AP Research Syllabus 2017-2018:

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Course Description and Goals

Overview

AP Research is open to students who have successfully completed AP Seminar during their junior year. AP Research is a two-semester, elective course (UC "g") that aims to allow 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 methods, 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 (PREP Journal). 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.

Goals

The goals of AP Research include:

- Understand the fundamental nature of research as scholarly work and serious inquiry
- Enter into academic and real-world conversations about complex issues
- Choose and deeply explore a topic or question of personal interest
- Learn research methodology and employ ethical research practices
- Reflect on skill development and document processes to ultimately curate year-long scholarly work

Academic Paper

AP Research Students will write an academic research paper as the culmination of a year-long inquiry based research on a topic of the student's choosing. The academic paper is an original 4000-5000 word report that analyzes, evaluates, and synthesizes a broad range of literature. [**CR3**]

Presentation and Oral Defense

AP Research Students will make a 15-20 minute presentation, using appropriate media, to a panel of 3-4 experts. The panel will include the AP Research teacher, other faculty, expert advisers, and other community members. Students will defend their topic of inquiry/research question, approach, and findings or products through questions posed by the panel. The panel will ask questions from three categories: one question pertaining to the research or inquiry process, one question focused on the depth of understanding, and

one question about reflection throughout the inquiry process as evidenced from students' PREP Journals. The fourth question and any follow up questions are at the discretion of the panel. [**CR5**]

Role of Process and Reflection Portfolio (PREP Journal):
The PREP Journal will be used to thoroughly document students' development and to provide evidence that students have demonstrated a sustained effort during the entire research process. This portfolio will be a major formative assessment component of the course, and as such much of students' grades will be based on work done as part of the PREP Journal. Not only will students document their research process, but they will also regularly reflect on this process as part of the PREP Journal. The tasks and work in the PREP Journal will address all five big ideas in the curriculum framework. Students will meet bi-monthly with teachers, and the PREP Journal will be reviewed regularly. See Units of Study for specific activities and assignments, most of which are included in the PREP Journal and tied to the curricular framework. [**CR1a, CR1b, CR1c, CR1d, CR1e, CR1f, CR1g, CR2a, CR2b, CR3, CR4a, CR4b, CR5**]

Instructional Resources:
To meet the course objectives, students will use the following core text:

Patten, Mildred L. *Understanding Research Methods, AN Overview of the Essentials*, 10th ed. Glendale, CA: Pyrczak Publishing, 2018.

Supplemental readings may come from resource texts, including:

Palmquist, Mike. *The Bedford Researcher with 2016 MLA Update*, 5th ed. Boston, MA: Bedford/St. Martin's, 2015.

Leedy, P. D., and J.E. Ormrod. *Practical Research: Planning and Design*, 11th ed. Boston, MA: Pearson, 2016.

Palmquist, Mike, and Barbara Wallraff. *Joining the Conversation: Writing in College and Beyond*. 2nd ed. Boston, MA: Bedford/St. Martins, 2014.

Rothenberg, Paula S. *Race, Class, and Gender in the United States: An Integrated Study*. 10th ed. New York: Worth Publishers, 2016.

AP Capstone Plagiarism Policy (Research)
Participating teachers shall review academic honesty policies and instruct students to ethically use and acknowledge the ideas and work of others throughout their coursework. 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 Assessment Task.

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 Assessment Task. [**CR2a, CR2b**]

In addition, students must adhere to Redwood High School's Academic Honestly policy.

Evaluation and Grading

Quarter Grade (Reporting Periods 1-3 and 4-6):
The quarter grade will be based on a total points system. All assessments will be awarded a point value and the quarter grade will be calculated based on the number of points received for all assignments. Student grades will be comprised of formative and summative assessments, in class activities, PREP Journal work, and reflection throughout both semesters. The through course assessments submitted to the College Board and the resulting AP score will not be part of student grades for RHS.

Semester Grades:

Fall:	R1 - R3 80%	Final Semester Reflection (Exam)	20%
Spring:	R4 - R6 80%	Final Course/Program Reflection (Exam)	20%

As the focus of this course is on student development of a specific selection of skills, the majority of classroom activities and assessments will be graded using variations of the following four-point rubric:

Exemplary (4)	Proficient (3)	Approaching (2)	Does not meet standard (1)
Student performs all components at a superior level beyond what is required for proficiency. The student has exceeded expectations and has presented work worthy of	Student performs all components at a consistent level and demonstrates competency. The student has met the expectations of the assignment and its corresponding standards.	Student has not demonstrated proficiency in all components. The student is working towards meeting assignment expectations and corresponding standards.	Student has not met or demonstrated proficiency in the minimum standards for completion of the assignment. Student work is characterized by insufficient

showcasing and emulating. Student work is characterized by an in-depth understanding of the subject-area content related to the task and demonstrates excellence in and ability to apply essential skills.	Student work is characterized by an adequate understanding of the subject-area content related to the task and demonstrates proficiency in essential skills.	Student work is characterized by a general understanding of subject-area content related to the task and demonstrates a basic grasp of essential skills.	understanding of subject-area content and demonstrates deficiencies in essential skills.

Please note that College Board must approve any and all accommodations that would affect the AP exam score, including the team and individual performance tasks. The College Board cannot exempt students from collaborative work or oral presentations, as both are curricular requirements. Students who have accommodations that would affect any component of the performance tasks or end of course exams must contact College Board directly.

Late Work Policy

Late assignments, including homework, essays, and projects are eligible for a top grade of C if one day late, D if two days late. Assignments more than two days late may be granted partial credit at my discretion. Extensions on essays and projects may be granted for legitimate reasons at my discretion *when requested in advance of the due date.*

Year Structure and Calendar

Unit Time Frame (2017-2018)	**Important Dates (Prom, Spring Break, Deadlines, State Test)**	**Learning Objectives / Deliverables**	**Activities/ Units**
August	Classes start August 23rd August 30/31	Introduction to PREP Journal/set up	Units 1.1* *These topics correspond with units outlined below

Septembe r	September 4 September 29	Labor Day Month 2 PREP Journal	Units 1.2, 2.1, 2.2, 3.1
October	October 4 October 9 October 27	Minimum Day Staff Development Month 3 PREP Journal	Units 3.2, 4.1, 4.2, 4.3
November	November 10 November 20 November 22-24 >>>>>>>>>>> November 28 >>>>>>>>>>> November 30 >>>>>>>>>>>>>>>	Veteran's Day Draft Proposal due Thanksgiving Break Final Proposal is due for students in class Inquiry Proposal is approved and Month 4 PREP	Units 4.3, 4.4, 4.5, 5.1 • Students finalize background, design method, and submit Final Inquiry Proposal for approval • Teacher approves Inquiry Proposal, it is locked down and cannot change going forward
December	December 23 - January 7	Winter Break	Unit 5.2 and 5.3 Fall Final Exam: Synthesis of Fall Semester, Including PREP Month 5 Check
January	December 23 - January 7 January 26	Winter Break PREP Month 6 Check	Units 6.1, 6.2, 6.3,

February	February 19-23>>>>>>>>>>> March 2	February Break PREP Month 7 Check	Unit 7: Academic Paper drafting
March	Feb 28/March 1st >>>>>>>>>>>>>> March 1 - 9 >>>>>>>>>>> March 12 - 23 >>>>>>> March 26 - April 6 >>>>>> March 30 >>>>>	Paper draft is due for students in class Students work on Presentations Practice Presentations Final Presentations and Oral Defense PREP Month 8 Check	Unit 7, continued: • Academic Paper Drafting • Revision • Final Peer Review • Presentation/Oral Defense Practice and Peer Panels
April	March 26 - April 6 >>>>>>> April 9 - 13 >>>>>>>>>>> April 16 - 27 >>>>>>>>>>>>> April 23>>>>> April 27>>>>	Final Presentations and Oral Defense Spring Break Presentations and Oral Defenses graded Deadline to submit Academic Paper	Students can do final review of Papers after Oral Defense and before deadline on April 23

	April 28 >>>>>>>>>>>>>>>>	Month 9 PREP check Academic Papers and Presentation/ Oral Defense scores are uploaded to College Board	
May	May 7 - 18 >>>>>>>>>>>>>>> May 1-31>>>>> May 25>>>>>>>	AP Exam Window (Students studying for and taking other AP exams) Preparation for Exit Interview and Final PREP Journal check Final PREP Journal check	Unit 8: Mentoring, Reflecting, and Evaluating
June	June 11-15>>>>>>>>>>>>>>>>.	Final Exams	Final Reflection for AP Capstone and Exit Interview

Units of Study

Weekly Structure of Content:

Each week will follow the same general rhythm to help build consistency and expectations for students, especially as the course gets progressively more self-directed and independent as we get closer to the end of course assessments. The detailed work below for each unit will follow this basic rhythm on a weekly basis.

Mondays: teaching new skills/content, textbook reading and questions in PREP (HW), lecture
Tuesdays: teaching new skills, continued if needed and skill practice (formative assessment via activities in class)
Block days: (Wednesday or Thursday depending on student's period for AP Research): independent work toward progress for end of course assessments/performance tasks and continuation of formative assessment of skills if needed
Fridays: student check ins and PREP assessment; independent work or formative assessment (bi-monthly)

Unit 1: Structure of Research (2-3 weeks):

Research Structure: 1.1 (Overview of Academic Research)

The first week of the course will be devoted to introducing students to the philosophical and practical differences between their previous experiences and work with research, and the academic research they'll be doing in the course. They will also explore the bridge between AP Seminar and AP Research, and set up their PREP Journal as a fundamental tool for formative and summative assessment, as well as reflection

Activity #1: Transition Reflection (PREP Journal)--Students write a preliminary reflection about the differences between AP Seminar and AP Research based on conversations and syllabus exploration during the first two days of school. Students will also include potential challenges they may face after thinking about the fundamental nature of the course and themselves as learners/researchers. Students will share their reflection with a small group of peers, and then select at least one part of their reflection to share with the class. [**CR1e, CR1f, CR2b, CR4a, CR4b**)

Sources: May use page 6 of the 2016 AP Research Workshop Handbook, PPT about definition of research

Activity #2: Research Question Brainstorming and Initial Drafting--Following on the heels of the very brief work students did in AP Seminar in May and reviewing the 6 criteria for effective research questions, students will draft 2 (may be the same topic/problem/issue or two different topics/problems/issues, depending on how clear the student is on his or her research focus at this point) research questions and include at least 3 critera they used to develop these questions. Students will do a partner or trio peer share out and revision of 1 of their questions. As a whole class, we will discuss any challenges, surprises, or insights gleaned from this process. For homework, students will revise or rewrite a research question they plan to use to begin their work for the class. Note that the research question drafting is a recursive process that will continue until students submit their final draft IRP later in the fall. [**CR1a, CRf, CR4a, CR4b]**

Sources: Pages 53, 58, 60, and 63 of the 2016 AP Research Workshop Handbook

Activity #3: Smarter Searches--After introducing the SMARTER search to students, they will do a SMARTER search for 3 sources to begin gather background information about the topic/problem/issue they will be researching. Students will then select the best source of the 3 and do a poster presentation for that source, explaining the different aspects of the SMARTER search and how the process of doing this assignment helped or challenged their thinking about their current research question. [**CR 1b, CR1f, CR1g, CR4a, CR4b**]

Sources: Pages 75-81, and 114-118 in the 2016 AP Research Workshop Handbook
Overview of Deliverables: 1.2 (Structure of Academic Paper and Presentation/Oral Defense)

This unit will focus on taking a specific look at where we're heading with the end of course assessments in order to better frame the students' work. This will include looking at the specific structure and requirements for the academic paper and presentation/oral defense, as well as other required elements that are part of the foundation of the course work.

Activity #1: Understanding the Role of Expert Adviser--Students will participate in both individual reflection and brainstorming, as well as collaborative work/discussion involving possible scenarios and a check in with the teacher to develop an understanding of and ideas for picking an Expert Adviser. Students will answer several reflection questions prior to in class work, work together with a small group to address different student scenarios and the role of an Expert Adviser, and then finish by brainstorming ideas for their own needs, challenges, and possible places to begin when picking an Expert Adviser. Students will also begin a list of questions to ask the Expert Adviser; this list will be expanded as the students' work continues through the course. Students will include this as part of their next PREP Journal check in and evidence of work with the Expert Adviser will be recorded in the PREP Journal throughout the year. [**CR1e, CR1f, CR2a, CR4b**]

Sources: Pages 33-39 of the 2016 AP Research Workshop Handbook, Live Link sources from 2016 AP Training (sample letter for Expert Adviser), AP Research Course and Exam Description (2017)

Activity #2: Introduction to Academic Paper and Presentation/Oral Defense--Working backwards, students work to understand where they are heading and what they will need to learn and do in order to be successful in writing their Academic Paper and creating and delivering their Presentation/Oral Defense. To this end, students will examine sample papers, presentations/oral defenses, and rubrics in order to better understand the through course assessments. Students will read and discuss the rubrics, and then examine samples through the lens of these rubrics; we will discuss both in small groups and as a whole class. Students will generate questions, concerns, or insights and put these into a PREP Journal entry at the end of our work with the rubrics and samples. [**CR3, CR5, CR1e, CR1f, CR4a**]

Sources: Pages 15-23 of the 2016 AP Research Workshop Handbook, AP Research Course and Exam Description (2017), College Board AP Central sources (rubrics and released samples)

Activity #3: Building an Annotated Bibliography--Students begin in earnest to build an Annotated Bibliography that will provide the background necessary to identify a "gap" for their own research. Using what they learned about SMARTER searches, as well as the through course assessments, students will read and evaluate scholarly sources for their topic/problem/issue and current research question. We will review options for collecting these sources and building the Annotated Bibliography, and students will start by doing 5 entries. They will select 1 source and do a presentation about how this source helps them understand a clear "gap" in the body of scholarly work and what method(s) may be most appropriate for continued exploration of this "gap". [**CR1a, CR1b, CR1c, CR1g, CR4a, CR4b]**

Sources: Pages 64-81 of the 2016 AP Research Workshop Handbook

Unit 2: Assembling Research Proposal (2 weeks):

This second unit moves away from the broader philosophical underpinnings of the course and starts to break down the specific skills and work that will lead students to their end of course assessments. We will cover the specific components of the course with greater specificity as we begin working on their Individual Research Proposal.

Model of Research Process: 2.1

Activity #1: Overview of QUEST in AP Research--Students will examine the QUEST framework against what they understand about the course after the first couple of weeks of school and the work they've done up to this point. Working with a partner, students brainstorm possible ideas for what they'll do for each part of the framework as we work toward the through course assessments and eventually work on those assessments. Together they'll compare and contrast to identify differences between how they used QUEST in AP Seminar and how that will manifest in AP Research. [**CR1a, CR1b, CR1c, CR1d, CR1e, CR 1f, CR4a**]

Sources: Pages 6-7 of the 2016 AP Research Workshop Handbook, AP Research Course and Exam Description

Activity #2: Building an Annotated Bibliography--Students add another 5 sources to their ongoing work to build an Annotated Bibliography. Using the PAARC credibility components, students should assess their credibility thus far given the sources they've gathered. They will choose 1 source from the 5 new sources they add and share their answers to the Credibility Test Questions per the PAARC structure with a partner in class. In their PREP Journal, students should reflect on any changes they need to make in

their inquiry and Annotated Bibliography work based on this credibility check. [**CR1a-c, CR1e, CR1f, CR4b**]

Sources: Pages 82-90 in the 2016 AP Research Workshop Handbook, Live Link sources from 2016 training

Activity #3: Elevator Speech #1--For this first "elevator speech", students are imagining they are stepping into an elevator where they find their teacher who asks, "How is your research going?" With only a few floors to sum up where they are, students try to concisely and clearly address their current research question, hypothesis, and best evidence. This "elevator speech" model will be used throughout the course, starting very general and getting more and more precise as students get ready to write their academic papers. [**CR1a-c, CR1g**]

Sources: Pages 114-118 in the 2016 AP Research Workshop Handbook

Deliverables for RHS and College Board: 2.2

Activity #1: Introduction to the Inquiry Proposal--Students will become familiar with the requirements for the IPF, which is due by the end of November. Students will begin by looking at some sample IPFs to familiarize themselves with the requirements, as well as how research in different disciplines may look. While they examine the samples, students write down comments and questions to bring back to the class for discussion. After our discussion, in small groups students will each be assigned one of the 3 samples to accept, reject, or conditionally accept. Each group will provide justification for their decision based on what they've learned from the previous weeks' work. Finally, students will do an initial draft of their own IPF, filling in what they currently know. Students will do a "critical friends" peer edit of this initial draft, with an understanding that this form will be revised continually leading up to the end of November deadline. Drafts and revision will be included in the PREP Journal check ins, as well as future activities that involve practice presentations and peer review. [**CR1a, CR1b, CR1c, CR1e, CR1f, CR2a, CR4a, CR4b**]

Sources: Pages 192-204 in the 2016 AP Research Workshop Handbook,

Activity #2: Role of the PREP Journal--At this point, students have started their PREP Journal with parts if not all of the previous activities aimed to provide foundational information and constructs in order for students to orient themselves to the arc of the course and their work within it. Having collected about a month of work, students will dig deeper into the purpose and role of the PREP Journal, and understand the organization of the PREP Journal and expectations for grading and submission. Students will choose several reflection questions to answer about the first month of the course, as well as review and organize all of their previous work for their end of September PREP Journal teacher check in. Some example reflection questions may include:

- How has my understanding of research changed or been reinforced in the past few weeks?
- Why am I interested in exploring the topic/problem/issue I have chosen?
- What are 2-3 things I know for sure about my topic/issue/problem? Where did I get these ideas?
- What do I need to know? Where and how might I find some answers? [**CR1f, CR4a, CR4b**]

Sources: Pages 24-31 in the 2016 AP Research Workshop Handbook, Live Link Resources from 2016 training (sample PREP set up and entries)

Activity #3: Mapping out the Year--After examining the larger course outcomes and the specifics of the deliverables, students will begin to craft a working calendar and/or timeline as part of their PREP Journal in order to help them visualize their work, understand limitations as they continue to work toward completing their IPF, and consider challenges in successfully completing the through course assessments. Students will also consider feedback from other students of their work and research plan at this point as part of this process. Students will have time in class to draft this document as part of their PREP Journal and it will be used as part of the grading of each monthly PREP Journal check in. This document will also help students fine tune their IPF, reflect more accurately as they move through the research process, and potentially modify their research based on such reflection. [**CR1f, CR4a, CR4b**]

Sources: Course Syllabus

Unit 3: Evaluating Research Methods (2 weeks)

This unit will provide the foundational exploration and skill development for students to understand research method as part of their work toward research development. The work in this unit should provide enough clarity that students are able to select a research method that best fits their research question. Unit 4 will provide a much more extensive examination of research methods. ***Unit 3 will be the introduction to the core text for the course, and we will be using weekly direct instruction of content after students have read assigned pages. The expectation is that students will take notes as needed, and answer questions from the core text as directed by the teacher as an integral part of the PREP Journal for Units 3-6. Specific requirements beyond the reading, note taking, and teacher direction instruction will be referred to as Reading and Reflection in the listed activities for each unit.***

Experimental vs. Non-experimental 3.1

Activity #1: Reading and Reflection--Students read pages 12-21 in *Understanding Research Methods*, writing down any questions they want to discuss further in class.

After reading, students answer at least 1 discussion question in each reading section and answer it in their PREP Journal. [**CR1a, CR1f, CR4a, CR4b**]

Sources: Pages 12-21 in *Understanding Research Methods*

Activity #2: Building an Annotated Bibliography--Students add 5 more sources to their Annotated Bibliography. With the sources compiled thus far, students take a closer look at method and situate their own research with regards to research design and method. Students will examine all their sources and identify what design and methods are being used (Experimental vs. Non-experimental studies, Qualitative vs. Quantitative) in order to begin to understand what design and method will be best for their own research. Students will present their most current iteration of their research question, what discipline their research questions best fits within, as well as the best sources that will indicate a direction for design and method. [**CR1a, CR1b, CR1c, CR1f, CR1g, CR4a**]

Sources: Pages 12-21 in *Understanding Research Methods,* page 137-146 in the 2016 AP Research Workshop Handbook

Empirical Research 3.2

Activity #1: Reading and Reflection Questions--Students read pages 5 and 6 in *Understanding Research Methods*, writing down any questions they want to discuss further in class. After reading, students answer both discussion questions and answer them in their PREP Journal. [**CR1a, CR1b, CR1c, CR1f, CR4a, CR4b**]

Sources: Pages 5-6 of *Understanding Research Methods*

Activity #2: Mind the Gap (Getting Ready to Launch the Initial Research…)--This is a major formative assignment that pulls everything together the student has been working on since the start of the school year. At this point, the student should have read the bulk of the major scholarly work and key sources needed to situate his or her own research. Having done so, students should be able to clearly identify the "gap" that their own research will aim to explore. Thus, at this point (and in relation to updating his or her IPF rough draft) the student will record:

- Description of issue/topic and interest (what lead to choice)
- Revised Research Question, including variables, scope, value, and feasibility
- Gap that will be explored based on reading/exploration in the course
- Discipline
- Format and citation style aligned with discipline
- Design and Method best suited for research question and gap (will be general at this point)
- Equipment or resources that will be used/needed
- Potential challenges with research project at this point, including time constraints or areas of skill/knowledge currently lacking

In completing this work, students have a nearly complete rough draft of the IPF; this work will be used as part of our bi-monthly PREP Journal check in. The content of this assignment will be used in Activity #3 in the same unit. [**CR1a, CR1b, CR1c, CR1d, CR1f, CR4a, CR4b**]

Sources: Pages 65-67 and 192-204 in the 2016 AP Research Workshop Handbook, and pages 62-67 of *Understanding Research Methods*

Activity #3: Poster Presentation--Students will create a short (couple of minutes) poster presentation for Activity #2 and deliver it to the class. Students will receive peer feedback via "critical friends" protocol and will have a chance to self-reflection on their presentation in their PREP Journal. [**CR1e, CR1f, CR1g**]

Sources: Live Link Sources from 2016 training, pages 114-118 in the 2016 AP Research Workshop Handbook

Unit 4: Research Planning and Data Collection/Analysis (6 weeks):

This unit will delve deeper into the specifics of method and research planning (including literature reviews, ethical considerations, and constraints involved with research planning and execution.

Quantitative/Qualitative/Mixed Method 4.1 (this sub-unit will be 2 weeks long)

Activity #1: Reading and Reflection Questions--Students will have two weeks to break up the reading given it's quite a bit more lengthy than other units. Similar to the previous unit, students will choose 1 discussion question at the end of each reading section and answer those in their PREP Journal. In addition, students will write a brief reflection of how they can use the content of this unit to help revise their IPF (work from Activity #2 in Unit 3.2) with greater precision surrounding method. [**CR1a, CR1f, CR4a, CR4b**]

Sources: Pages 22-28, 71-83, 161-179, 270-272 in *Understanding Research Methods;* page 147 of the 2016 AP Research Workshop Handbook

Activity #2: Checking Your Alignment--Students will receive 1 of 4 different excerpts and will work together with a small group to check the alignment of the research question with the design and method. After answering a series of questions to this end, the smaller groups will get together with the other group who shared the same excerpt and discuss their answers. Finally, as a whole class students will share out what was most useful, surprising, or challenging about this short activity. [**CR1a, CR1b, CR1c, CR1e, CR1f, CR4a**]

Sources: Pages 140-146 in the 2016 AP Research Workshop Handbook

Activity #3: Engaging in Quantitative/Qualitative/Mixed Methods--Health Halos Experiment and Field Observations/Interviews activities [**CR1a, CR1b, CR1c, CR1e, CR1f**]

Source: Pages 148-155 of the 2016 AP Research Workshop Handbook

Activity #4: Peer Review Refresher--Even though students have been peer editing in some capacity through the "critical friends" protocol and other simple peer feedback activities, this activity is meant to isolate some important do's and do not's in anticipation of finalizing the IPF and then beginning to work on the Academic Paper. Students will watch a few short videos in class, as well as a slideshow with key points to facilitate a discussion and set expectations for peer review, which includes ethical considerations and plagiarism as defined by the College Board in the CED. [**CR1e, CR1f, CR2a, CR2b**]

Sources: PPT, Live Link Sources from 2016 Training, RHS Peer Review video

Hypothesis, Purposes, and Questions 4.2

Activity #1: Reading and Reflection--Students read pages 84-85 in *Understanding Research Methods*, thinking specifically about the current draft of their IPF (Inquiry Proposal Form) and how this chapter may impact revision of that document. After reading, students answer discussion questions #1 and #4 as practice, and then revise their own research question on their IPF if needed. Discussion questions are included in the PREP Journal. [**CR1d, CR1f, CR4a, CR4b**]

Sources: Pages 84-85 in *Understanding Research Methods*

Activity #2: Assumptions and Definitions--Students use their current draft of the IPF and answer the following questions in their PREP Journal:

- At this point in your research planning and IPF drafting, are you making any assumptions that may create potential challenges in your research? If so, how could you address these assumptions before finishing your IPF and starting your research? Are there any acceptable assumptions at play in your IPF? If so, explain.
- What needs to be defined (that hasn't already been defined) as part of your current IPF draft? What's the importance of defining terms/ideas/concepts as part of your research planning? [**CR1d, CR1f, CR4a, CR4b**]

Sources: Pages 108-113 in the 2016 AP Research Workshop Handbook

Ethical Considerations 4.3

Activity #1: Reading and Reflection Questions--Students read pages 32-38 in *Understanding Research Methods*, and answer the Topic Review Questions in

preparation for the rest of the activities this week. Students will answer the questions in their PREP Journal. [**CR1a, CR2a, CR2b, CR4a, CR4b**]

Sources: Pages 32-38 in *Understanding Research Methods*

Activity #2: IRB...What, Why, How?--Students should understand an IRB on all levels: what it is, why it's used/needed, and how's it's done or how students would go about using/doing an IRB for their own research. In addition, we will discuss risk assessment and safety measures taken, seeing as how many students may not need an IRB, but do need to include safety measures as part of their IPF. After reviewing definitions and samples of IRBs, as well as having possible guest faculty speakers address the use of IRBs, students will then consider any specific ethical considerations they need to add to their IPF. [**CR1a, CR2a, CR2b, CR4a, CR4b**]

Sources: Pages 177-191 of the 2016 AP Research Workshop Handbook, Faculty Guest Speakers, Live Link Sources from 2016 training

Activity #3: Ethical Problems and Plagiarism--This particular activity is a more refined targeted look at other ethical problems students may encounter as they begin their research work in earnest. Having completed AP Seminar and having read the AP Research student course syllabus--which includes both the College Board AP Capstone language about plagiarism and Redwood High School's Academic Honesty Policy--students already have a solid foundation by which to understand their ethical responsibilities as researchers engaging and scholarly work. Students will work in groups and examine different scenarios in order to test their understanding of plagiarism in the context of the course, and then groups will share their findings with the class. As students begin to get closer to conducting their research and working on the through course assessments, refreshing themselves with the specifics of these ethical considerations is vital.

Sources: Pages 105-106 in the 2016 AP Research Workshop Handbook

Activity #4: Final IPF Revisions--At this point students should have all the information they need to complete their final draft IPF next week. Students should be working on this and will do one final peer review early next week in the form of another elevator speech. (see Unit 4.4) [**CR1a, CR1b, CR1c, CR1d, CR1f, CR4a, CR4b**]

Sources: Live Link Sources from 2016 training, pages 192-204 in the 2016 AP Research Workshop Handbook, PREP Journal drafting and work on IPF

Levels of Constraints 4.4

Activity #1: Time Keeps on Slippin'--Students will reflect at where they've been and what they've done, but also where we're headed with a particular focus on time considerations and constraints. Using their calendar, as well as the course syllabus with

major work deadlines, students will re-examine their IPF in preparation for conducting their research, analyzing/interpreting their findings, and, finally communicating their results all by April. We will also discuss any other "constraints" and address how those might factor into final IPF revisions and the work to come. [**CR1f, CR4a, CR4b**]

Sources: Pages 156-159 in the 2016 AP Research Workshop Handbook

Activity #2: IPF Peer Review Elevator Speech--Students will work with a partner or two partners and will do a several minute Elevator Speech for their final draft IPF and will receive peer feedback on the speech delivery itself and content of the IPF in preparation for the IPF deadline. [**CR1e, CR1g, CR4a**]

Sources: See above for Unit 4.1 Activity #4 and Unit 2.1 Activity #3

Activity #3: Final Draft of IPF--Final draft of IPF is submitted for approval to teacher. Students will have kept the entire process (first draft, revision, peer review, and final draft) as part of their PREP Journal. [**CR1a, CR1b, CR1c, CR1d, CR1e, CR1f, CR2a, CR4a, CR4b**]

Sources: Pages 192-204 in the 2016 AP Research Workshop Handbook

Organizing Literature Reviews 4.5

Activity #1: Reading and Reflection--Students read pages 41-58 in *Understanding Research Methods,* with greater emphasis on pages 49-58 given the timing of this unit with regards to students' work, finished IPF, and upcoming deliverables. As such, students will answer the Discussion Questions and Research Planning Questions on page 51, Topic Review Questions #1-5 on page 54, and the Research Planning Question of page 58. Students will answer these questions in their PREP Journal. [**CR1a, CR1b, CR1c, CR1d, CR1f, CR4a, CR4b**]

Sources: Pages 41-58 in *Understanding Research Methods*

Activity #2: Literature Review Sample Work--Using samples of Academic papers from College Board AP Central and pages 123-131 in the 2016 AP Research Workshop Handbook, students will examine the role, content, and structure of literature reviews written within different academic disciplines to help prepare them for their own draft of a literature review that includes relevant and necessary content and that is organized in a way that is aligned with their discipline. After working with samples, there will be time for sharing out and whole class discussion. [**CR1d, CR1e, CR1f**]

Sources: College Board AP Central, pages 123-132 in the 2016 AP Research Workshop Handbook

Activity #3: Drafting Your Own Literature Review (aka Introduction)--At this point, students will start drafting the literature review section of their own academic paper (about 1,000 words of the Academic Paper). The previous two activities in this unit should provide enough information and context that students can begin to use this part of the academic paper to define, contextualize, analyze, and synthesize what is known in the field. Students will do a peer review of these drafts. As part of the this initial draft, students will also provide a reflection and rationale in the PREP Journal to justify their choices in organization, structure, and use of the literature review in their paper. This draft will utilize previous key activities that include Mind the Gap and Building an Annotated Bibliography, as well as any other relevant work from the PREP Journal. The rough draft of the Literature Review will be due in mid-December before the Final Exam and will be part of the December PREP Journal check. [**CR1b, CR1e, CR1f, CR1g, CR3, CR4a, CR4b**]

Sources: Pages 119-132 in the 2016 AP Research Workshop Handbook, pages 41-58 in *Understanding Research Methods*, Academic Paper rubric (AP Central)

Unit 5: Assembling Research Findings (3 weeks):

Unit 5 will take students through the end of the Fall semester. At this point in their inquiry process, students have an approved IPF and a draft of the start of their academic paper based on their work during the Fall semester. During both Units 5 and 6, students will be conducting their own research in preparation for analyzing and synthesizing the results of their findings and communicating those findings as part of their Academic Paper and Presentation/Oral Defense. The concepts and information in Unit 5 will help fill in gaps students might have in setting up and conducting their research.

Biased and Unbiased Sampling 5.1

Activity #1: Reading and Reflection--Students read pages 89-103, determining which topics are most relevant to their own research project. After reading all the pages and making this determination, students will answer the Research Planning Question for the topic (Topics 25-29) most relevant to their own inquiry. Then, students read pages 104-109 and pages 118-120, answering the Research Planning Questions. Finally, students read pages 110-117 based on the method(s) they are using (so, quantitative or qualitative, or both if mixed method) and answer the Research Planning Questions aligned with their method. These answers will be included in the PREP Journal. [**CR1a, CR1b, CR1f, CR4a, CR4b**]

Sources: Pages 89-120 in *Understanding Research Methods*

Activity #2: Conducting Research (Planning and Reflection)--Students will focus on the next month or two conducting their own research and gathering any resulting data. First, students will return to their calendar and map out and/or revise their independent work

for December and January related to conducting their own original research. Students will set weekly deadlines for themselves using their IPF and course syllabus (Timeline). Students will also reflect on any concerns, challenges, worries, or holes in their plan for these two months in their PREP Journal. Essentially, students should synthesize the work they've done up to this point to inform their independent work for the next two months. This reflection will also give students a chance to review and consider the qualities of effective, high level reflection in preparation for their semester exam. [**CR1a, CR1b, CR1d, CR1f, CR4a, CR4b**]

Sources: Course Syllabus and page 212 of the 2016 AP Research Workshop Handbook

Introduction to Validity 5.2

Activity #1: Reading and Reflection--Students read all of 123-158 through the lens of what's useful and necessary to their own research project. Rather than answering questions provided by the textbook, students should consider the Discussion Questions and Research Planning Questions to help guide their notetaking about what's most important to understand for their own project and any questions they have to be answered as part of a whole class discussion or one-on-one meetings with the teacher. In this way, this reading will be used to refine students' independent work as outlined in Activity #2 in Unit 5.1. (**CR1a, CR1b, CR1d, CR1f, CR4a, CR4b**]

Sources: Pages 123-158 in *Understanding Research Methods*

Creating Synthesis 5.3

Activity #1: Reading and Reflection--Students read pages 59-61 in *Understanding Research Methods* and answer the Research Planning Question in relation to their draft Introduction/Lit Review of the Academic Paper from Unit 4.5. Students should then consider any revisions they should and can make to that draft after reading this chapter before the start of the Spring semester. [**CR1a, CR1b, CR1c, CR1d, CR4a, CR4b**]

Sources: Pages 59-61 in *Understanding Research Methods*

Activity #2: Ring of Truth--Students begin to explore the results and discussion Components of the Academic Paper through this in class activity. The teacher will project or draw a ring on the screen or board; students will copy that down in the PREP Journal and then use the list of numbered statements, placing the number corresponding to each statement inside, outside, or on the edge of the ring to represent their understanding of how each statement is true, false, or possible uncertainty. The teacher will reveal the correct placement for each statement, and as a class will discuss the places students may have struggled and why they struggled. After, students will write a short reflection paragraph about how this activity might be useful in getting them ready to draft the Results and Discussion section of their Academic Paper. Students will then examine

the Academic Paper Rubric to help solidify their understanding of the requirements of this part of the paper. [**CR1b, CR1d, CR1f, CR4a, CR4b**]

Sources: Pages 160-162 in the 2016 AP Research Workshop Handbook, Academic Paper rubric (AP Central)

Activity #3: Fall QUEST Presentation (Fall Semester Final Exam)--Students will narrate their QUEST story in a presentation. This final presentation will include highlights of their work during the Fall semester and what they anticipate and envision for the Spring semester. Students can choose between an elevator speech style or poster presentation style for this final presentation of the semester; the presentation should include some type of visual aid and should be between 3-5 minutes in length. Presentations will be recorded so students can watch and reflect on their own strengths/weaknesses in presentation skills. Students are encouraged to examine the body of work in their PREP Journal, as well as any other work from the semester, as inspiration for the presentation. Students will have time to practice their presentation with a peer to receive feedback before delivering to the class as a whole. Sample questions students can consider to prepare for the presentation might include (but are not limited to):

- What about my work for AP Research am I most excited about or proud of at the end of the Fall Semester?
- What has been the most challenging part of AP Research? How have I mitigated these challenges?
- Looking at the body of work in my PREP Journal, what stands out to me? What can I learn from looking back through the PREP Journal?
- What has surprised me the most as I've gone through this process of inquiry?
- What am I most looking forward to in the Spring semester?
- As I conduct my research, analyze and synthesize my findings from the original research, and start working on the Academic Paper [**CR3**] and Presentation/Oral Defense, what challenges do I anticipate facing? What am I most uncertain about? What help do I need with these challenges and who can help me? [**CR1a, CR1b, CR1c, CR1d, C1e, CR1f, CR1g, CR4a, CR4b, CR5)**

Unit 6: Communicating Results (4 weeks):

Unit 6 is the final unit that directly utilizes the core text for the course; at this point students will be working on some new content/skills, but will independently be finishing their research so they can begin to draft the latter parts of the Academic Paper in February. Academic Paper drafting and Practice Presentations/Oral Defense preparation will be a weekly part of the Semester 2 Work, and is indicated as part of the activities listed in the units below.

Logic and Reasoning 6.1

Activity #1: The Foundation of all Good Writing--As students draft in earnest this semester, this activity aims to ground them in the notion that all effective writing is

logical, and presents ideas that are well reasoned. In pairs or trios, students annotate the Academic Paper rubric in terms of language or terms that relate to logic and reasoning. Together, we will discuss what this means and how these terms that they're familiar with uniquely manifest within their work for the Academic Paper in AP Research. [**CR1e, CR1f, CR1g, CR3, CR4a**]

Sources: Academic Paper rubric (AP Central)

Activity #2: Peer Review--Students will work with a partner or partners (maximum of 2 other students) to peer review the draft of the Literature Review submitted in December; students should make any revisions to strengthen this part of the Academic Paper based on any feedback they receive from the peer review session. Students record anything left to be done or changed with the beginning of the Academic Paper in their PREP Journal to be used for the teacher check ins this month. Students will suggest/edit via Google Docs. [**CR1c, CR1e, CR2a, CR2b, CR3**]

Sources: Academic Paper rubric (AP Central), pages 234-235 in the 2016 AP Research Workshop Handbook

Activity #3: Academic Paper Drafting--Students draft the next part of the Academic Paper in preparation for peer review and teacher check in later in January (January 26 deadline). Students will draft the Method/Process/Approach sections or content of their Academic paper, annotating their draft with any questions, concerns, or areas in need of further development. [**CR1d, CR1g, CR3**]

Sources: AP Research Course and Exam Description, Academic Paper rubric (AP Central)

Communicating Results 6.2

Activity #1: Reading and Reflection--Students read pages 298-301 in *Understanding Research Methods* and write down a brief description of their data and any context needed to understand the data being used for their inquiry. By this point, during the third week of January, students should be wrapping up any research they're conducting; therefore, they should have data and results that they will begin to analyze and explain more fully next week. The reading for this week should orient students and provide additional information to help begin the drafting of the Results/Product/Findings section of the Academic Paper in February. [**CR1b, CR1d, CR1f, CR3, CR4b**]

Sources: Pages 298-301 in *Understanding Research Methods*

Activity #2: Peer Review of Method/Process/Approach section of Academic Paper in class. Students will read at least 2 other students' drafts and will provide feedback via Google Docs. [**CR1e, CR2a, CR2b, CR3**]

Sources: Academic Paper rubric (AP Central), all previous sources for Peer Review as needed

Activity #3: Practice Presentation--Students organize and deliver a 5-7 minute presentation of the first two parts of their drafted Academic Paper: Introduction/Literature Review, and Method/Process/Approach. The teacher will field several questions to the student at the end of his or her presentation aligned with the type of questions used for the Oral Defense:

- Questions pertaining to the student's research/inquiry process
- Questions focused on the student's depth of knowledge
- Questions focused on student reflection [**CR1g, CR3, CR4a, CR5**]

Sources: Presentation/Oral Defense rubric (AP Central), pages 229-231 in the 2016 AP Research Workshop Handbook, Live Link sources from 2016 training

Evaluating and Presenting Conclusions/Implications/Limitations 6.3

Activity #1: Reading and Reflection--Students read pages 302-304 in *Understanding Research Methods* and then respond to the following question in their PREP Journal:

- How does this reading and its content relate to and align with the Discussion/Analysis/Evaluation and Conclusion/Future Directions sections of the Academic Paper? How can you use the information from this reading to help organize and begin drafting of these sections of the paper? [**CR1a, CR1b, CR1d, CR1f, CR3, CR4a, CR4b**]

Sources: Pages 302-304 in *Understanding Research Methods*

Activity #2: Academic Paper Drafting, Part 2--Students will draft the Results/Product/Findings section of their Academic Paper; students should be ready with a draft of that section by next week on Block day in order to do peer review. [**CR1g, CR3**]

Sources: Sample essays (AP Central and 2016 AP Research Workshop Handbook) and Academic Paper rubric (AP Central)

Activity #3: Peer Review of Results/Product/Findings section of Academic Paper in class. Students will read at least 2 other students' drafts and will provide feeback via Google Docs. [**CR1e, CR2a, CR2b, CR3**]

Sources: Academic Paper rubric (AP Central), all previous sources for Peer Review as needed

Unit 7: Academic Paper Drafting and Presentation/Oral Defense Practice (7 weeks)

During Unit 7 students will complete the drafting and revision of their Academic Paper, including finalizing their Bibliography in preparation for submitting to the College Board via the Electronic Portfolio in late April. Students will have multiple opportunities to do peer review of their draft. Students will also begin to prepare, organize, create, and practice for their Presentation and Oral Defense in April.

Activity #1(Weeks 1-3): Finishing the Rough Draft--Students will draft the final two sections of their Academic Paper (Discussion/Analysis/Evaluation and Conclusion/Future Directions). Both of these final sections should be drafted by the end of February to allow ample time for revision. During time time students should engage their Expert Adviser in a review of their paper, its adherence to method, and its alignment to the research question. [**CR1d, CR1e, CR1g, CR2a, CR2b, CR3**]

Sources: Pages 298-304 in *Understanding Research Methods*, Academic Paper Rubric (AP Central), and AP Research Course and Exam Description

Activity #2 (Week 4): Peer Review of Rough Draft of the Academic Paper in class. Students will read 1-2 other students' drafts and provide feedback via Google Docs. [**CR1e, CR2a, CR2b, CR3**]

Sources: Academic Paper rubric (AP Central), all previous sources for Peer Review as needed

Activity #3 (Week 5): Partner Practice Presentation of Rough Draft--Students will present their Rough Draft in 10 minutes to a partner, focusing on the AP Research guidelines for the Presentation in deciding what to present. Presentations will be recorded and partners will provide feedback on the content, using the Presentation/Oral Defense rubric. After each presentation, student pairs will discuss ideas for revising the content and delivery for the final Presentation and brainstorm the design and content of the accompanying multimedia product. [**CR1e, CR2a, CR2b, CR5**]

Sources: Presentation/Oral Defense Rubric, pages 225-231 in the 2016 AP Research Workshop Handbook

Activity #4 (Weeks 6-7): Designing, Planning, and Practicing the Presentation and Oral Defense--Students Design, Plan, and Practice for their Final Presentation and Oral Defense, which will start at the end of March and continue through the first weeks of April. Students have a week to take what they used for their previous practice presentation and revise the content, extend the presentation content, design and create a multimedia product to accompany their presentation, and practice the presentation. Final practice presentations should take 15-20 minutes. The following week, students will present in front of peer panels their entire Presentation using the multimedia product. Peer panels will be made up of 3-4 other students; these students will ask questions similar to those asked as part of the Oral Defense. Students will have a chance to reflect

on this practice using the Presentation/Oral Defense rubric and their PREP Journal. [**CR4g, CR5**]

Sources: Presentation/Oral Defense Rubric (AP Central), AP Research Course and Exam Description

Activity #5 (Week 7): Final Academic Paper Peer Review--This multiple day peer review session is the final opportunity for students to receive feedback before uploading to the Electronic Portfolio. Students will read 4-5 other students' essays over the course of a week, providing feedback via Google Docs. Students have until **April 23** to make changes to their Academic Paper. [**CR1e, CR1g, CR2a, CR2b, CR3**]

Sources: Academic Paper rubric (AP Central), all previous sources for Peer Review as needed

Presentations and Oral Defense: March 26-April 6

Final Draft of Academic Paper: April 23

Unit 8: End of Course Reflection and AP Seminar Mentoring (3-4 weeks)

This final unit will begin after the through course assessments and scores are submitted to the College before and after the regular AP exam window (May 7-18) to allow students taking other AP courses to prepare for those exams. The remaining weeks of the course after May 18 will include working directly with current AP Seminar students, preparing for the AP Research Exit Interview and final PREP Journal submission, and completing the Final Exam (Reflection).

Activity #1: AP Seminar Mentoring--Following the AP Seminar exam, students will be assigned a partner or partners from an AP Seminar class; together students discuss essential advice, brainstorm ideas for topics/problems/issues that AP Seminar students may use to begin their work for AP Research, and draft early stage problem statements and/or research questions. Together students may generate questions that AP Seminar students can share with their teacher and peers about AP Research after looking at sample papers and rubrics from AP Central. AP Research students will include evidence of the mentoring work they do as part of their final PREP Journal check for May. [**CR1d, CR1e, CR1f, CR4b**]

Sources: Live Link Sources from 2016 training, the 2016 AP Research Workshop Handbook and the AP Research Course and Exam Description

Activity #2: Final PREP Journal Submission and Exit Interview--Students will complete final entries in their PREP Journal and prepare for an Exit Interview with the teacher. Final entries in the PREP Journal may include the following:

- Next steps with their research project, including possible work on publication

- Brainstorming for final course and program reflection for Final Exam
- A list of "What I Wish I'd Known" about AP Research or any other advice (could be continued from mentoring work with AP Seminar students)
- Evaluating the value of the PREP Journal specifically, and any recommendations for modifying or improving this requirement

The Exit Interview will include a teacher check of this final PREP Journal month; the teacher will also ask students several questions that are evaluative and reflective in nature. Students should be clear, precise, and confident in their discussion and answers during the Exit Interview. [**CR1a, CR1b, CR1c, CR1d, CR1f, CR1g, CR4a, CR4b**]

Sources: Final Exam Handout, PREP Journal (all previous work)

Activity #3: Final Exam--Students Write a Final Reflection about the course and the AP Capstone program as a whole. The reflection will be written during the Final Exam period, but brainstorming for the reflection will be part of their Final PREP Journal submission; they can use any part of the PREP Journal on the Final Exam. [**CR1d, CR1f, CR1g**]