 4.2A2: Evidence is used to support the claims and reasoning of an argument. Compelling evidence is sufficient, accurate, relevant, current, and credible to support the conclusion.
- EK 4.2A3: Evidence is strategically chosen based on context, purpose, and audience. Evidence may be used to align an argument with authority; to define a concept, illustrate a process, or clarify a statement; to set a mood; to provide an example; to amplify or qualify a point.
- EK 4.2A4: The evidence selected and attributed contributes to establishing the credibility of one's own argument.
- EK 4.2B1: Commentary connects the chosen evidence to the claim through interpretation or inference, identifying patterns, describing trends, and/or explaining relationships (e.g., comparative, causal, correlational).
- EK 4.3A1: Accurate and ethical attribution enhances one's credibility.
- EK 4.3A2: Plagiarism is a serious offense that occurs when a person presents another's ideas or words as his or her own.

Plagiarism may be avoided by acknowledging sources thoroughly and accurately.

- EK 4.3A3: Source material should be introduced, integrated, or embedded into the text of an argument.
- EK 4.3A4: Quoted and paraphrased material must be properly attributed, credited, and cited following a style manual. Quoting is using the exact words of others; paraphrasing is restating an idea in one's own words.
- EK 4.3A5: Academic disciplines use specific style guides for citing and attributing sources (e.g., APA, MLA, Chicago, AMA).
- EK 4.3A6: Appropriation in works of art has potential legal and ethical implications that scholars need to consider (e.g., scholars must credit works that are used in visual/ audio sampling, parody, choreography).

Team, Transform, and Transmit:

- EK 5.1A1[R]: Inquiries result in conclusions that can be presented in different formats and that typically have the following elements:
  - Introduction: provides background and contextualizes the research question/project goal, reviews previous work in the field related to the research question/project goal, and identifies the gap in the current field of knowledge to be addressed
  - Bibliography: provides a complete list of sources cited and consulted in the appropriate disciplinary style.
- EK 5.1A2: Coherence is achieved when the elements and ideas in an argument flow logically and smoothly. Transitions are used to move the audience from one element or idea to another by illustrating the relationship between the elements or ideas.

Key Vocabulary: Assumptions, Credibility, Reliability, Evidence, Validity, Arguments, Claim, Inductive vs. Deductive Reasoning, Counterarguments (Concession, Refutation, Rebuttal), Biases, Alignment, Point of View, Thesis, Interdisciplinary, Conventions, Commentary, Plagiarism, Literature Review, Conversation, Transitions

Assessment Evidence

Performance Tasks:	**Other Evidence:**
Summative #1: Literature Review *Summative #2*: Context Presentation	*Formative Assessments:* ● Reflections on Research Process, including research project/goal, narrowing of inquiry topic, log of assumptions, and tentative arguments. ● Peer Review *Interim Assessments:* ● 25 Annotated Bibliography Cards ● Concept Map ● Preliminary Academic Research Poster (Context, Argument, Biases, Assumptions, Key Research, Potential "Paths" and "Conclusions")

Learning Plan

THINK CRITICALLY AND CREATIVELY:

- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.

Summative #1: The Literature Review
Summative #2: The Context Presentation
Common Assessments:

- 25 Annotated Bibliography Cards, Concept Map, and Preliminary Academic Research Poster

TAKE INITIATIVE:

- TI3(9-12): I can formulate and investigate probing questions to further my learning.

Summative #1: The Literature Review
Summative #2: The Context Presentation
Common Assessments:

- 25 Annotated Bibliography Cards, Concept Map, and Preliminary Academic Research Poster

CFA #1: Reflections on the Research Process

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE1: Engage others in meaningful conversations while respecting multiple perspectives.

CFA #1: Peer Review and Feedback

ADAPT AND ADJUST:

- AA4(9-12): I can create opportunities to extend my learning by remaining open-minded in any situation.

CFA #1: Reflections on the Research Process

Teacher Resources: Resources include, but are not limited to:

- Current AP Research Course and Exam Description
- AP Research Student Workbook
- AP Research Performance Task Directions and Scoring Guidelines/Notes
- *Practical Research: Planning and Design* by Paul Leedy and Jeanne Ormrod
- Databases provided through the NHS Library Resource Website: Statista, Gale, EBSCOHost, JSTOR
- Databases provided through the digital portfolio in College Board
- AllSides.com
- Technology: Google Slides, Google Docs, Google Shared Drive
- Teacher and student selected materials based on research topic/interest

Unit 4 - Foundations in Methodology

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

The purpose of this unit is to teach students the foundations of methodology based on their chosen research disciplines including methods, statistics, data collection, data analysis, and tools.

Question and Explore:
- EK 1.2A3, EK 1.3A1, EK 1.4A2, EK 1.5B1, EK 1.5B2, EK 1.5B4, EK 1.5B5

Synthesize Ideas:
- EK 4.2A1, EK 4.2A2, EK 4.2A3, EK 4.2A4, EK 4.2B1

Team, Transform, and Transmit:
- EK 5.1C1, EK 5.1C2, EK 5.1C3, EK 5.1E2, EK 5.1F1

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)
THINK CRITICALLY AND CREATIVELY:
- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.

COLLABORATE AND COMMUNICATE EFFECTIVELY:
- CCE4(9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

TAKE INITIATIVE:
- TI1(9-12): I can implement a realistic plan and adapt when necessary to achieve my goals.
- TI2(9-12): I can evaluate my objectives and a variety of credible resources to find the best solutions for any challenge.

ADAPT AND ADJUST:
- AA1(9-12): I can evaluate different approaches and justify the best pathway to success.

Understandings: Students will understand that... Question and Explore:	**Essential Questions:** Question and Explore:

• EU 1.3: The investigative process is aided by the effective organization, management, and selection of resources and information. Appropriate technologies and tools enable the scholar to become more efficient, productive, and credible. • EU 1.2: Strengthening understanding of a concept or issue requires questioning existing ideas, using what is known to discover what is not known, and making connections to prior knowledge. Synthesize Ideas: • EU 4.2: Scholars responsibly and purposefully engage with the evidence to develop a compelling argument or aesthetic rationale. Team, Transform, and Transmit: • EU 5.1: How a perspective or argument is presented affects how people interpret or react to it. The same perspective or argument may be developed or presented differently depending on audience, purpose, and context.	• What information/evidence do I need to answer my research question? Understand and Analyze: • How do I connect and analyze the evidence in order to develop an argument and support a conclusion? Team, Transform, and Transmit: • 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?
Students will know… Question and Explore: • EK 1.2A3: Inquiry confirms or challenges one's existing understandings, assumptions, beliefs, and/or knowledge. • EK 1.3A1: Information used to address a problem may come from various secondary sources (e.g., articles, other studies, analyses, reports) and/or primary sources (e.g., original texts and works, material culture, or personally collected data such as from experiments, surveys, questionnaires, interviews, observations, personal narratives). • EK 1.4A2: Credibility of evidence depends on use of sources and data that are relevant and reliable (current, authoritative). • EK 1.5B1: Methods for data collection, analysis, innovation, and/or interpretation should be aligned with the research question/project goal. • EK 1.5B2: Methods of inquiry may include research methods	**Students will be able to...** Question and Explore: • LO 1.2A: Retrieving, questioning, organizing, and using prior knowledge about a topic. • LO 1.3A: Accessing and managing information using effective strategies. • LO 1.4A: Evaluating the relevance and credibility of the source of information and data in relation to the inquiry. Synthesize Ideas: • LO 4.2A: Interpreting, using, and synthesizing qualitative and/or quantitative data/information from various perspectives and sources (e.g., primary, secondary, print, nonprint) to develop and support an argument. • LO 4.2B: Providing insightful and cogent commentary that links evidence with claims.

(e.g., qualitative, quantitative, or mixed) or artistic processes (e.g., generating, conceptualizing, testing, and then refining aesthetic approaches).
- EK 1.5B4: Artistic processes can include elements of research methods as well as the exploration and shaping/reshaping of media and form through activities such as workshopping, storyboarding, composing, choreographing, staging, and model-making.
- EK 1.5B5: Based on the research question or project goal, methods of data or information collection may be qualitative (e.g., open-ended survey questions, interviews, observational notes, interpretation of texts); may be quantitative (e.g., precise measurements, modeling, using structured and validated data collection instruments and procedures); or could include a combination of both qualitative and quantitative (mixed).

Synthesize Ideas:
- EK 4.2A1: Evidence can be collected from print and nonprint sources (e.g., libraries, museums, archives), experts, or data gathered in the field (e.g., interviews, questionnaires, observations).
- EK 4.2A2: Evidence is used to support the claims and reasoning of an argument. Compelling evidence is sufficient, accurate, relevant, current, and credible to support the conclusion.
- EK 4.2A3: Evidence is strategically chosen based on context, purpose, and audience. Evidence may be used to align an argument with authority; to define a concept, illustrate a process, or clarify a statement; to set a mood; to provide an example; to amplify or qualify a point.
- EK 4.2A4: The evidence selected and attributed contributes to establishing the credibility of one's own argument.
- EK 4.2B1: Commentary connects the chosen evidence to the claim through interpretation or inference, identifying patterns, describing trends, and/or explaining relationships (e.g., comparative, causal, correlational).

Team, Transform, and Transmit:
- LO 5.1C: Communicating information through appropriate media using effective techniques of design.
- LO 5.1F: Defending inquiry choices and final product with clarity, consistency, and conviction.

Team, Transform, and Transmit:

- EK 5.1C1: Effective organizational and design elements (e.g., headings, layout, illustrations, pull quotes, captions, lists) may aid in audience engagement and understanding by calling attention to important information and/or creating emotional responses in the audience. Ineffective use or overuse of these elements disrupts audience engagement and understanding.
- EK 5.1C2: Data and other information can be presented graphically (e.g., infographics, graphs, tables, models) to aid audience understanding and interpretation.
- EK 5.1C3: Effective communication requires choosing appropriate media (e.g., essay, poster, oral presentation, documentary, research report/thesis) according to context, purpose, and audience.
- EK 5.1E2: Scholars present, perform, and/or produce their work in multiple ways. This may take discipline-specific forms (e.g., portfolios, exhibits, performances, showcases, premieres, posters), but may also cross disciplinary boundaries.
- EK 5.1F1: Scholars effectively articulate the rationale for inquiry choices in relation to the completed work.

Key Vocabulary: Evidence, Methodology, Method, Tools, Commentary, Ethics, IRB

Types of Research Methods:

- Qualitative: Observation Studies, Correlational Research, Developmental Designs, Cross-Sectional Study, Longitudinal Study, Meta-Analyses, Ex Post Facto, Case Study, Ethnography, Phenomenological Study, Grounded Theory Study, Narrative Inquiry, Content Analysis, Experience-Sampling Methods, Survey Research
- Quantitative
- Mixed-Methods: Convergent Designs, Exploratory Sequential Design, Explanatory Sequential Designs, Longitudinal Mixed-Methods Designs, Multiphase Iterative Designs

Assessment Evidence

Performance Tasks:

Summative #1: Practice Research Data Presentation

Summative #2: Project Proposal and IRB Form

Other Evidence:

Formatives:

- Group Practice Methodology and Data Collection
- PReP Reflection Paragraph: Connection to Individual Research

	Project ● Rough Draft of Project Proposal and IRB Form ● Feedback for Data Presentation *Interims:* ● Practice Oral Defense: Defending Choices Made in the Practice ● Research Poster #2 (adds a proposed methodology with proposed conclusions) ● Peer Review of Project Proposal ● Data visual (chart, graph, etc.)

Learning Plan

THINK CRITICALLY AND CREATIVELY:

- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.

Summative #1: Practice Research Data Presentation
CFA #1: Group Practice Methodology and Data Collection

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE4(9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

CFA #1: Peer Review of Project Proposal
CFA #2: Feedback for Data Presentation
Interim: Data Visual
Interim: Research Poster #2

TAKE INITIATIVE:

- TI1(9-12): I can implement a realistic plan and adapt when necessary to achieve my goals.
- TI2(9-12): I can evaluate my objectives and a variety of credible resources to find the best solutions for any challenge.

Summative #1: Practice Research Data Presentation
Summative #2: Project Proposal and IRB Form

ADAPT AND ADJUST:

- AA1(9-12): I can evaluate different approaches and justify the best pathway to success.

CFA #1: PReP Reflection Paragraph: Connection to Individual Research Project
Interim: Practice Oral Defense: Defending Choices Made in the Practice

Interim: Research Poster #2
Teacher Resources: Resources include, but are not limited to: ● AP Research Student Workbook ● *Practical Research: Planning and Design* by Paul Leedy and Jeanne Ormrod ● Statista ● Technology: Google Slides, Google Docs, Google Shared Drive ● Teacher and student selected materials based on research topic/interest

Unit 5 - Methodology and Data Collection

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

Question and Explore:

- EK 1.4A4, EK 1.5B3, EK 1.5B6, EK 1.5B7, EK 1.5B8, EK 1.5B9, EK 1.5B10, EK 1.5C1, EK 1.5C2, EK 1.5C3, EK 1.5D1, EK 1.5D2, EK 1.5D3

Team, Transform, and Transmit:

- EK 5.1C2, EK 5.3A3

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)

THINK CRITICALLY AND CREATIVELY:

- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.
- TCC4(9-12): I can integrate my learning to adapt to experiences in the classroom, career and life.

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE2 (9-12): Seek, accept, and apply actionable feedback.
- CCE3 (9-12): Lead group progress through active listening, questioning, and giving advice.
- CCE4 (9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

TAKE INITIATIVE:

- TI1(9-12): I can implement a realistic plan and adapt when necessary to achieve my goals.
- TI4(9-12): I can apply my strengths and anticipate challenges to reach my current and future goals.

PERSEVERE:

- P3 (9-12): Demonstrate flexibility and acceptance of setbacks to reach success.

ADAPT AND ADJUST:

- AA2(9-12): I can assess my past successes and mistakes to change my approach.
- AA4(9-12): I can create opportunities to extend my learning by remaining open-minded in any situation.

Understandings: Students will understand that… Question and Explore: ● EU 1.4: The relevance and credibility of the source of information is determined by the context of its use. ● EU 1.5: There are multiple ways to investigate questions, problems, and issues. Methods should be aligned with the purpose of the inquiry. Team, Transform, and Transmit: ● EU 5.1: How a perspective or argument is presented affects how people interpret or react to it. The same perspective or argument may be developed or presented differently depending on audience, purpose, and context. ● EU 5.3: Reflection increases learning, self-awareness, and personal growth through identification and evaluation of personal conclusions and their implications.	**Essential Questions:** Question and Explore: ● What information/evidence do I need to answer my research question? Team, Transform, and Transmit: ● How do I provide feedback that is valuable to others? How do I act upon feedback I have received?
Students will know... Question and Explore: ● EK 1.4A4: When gathering data on individuals' behaviors, attitudes, and preferences, the accuracy and validity of such data depends on the honesty, memory, and reliability of the respondents and/or observers as well as the design of the data collection instrument. ● EK 1.5B3: Throughout the process of determining scope and feasibility, the scholar may, where appropriate, adjust the course of inquiry and/or develop different tools, methods, and processes. ● EK 1.5B6: Scholars analyze data or information in a variety of ways appropriate to the inquiry. ● EK 1.5B7: Scholars identify reasons for choosing a sample of information, a population, or artifacts and understand the limits of the inferences or conclusions made based on the sample chosen. ● EK 1.5B8: Descriptive or inferential statistics can be used to display and/or analyze data.	**Students will be able to...** Question and Explore: ● LO 1.5A: Identifying the information needed for the context of the inquiry. ● LO 1.5B: Designing, planning, and implementing a scholarly inquiry. ● LO 1.5C: Demonstrating perseverance through setting goals, managing time, and working independently on a long-term project. ● LO 1.5D: Employing ethical research practices. Team, Transform, and Transmit: ● LO 5.1C: Communicating information through appropriate media using effective techniques of design. ● LO 5.3A: Reflecting on and revising their own writing, thinking, and creative processes.

• EK 1.5B9: Scholars often organize and categorize (or code) data/information to identify patterns or themes. • EK 1.5B10: Scholars can combine qualitative and quantitative data/information to triangulate and corroborate trends, patterns, correlations, and/or themes. • EK 1.5C1: Scholars carefully plan methods of inquiry, analysis, and other feasible research activities, taking into account deadlines, priorities, risks, setbacks, and the availability of others. • EK 1.5C2: Scholars learn that setbacks are inevitable; they need to focus on the essential goals of the inquiry or project and be prepared to try alternate approaches or look to other disciplines in order to achieve them. • EK 1.5C3: Experts in the field may provide guidance and/or discipline-specific knowledge or perspective. Scholars must understand how to seek advice while maintaining self-sufficiency. • EK 1.5D1: Scholars have ethical and moral responsibilities when they conduct research. • EK 1.5D2: There are laws, rules, and guidelines that govern the conduct of researchers, in particular when studies involve humans and animals. Accordingly, scholars gain approval to conduct research with humans through an institutional review board (IRB). • EK 1.5D3: There are copyright and patent laws and guidelines that govern the use and reproduction of others' instruments, work, personal information, and intellectual property. Team, Transform, and Transmit: • EK 5.1C2: Data and other information can be presented graphically (e.g., infographics, graphs, tables, models) to aid audience understanding and interpretation. • EK 5.3A3: Scholars are mindful of the rationale behind the chosen method for data collection, information gathering, analysis, production, and presentation.	

Key Vocabulary: Alignment, Feasible, Replicable, Triangulate, Code, Limitations, Implications, Validity

Assessment Evidence

Performance Tasks:

Summative #1: Methodology (completed after finishing project proposal)

Summative #2: Individual Data Presentation (data, findings, conclusions)

Other Evidence:

Formatives:

- Data log
- PReP Reflection: Expert Advisor Conversation
- Data Conferencing (Peer, Group, and Teacher)
- Data Pilot
- Presentation Feedback
- Methodology Rough Draft

Interims:

- Methodology Rough Draft Peer Review
- Data Visuals
- Oral Defense Preparation

Learning Plan

THINK CRITICALLY AND CREATIVELY:

- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.
- TCC4(9-12): I can integrate my learning to adapt to experiences in the classroom, career and life.

Summative #2: Individual Data Presentation
CFA #1: Data log
CFA #2: Data Pilot
Interim: Data Visuals

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE2 (9-12): Seek, accept, and apply actionable feedback.
- CCE3 (9-12): Lead group progress through active listening, questioning, and giving advice.
- CCE4 (9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

CFA #1: PReP Reflection: Expert Advisor Conversation
CFA #2: Data Conferencing (Peer, Group, and Teacher)
CFA #3: Presentation Feedback
Interim: Methodology Rough Draft Peer Review

TAKE INITIATIVE:

- TI1(9-12): I can implement a realistic plan and adapt when necessary to achieve my goals.
- TI4(9-12): I can apply my strengths and anticipate challenges to reach my current and future goals.

Summative #1: Methodology (completed after finishing project proposal)

Teacher Resources: Resources include, but are not limited to:

- AP Research Student Workbook
- *Practical Research: Planning and Design* by Paul Leedy and Jeanne Ormrod
- Statista
- Technology: Google Slides, Google Docs, Google Shared Drive
- Teacher and student selected materials based on research topic/interest

Unit 6 - The Academic Paper

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

The purpose of this unit is for students to complete their academic paper in preparation for submission to the College Board digital portfolio.

Understand and Analyze:
- EK 2.2C1, EK 2.2C2, EK 2.2C3, EK 2.3A1, EK 2.3B1

Synthesize Ideas:
- EK 4.1A1, EK 4.1A2, EK 4.1A3, EK 4.1A4, EK 4.1A5, EK 4.1A6, EK 4.1A7, EK 4.1A8, EK 4.1A9, EK 4.1A11, EK 4.2A2, EK 4.2A3, EK 4.2A4, EK 4.2B1, EK 4.3A1, EK 4.3A2, EK 4.3A3, EK 4.3A4, EK 4.3A5, EK 4.3A6, EK 4.4A1, EK 4.5A1

Team, Transform, and Transmit:
- EK 5.1A1[R], EK 5.1A2, EK 5.1B1, EK 5.1B2, EK 5.1B3, EK 5.1B4, EK 5.1C1, EK 5.1C2EK 5.1D1, EK 5.1D2, EK 5.3A1, . EK 5.3A2, EK 5.4A1

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)

THINK CRITICALLY AND CREATIVELY:
- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.
- TCC3(9-12): I can integrate relevant information to produce multiple valid solutions.

COLLABORATE AND COMMUNICATE EFFECTIVELY:
- CCE2 (9-12): Seek, accept, and apply actionable feedback.
- CCE4: Express ideas in a variety of ways, according to context, purpose, and audience.

Understandings: Students will understand that...
Understand and Analyze:
- EU 2.2: Authors choose evidence to shape and support their arguments. Individuals evaluate the line of reasoning and evidence to determine to what extent they believe or accept an

Essential Questions:
Synthesize Ideas:
- How do I connect and analyze the evidence in order to develop an argument and support a conclusion?
- Are there other conclusions I should consider?

argument. ● EU 2.3: Arguments have implications and consequences. Synthesize Ideas: ● EU 4.1: Scholarly works convey perspectives and demonstrate effective reasoning that have been selected for the intended audience, purpose, and situation. ● EU 4.2: Scholars responsibly and purposefully engage with the evidence to develop a compelling argument or aesthetic rationale. ● EU 4.3: Responsible participation in the scholarly community requires acknowledging and respecting the prior findings and contributions of others. ● EU 4.4: Forming one's own perspective and reaching new understandings involve innovative thinking and synthesis of existing knowledge with personally generated evidence. ● EU 4.5: Arguments, choices, and solutions present intended and unintended opportunities and consequences. Team, Transform, and Transmit: ● EU 5.1: How a perspective or argument is presented affects how people interpret or react to it. The same perspective or argument may be developed or presented differently depending on audience, purpose, and context. ● EU 5.3: Reflection increases learning, self-awareness, and personal growth through identification and evaluation of personal conclusions and their implications. ● EU 5.4: Scholars perform, present, and/or produce their work within a larger community. Throughout the inquiry process, scholars interact with and benefit from the scholarly community through thoughtful engagement with the opinions and critiques of others.	● How does my scholarly work emerge from my perspective, design choices, or aesthetic rationale? ● 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? Team, Transform, and Transmit: ● How can I best appeal to and engage 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?
Students will know... Understand and Analyze: ● EK 2.2C1: An argument is valid when there is logical alignment	**Students will be able to...** Understand and Analyze: ● LO 2.2C: Evaluating the validity of an argument.

between the line of reasoning and the conclusion.
- EK 2.2C2: Validity is most often achieved when the presented evidence is aligned with the conclusions. The strength of an argument depends upon an author acknowledging and/or considering the limitations of his or her conclusions, opposing views or perspectives, and/or his or her own biases.
- EK 2.2C3: Conclusions are contextual and their validity must be affirmed, qualified, or refuted.
- EK 2.3A1: The implications and consequences of arguments may be intended or unintended.
- EK 2.3B1: Arguments are significant and have real-world impact because they can influence behavior (e.g., call one to action, suggest logical next steps).

Synthesize Ideas:
- EK 4.1A1: Effective arguments use reason and evidence to convey a perspective, point of view, or some version of the truth that is stated or implied in the thesis and/or conclusion.
- EK 4.1A2: Effective arguments are supported and unified by carefully chosen and connected claims, reasons, and evidence.
- EK 4.1A3: Qualifiers place limits on how far a claim may be carried. Effective arguments acknowledge these limits, increasing credibility by reducing overgeneralization or oversimplification.
- EK 4.1A4: Effective arguments may acknowledge other arguments and/or respond to them with counterarguments (e.g., concession, refutation, rebuttal).
- EK 4.1A5: The line of reasoning is a clear, logical path leading the audience through the reasons to a conclusion.
- EK 4.1A6: The logic and reasoning of an argument may be deductive (claim followed by evidence) or inductive (evidence leads to a conclusion).
- EK 4.1A7: A line of reasoning is organized based on the argument's purpose (e.g., to show causality, to evaluate, to define, to propose a solution).
- EK 4.1A8: Claims and supporting evidence are arranged (e.g.,

- LO 2.3A: Connecting an argument to broader issues by examining the implications of the author's claim.
- LO 2.3B: Evaluating potential resolutions, conclusions, or solutions to problems or issues raised by an argument.

Synthesize Ideas:
- LO 4.1A: Formulating a well reasoned argument, taking the complexities of the problem or issue into consideration.
- LO 4.2A: Interpreting, using, and synthesizing qualitative and/or quantitative data/information from various perspectives and sources (e.g., primary, secondary, print, nonprint) to develop and support an argument.
- LO 4.2B: Providing insightful and cogent commentary that links evidence with claims.
- LO 4.3A: Attributing knowledge and ideas accurately and ethically, using an appropriate citation style.
- LO 4.4A: Extending an idea, question, process, or product to innovate or create new understandings.
- LO 4.5A: Offering resolutions, conclusions, and/or solutions based on evidence considering limitations and implications.

Team, Transform, and Transmit:
- LO 5.1A[R]: Planning and producing a cohesive academic paper, considering audience, context, and purpose.
- LO 5.1B: Adhering to established conventions of grammar, usage, style, and mechanics.
- LO 5.1C: Communicating information through appropriate media using effective techniques of design.
- LO 5.1D: Adapting an argument for context, purpose, and/or audience.
- LO 5.3A: Reflecting on and revising their own writing, thinking, and creative processes.
- LO 5.4A: Engaging in peer review to provide constructive responses to one another's work, appropriate to the stage of a project's development.

spatially, chronologically, order of importance) to convey reasoning and relationship (e.g., comparative, causal, correlational). • EK 4.1A9: The same argument may be organized, arranged, or supported in multiple ways depending on audience and context. • EK 4.1A11: Scholars need to articulate their choices, even when those choices deliberately or inadvertently result in ambiguity or lack of clarity. • EK 4.2A2: Evidence is used to support the claims and reasoning of an argument. Compelling evidence is sufficient, accurate, relevant, current, and credible to support the conclusion. • EK 4.2A3: Evidence is strategically chosen based on context, purpose, and audience. Evidence may be used to align an argument with authority; to define a concept, illustrate a process, or clarify a statement; to set a mood; to provide an example; to amplify or qualify a point. • EK 4.2A4: The evidence selected and attributed contributes to establishing the credibility of one's own argument. • EK 4.2B1: Commentary connects the chosen evidence to the claim through interpretation or inference, identifying patterns, describing trends, and/or explaining relationships (e.g., comparative, causal, correlational). • EK 4.3A1: Accurate and ethical attribution enhances one's credibility. • EK 4.3A2: Plagiarism is a serious offense that occurs when a person presents another's ideas or words as his or her own. Plagiarism may be avoided by acknowledging sources thoroughly and accurately. • EK 4.3A3: Source material should be introduced, integrated, or embedded into the text of an argument. • EK 4.3A4: Quoted and paraphrased material must be properly attributed, credited, and cited following a style manual. Quoting is using the exact words of others; paraphrasing is restating an idea in one's own words. • EK 4.3A5: Academic disciplines use specific style guides for citing and attributing sources (e.g., APA, MLA, Chicago, AMA).	

- EK 4.3A6: Appropriation in works of art has potential legal and ethical implications that scholars need to consider (e.g., scholars must credit works that are used in visual/ audio sampling, parody, choreography).
- EK 4.4A1: Innovative solutions and arguments identify and challenge assumptions, acknowledge the importance of content, imagine and explore alternatives, and engage in reflective skepticism.
- EK 4.5A1: When making choices and proposing solutions, the advantages and disadvantages of the options should be weighed against the goal within its context.

Team, Transform, and Transmit:

- EK 5.1A1[R]: Inquiries result in conclusions that can be presented in different formats and that typically have the following elements:
    - Introduction: provides background and contextualizes the research question/project goal, reviews previous work in the field related to the research question/project goal, and identifies the gap in the current field of knowledge to be addressed
    - Method, Process, or Approach: explains and provides justification for the chosen method, process, or approach
    - Results, Product, or Findings: presents the results, product, evidence, or findings
    - Discussion, Analysis, and/or Evaluation: interprets the significance of the results, product, or findings; explores connections to original research question/project goal; discusses the implications and limitations of the research or creative work
    - Conclusion and Future Directions: reflects on the process and how this project could impact the field; discusses possible next steps
    - Bibliography: provides a complete list of sources cited and consulted in the appropriate disciplinary style.
- EK 5.1A2: Coherence is achieved when the elements and ideas

in an argument flow logically and smoothly. Transitions are used to move the audience from one element or idea to another by illustrating the relationship between the elements or ideas. • EK 5.1B1: A writer expresses tone or attitude about a topic through word choice, sentence structure, and imagery. • EK 5.1B2: Effective sentences create variety, emphasis, and interest through structure, agreement of elements, placement of modifiers, and consistency of tense. • EK 5.1B3: Precision in word choice reduces confusion, wordiness, and redundancy. • EK 5.1B4: Spelling and grammar errors detract from credibility. • EK 5.1C1: Effective organizational and design elements (e.g., headings, layout, illustrations, pull quotes, captions, lists) may aid in audience engagement and understanding by calling attention to important information and/or creating emotional responses in the audience. Ineffective use or overuse of these elements disrupts audience engagement and understanding. • EK 5.1C2: Data and other information can be presented graphically (e.g., infographics, graphs, tables, models) to aid audience understanding and interpretation. • EK 5.1D1: Arguments can be adapted by strategically selecting and emphasizing information considering audience, situation, medium, and purpose. • EK 5.1D2: Scholars should articulate their choices and content in a language that is not discipline-specific to communicate effectively to non-experts or people outside the discipline. • EK 5.3A1: Reflection is an ongoing and recursive process in inquiry, often leading to changes in understanding. Strategies for reflection may include journal writing, self-questioning, drawing, exploration of space, and/or guided contemplation. • EK 5.3A2: Learning requires practice through an iterative process of thinking/ rethinking, vision/revision, and writing/ rewriting. • EK 5.4A1: Peer review should be based on guidelines and defined criteria appropriate to the work.	

Key Vocabulary: Success Guidelines, Criteria

Assessment Evidence	
Performance Tasks: *Summative #1:* Oral Defense Responses	**Other Evidence:** *Formatives:* ● Academic Paper Rough Draft ● PReP: Checklist Reflection *Interim:* ● Academic Paper Peer Review

Learning Plan

THINK CRITICALLY AND CREATIVELY:

- TCC2(9-12): I can evaluate evidence from multiple perspectives, and recognize their limitations and implications, in order to justify new conclusions.
- TCC3(9-12): I can integrate relevant information to produce multiple valid solutions.

Completion of the College Board Performance Task for the Academic Paper

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE2 (9-12): Seek, accept, and apply actionable feedback.
- CCE4: Express ideas in a variety of ways, according to context, purpose, and audience.

Interim: Academic Paper Peer Review

Teacher Resources: Resources include, but are not limited to:

- Current AP Research Course and Exam Description
- AP Research Student Workbook
- AP Research Performance Task Directions and Scoring Guidelines/Notes
- Sample student academic Papers provided by College Board and former NHS students
- *Practical Research: Planning and Design* by Paul Leedy and Jeanne Ormrod
- Databases provided through the NHS Library Resource Website: Statista, Gale, EBSCOHost, JSTOR
- Databases provided through the digital portfolio in College Board
- AllSides.com
- Technology: Google Slides, Google Docs, Google Shared Drive
- Teacher and student selected materials based on research topic/interest

Unit 7 - The Presentation and Oral Defense

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

The purpose of this unit is for students to complete their College Board presentations and oral defense that is scored by the teacher and input into the digital portfolio.

Team, Transform, and Transmit:

- EK 5.1C1, EK 5.1C2, EK 5.1C3, EK 5.1D1, EK 5.1D2, EK 5.1E1, EK 5.1E2, EK 5.1E3, EK 5.1F1, EK 5.1F2, EK 5.3A3, EK 5.3A4, EK 5.3C1, EK 5.3C2, EK 5.4A1, EK 5.4B1, EK 5.4B2

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)

COLLABORATE AND COMMUNICATE EFFECTIVELY:

- CCE4 (9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

Understandings: Students will understand that...

Team, Transform, and Transmit:

- EU 5.1: How a perspective or argument is presented affects how people interpret or react to it. The same perspective or argument may be developed or presented differently depending on audience, purpose, and context.
- EU 5.3: Reflection increases learning, self-awareness, and personal growth through identification and evaluation of personal conclusions and their implications.
- EU 5.4: Scholars perform, present, and/or produce their work within a larger community. Throughout the inquiry process, scholars interact with and benefit from the scholarly community through thoughtful engagement with the opinions and critiques of others.

Essential Questions:

Team, Transform, and Transmit:

- How can I best appeal to and engage 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?
- 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?

Students will know...

Students will be able to...

Team, Transform, and Transmit: • EK 5.1C1: Effective organizational and design elements (e.g., headings, layout, illustrations, pull quotes, captions, lists) may aid in audience engagement and understanding by calling attention to important information and/or creating emotional responses in the audience. Ineffective use or overuse of these elements disrupts audience engagement and understanding. • EK 5.1C2: Data and other information can be presented graphically (e.g., infographics, graphs, tables, models) to aid audience understanding and interpretation. • EK 5.1C3: Effective communication requires choosing appropriate media (e.g., essay, poster, oral presentation, documentary, research report/thesis) according to context, purpose, and audience. • EK 5.1D1: Arguments can be adapted by strategically selecting and emphasizing information considering audience, situation, medium, and purpose. • EK 5.1D2: Scholars should articulate their choices and content in a language that is not discipline-specific to communicate effectively to non-experts or people outside the discipline. • EK 5.1E1: Speakers vary elements of delivery (e.g., volume, tempo, movement, eye contact, vocal variety, energy) to emphasize information, convey tone, and engage their audience. • EK 5.1E2: Scholars present, perform, and/or produce their work in multiple ways. This may take discipline-specific forms (e.g., portfolios, exhibits, performances, showcases, premieres, posters), but may also cross disciplinary boundaries. • EK 5.1E3: Scholars present, perform, and/or produce their completed work after multiple revisions or rehearsals (e.g., responding to audience feedback, self critique of recorded performance) and polishing. • EK 5.1F1: Scholars effectively articulate the rationale for inquiry choices in relation to the completed work. • EK 5.1F2: Scholars engage thoughtfully with their audiences' critiques and questions. • EK 5.3A3: Scholars are mindful of the rationale behind the	Team, Transform, and Transmit: • LO 5.1C: Communicating information through appropriate media using effective techniques of design. • LO 5.1D: Adapting an argument for context, purpose, and/or audience. • LO 5.1E: Engaging an audience by employing effective techniques of delivery or performance. • LO 5.1F: Defending inquiry choices and final product with clarity, consistency, and conviction. • LO 5.3C: Reflecting on the larger significance of engaging in the overall inquiry process and producing a completed scholarly work. • LO 5.4A: Engaging in peer review to provide constructive responses to one another's work, appropriate to the stage of a project's development. • LO 5.4B: Engaging in peer review to receive and consider responses to their work.

chosen method for data collection, information gathering, analysis, production, and presentation. • EK 5.3A4: Scholars reflect on how the inquiry process helped them deepen their understanding, make important connections, and develop greater self-direction. • EK 5.3C1: Reflective scholars explore potential future directions for their inquiries and the development of their own scholarship or bodies of work. • EK 5.3C2: Reflective scholars acknowledge how their inquiry processes and resulting works can be transformational for their own and others' understanding as well as for their personal identities as scholars. • EK 5.4A1: Peer review should be based on guidelines and defined criteria appropriate to the work. • EK 5.4B1: Peer review is an effective way for scholars to strengthen their critical eye as well as strengthen their own work. • EK 5.4B2: Communities of scholars produce, present, and perform effectively when participants actively seek and provide feedback.	
Key Vocabulary: Success Guidelines, Criteria	
Assessment Evidence	
Performance Tasks: *Summative #1:* Final Academic Research Poster	**Other Evidence:** *Formatives:* • Practice Oral Defense Questions (Weekly for Teacher Feedback) • PReP: Checklist Reflection *Interim:* • Practice Peer-to-Peer Presentation • Practice Presentation Reflection
Learning Plan	
COLLABORATE AND COMMUNICATE EFFECTIVELY:	

- CCE4 (9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

Completion of the College Board Performance Task for the Presentation and Oral Defense
Summative #1: Final Academic Research Poster

Teacher Resources: Resources include, but are not limited to:

- Current AP Research Course and Exam Description
- AP Research Student Workbook
- AP Research Performance Task Directions and Scoring Guidelines/Notes
- Sample student presentations provided by College Board and former NHS students
- Technology: Google Slides, Google Docs, Google Shared Drive
- Teacher and student selected materials based on research topic/interest

Unit 8 - Authentic Applications

Desired Results - Goals, Transfer, Meaning, Acquisition

Established Goals: *Standards based on the AP Research Course and Exam Description. For more information visit: www.CollegeBoard.org.

The purpose of this unit is for students to reflect on their learning for the year and give back to the academic community at Nonnewaug High School.

Team, Transform, and Transmit:
- EK 5.3C1, EK 5.3C2

Vision of A Learner Attributes: Students will be able to independently use their learning to... ("I can" statements to be demonstrated)
THINK CRITICALLY AND CREATIVELY:
- TCC4(9-12): I can integrate my learning to adapt to experiences in the classroom, career and life.

COLLABORATE AND COMMUNICATE EFFECTIVELY:
- CCE4 (9-12): Express ideas in a variety of ways, according to context, purpose, and audience.

TAKE INITIATIVE:
- TI4(9-12): I can apply my strengths and anticipate challenges to reach my current and future goals.

Understandings: Students will understand that...	**Essential Questions:**
Team, Transform, and Transmit: • EU 5.3: Reflection increases learning, self-awareness, and personal growth through identification and evaluation of personal conclusions and their implications.	• What might others in the larger academic community learn from my research and experiences?
Students will know...	**Students will be able to...**
Team, Transform, and Transmit: • EK 5.3C1: Reflective scholars explore potential future directions for their inquiries and the development of their own scholarship	Team, Transform, and Transmit: • LO 5.3C: Reflecting on the larger significance of engaging in the overall inquiry process and producing a completed scholarly

or bodies of work. ● EK 5.3C2: Reflective scholars acknowledge how their inquiry processes and resulting works can be transformational for their own and others' understanding as well as for their personal identities as scholars.	work.
Key Vocabulary: Scholarly Community	
Assessment Evidence	
Performance Tasks: *Summative #1:* Finalized PReP Journal	**Other Evidence:** *Formatives:* ● Community Service Choice Board Activities (i.e. creating research training videos) *Interim:* ● AP Research Debrief Reflection
Learning Plan	
The following Vision of a Learner attributes are assessed through the Community Service Choice Board activities: THINK CRITICALLY AND CREATIVELY: ● TCC4(9-12): I can integrate my learning to adapt to experiences in the classroom, career and life. COLLABORATE AND COMMUNICATE EFFECTIVELY: ● CCE4 (9-12): Express ideas in a variety of ways, according to context, purpose, and audience. TAKE INITIATIVE: ● TI4(9-12): I can apply my strengths and anticipate challenges to reach my current and future goals.	
Teacher Resources: Resources include, but are not limited to: ● Technology: Google Slides, Google Docs, Google Shared Drive, WeVideo ● Teacher and student selected materials based on research topic/interest	