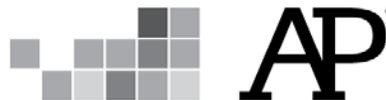




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## Curricular Requirements

- CR1a Students develop and apply discrete skills identified in the learning objectives within the Big Idea 1: Question and Explore.
- See pages 8, 9, 10, 12, 14, 15
- CR1b Students develop and apply discrete skills identified in the learning objectives within the Big Idea 2: Understand and Analyze.
- See pages 8, 9, 15
- CR1c Students develop and apply discrete skills identified in the learning objectives within the Big Idea 3: Evaluate Multiple Perspectives.
- See pages 10, 15
- CR1d Students develop and apply discrete skills identified in the learning objectives within the Big Idea 4: Synthesize Ideas.
- See pages 15, 16, 17
- CR1e Students develop and apply collaboration skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.
- See pages 18, 19
- CR1f Students develop and apply reflection skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.
- See page 15
- CR1g Students develop and apply written and oral communication skills identified in the learning objectives within the Big Idea 5: Team, Transform, and Transmit.
- See pages 15, 17
- CR2a Students develop an understanding of ethical research practices.
- See pages 6, 7
- CR2b Students develop an understanding of the AP Capstone™ Policy on Plagiarism and Falsification or Fabrication of Information.
- See page 2
- CR3 In the classroom and independently (while possibly consulting any expert advisors), students learn and employ research and inquiry methods to develop, manage, and conduct an in-depth investigation of an area of personal interest, culminating in an academic paper of 4,000-5,000 words that includes the following elements:
- Introduction
  - Method, Process, or Approach
  - Results, Product, or Findings
  - Discussion, Analysis, and/or Evaluation
  - Conclusion and Future Directions
  - Bibliography
- See pages 3, 4, 5, 13, 16, 17



- 
- CR4a Students document their inquiry processes, communicate with their teachers and any expert advisors, and reflect on their thought processes.
- See pages 3, 4, 5, 7, 12, 15
- CR4b Students have regular work-in-progress interviews with their teachers to review their progress and to receive feedback on their scholarly work as evidenced by the PREP.
- See page 3
- CR5 Students develop and deliver a presentation (using an appropriate medium) and an oral defense to a panel on their research processes, method, and findings.
- See pages 5, 19, 20



## AP Research Course Syllabus

### Course Goals

- To engage and challenge the student through the in-depth consideration of a student-selected research question
- To empower students to join the conversation of scholars in a selected field of study
- To cultivate higher-level critical and creative thinking skills by making connections between and among a variety of types of sources
- To find and investigate a gap in information and to contribute to the research in the field
- To hone the craft of academic writing by selecting, synthesizing, and embedding researched information with academic integrity
- To develop college-level skills for a successful college and career future
- To foster a love for learning

### Textbook Resources

- Booth, Wayne C. et al. *The Craft of Research*. 3rd ed. Chicago: The University of Chicago Press, 2008.
- Christensen, Larry B. et al. *Research Methods: Design and Analysis*. 12th ed. Boston: Pearson, 2014.
- Graff, Gerald, and Cathy Birkenstein. *They Say, I Say: The Moves that Matter in Academic Writing*. 2nd ed. New York: W.W. Norton & Co., 2010.
- Leedy, Paul D., and Jeanne Ellis Ormrod. *Practical Research: Planning and Design*, 10th ed. Boston: Pearson, 2013. Print.
- Palmquist, Mike. *The Bedford Researcher: An Integrated Text, CD-ROM, and Web site*. Boston: Bedford/St. Martin's, 2003.
- Turabian, Kate L., and Gregory G. Colomb. *Student's Guide to Writing College Papers*. 4th ed. Chicago: The University of Chicago Press, 2010.

### Student Expectations

A culmination of the AP Capstone Program, the AP Research course is designed for the motivated student who possesses an intrinsic desire to expand a field of knowledge by considering multiple perspectives of scholars in a student-selected area of investigation and adding an additional dimension that contributes to the depth of understanding of the research area. Through a series of scaffolding units centered around the research process, students will analyze the credibility of arguments from a variety of types of sources about the same issue, discerning from those sources a new, but related, complex problem or issue, through which students will hone the skill of developing a targeted research question that drives the research process. Students will present their preliminary search about information related to their topic in a research inquiry proposal for specific topic examination and approval.

AP Research students understand that the research process is not linear, but recursive, requiring students to think and re-think continually about their proposed research question and their selected research method, design, and approach to ensure a cohesive alignment of the final academic paper of approximately 4,000-5,000 words (75 percent of the summative AP assessment). Students will reflect on all phases and components of the research process by creating and regularly updating a process and reflection portfolio (PREP). Students will present their



research findings in a multimedia format and participate in an oral defense of their research (25 percent of the summative AP Research assessment).

Valuing the efficacy of the AP Capstone Program, AP Research students showcase selected components of their various products for inquisitive visitors to peruse and question.

The successful AP Research student possesses the necessary discipline for independent study and fully engages in all phases of product development, individually and in peer-review assessments, and adheres to all deadlines.

## **Grading Policy**

The AP Research teacher will assess a variety of products students create as part of the research process. Each student must record each step of the process in the above-mentioned PREP. Examples of assessed products include (but are not limited to) graphics used to develop a targeted research question, an inquiry proposal approved by the AP Research teacher, an annotated bibliography that reflects an alignment of sources, a literature review incorporating select parts of the annotated bibliography, and written reflections of all stages of the research process and its many challenges. Multiple grades may be taken on some products to ensure the student is following the proper research process and to check for student's progress as the student's success in this course depends on effective time management.

After submitting a draft of the academic paper to Turnitin.com to check for plagiarism and revising the paper as needed to eliminate even incidental plagiarism, the student is responsible for submitting the final draft of the academic paper to the College Board Digital Portfolio. The AP Research teacher grades this paper according to the College Board rubric and enters the grade into the portfolio grading system, along with the teacher's assessment of the student's presentation and oral defense. No grades submitted to the College Board Digital Portfolio count as class grades as those grades are part of the AP Exam for the course.

## **Technology Availability**

While not absolutely necessary to carry out quality research, access to computing resources will greatly facilitate the process. It is assumed that students have (at a minimum) access to school and library computers as well as access to databases and other online resources. Students will be provided with free access to EBSCOhost online research databases.

## **AP Capstone Policy on Plagiarism and Falsification or Fabrication of Information [CR2b]**

Participating teachers shall inform students of the consequences of plagiarism and instruct students to ethically use and acknowledge the ideas and work of others throughout their course work. The student's individual voice should be clearly evident, and the ideas of others must be acknowledged, attributed, and/or cited.

A student who fails to acknowledge the source or author of any and all information or evidence taken from the work of someone else through citation, attribution or reference in the body of the work, or through a bibliographic entry, will receive a score of 0 on that particular component of the AP Seminar and/or AP Research Performance Task. In AP Seminar, a team of students that fails to properly acknowledge sources or authors on the Team Multimedia Presentation will receive a group score of 0 for that component of the Team Project and Presentation.

A student who incorporates falsified or fabricated information (e.g., evidence, data, sources, and/or authors) will receive a score of 0 on that particular component of the AP Seminar and/or AP Research Performance Task. In



AP Seminar, a team of students that incorporates falsified or fabricated information in the Team Multimedia Presentation will receive a group score of 0 for that component of the Team Project and Presentation.

[CR2b] — Students develop an understanding of the AP Capstone Policy on Plagiarism and Falsification or Fabrication of Information.

## Ethical Research

The U.S. Department of Health and Human Resources outlines in the Belmont Report specific regulations for the protection of human subjects involved in the research process. All students' research proposals will be vetted for potential harm to human subjects to determine the need for an institutional review board approval. Students will receive instruction on ethical research practices during Unit 1 of the course.

## Equity and Access Policy (as per the College Board)

“The College Board strongly encourages educators to make equitable access a guiding principle for their AP programs by giving all willing and academically prepared students the opportunity to participate in AP. We encourage the elimination of barriers that restrict access to AP students from ethnic, racial, and socioeconomic groups that have been traditionally underserved. Schools should make every effort to ensure their AP classes reflect the diversity of their student population. The College Board also believes that all students should have access to academically challenging coursework before they enroll in AP classes, which can prepare them for AP success. It is only through a commitment to equitable preparation and access that true equity and excellence can be achieved.”

## Timeline of AP Research Goals

### September-October

- Begin gathering sources for contextualizing the topic of inquiry within the field of knowledge.
- Preliminary inquiry proposal, one-slide PowerPoint, videotaped presentation followed by a peer review of the proposal and presentation performance (also showcased as a component of the research process at Meet the Teacher Night in mid-October).
- Rough draft of the formal Inquiry Proposal Form presented to teacher in a one-on-one interview. [CR3]
- PREP reflections of research process (recorded every week and graded periodically in one-on-one interviews with the teacher). [CR4a] [CR4b]
- Inquiry Proposal Form finalized and submitted.
- Expert advisor sought and secured.

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

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

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



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

### October-November

- Selection of citation style appropriate for area of study.
- Continue gathering sources, implementing research plan, and revising as needed.
- Research for background information, mining and aligning sources in an annotated bibliography, and aligning research question with research approach, design, and method (revising as needed).
- Research with intensity.
- One-on-one interviews with the teacher and/or expert advisor.
- PREP reflections on research process. [CR4a]

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

### November-December

- Continue researching with intensity.
- Write a literature review using aligned sources in the annotated bibliography to situate the topic and the argument.
- Offer literature review for peer review and one-on-one teacher interview.
- One-on-one interviews with the teacher and/or expert advisor.
- PREP reflections of research process. [CR4a]

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

### December-January

- Continue researching with intensity.
- One-on-one interviews with the teacher and/or expert advisor.
- PREP reflections of research process. [CR4a]

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

### January-February

- Begin drafts of academic paper, focusing first on revised literature review and methodology sections of the paper. [CR3]
- Complete any additional experiments, surveys, products, and interviews used for support of research focus.
- Complete a full rough draft of academic paper by the end of February.

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

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

## February-March

- Self-assess rough draft of academic paper according to the rubric, making sure that all rubric components are fulfilled. [CR3]
- Offer rough draft of academic paper for peer review.
- Individually and through peer review, proofread, edit, and revise academic paper.
- Submit paper to Turnitin.com and revise any incidental plagiarism.
- Ancillary products, performances, and projects submitted for separate classroom assessment.
- Begin planning, preparing, and practicing multimedia presentations.
- Begin preparing for and practicing for oral defense.

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

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

## March-April [CR5]

- Students submit academic papers to the College Board Digital Portfolio for teacher assessment by March 30. [CR3]
- Students contact expert advisors, reminding them of their role as a presentation/oral defense panel member.
- Students plan and design a multimedia presentation.
- Students practice, individually and with peers, their presentations and oral defense.
- Multimedia presentations and oral defense begin April 1.
- Teacher enters all scores in the College Board Digital Portfolio April 15-30.

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

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

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

## April-May

- AP Research students share their work with AP Seminar students.
- Students research other venues for possible submission/publication of their work.
- Students showcase their work at district's annual AP Showcase.

## Third Week of May

- Students submit final PREP in a one-on-one exit interview with the teacher. [CR4a]

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

## Unit 1 (Semester 1: Weeks 1–5): Course Foundations

The AP Research student is introduced to the course goals and task descriptions for AP Research, examines the differences between AP Seminar and AP Research regarding academic research, and explores possible topics and areas of inquiry as potential targets of further research.

### Before We Begin the QUEST

**Activity 1:** *How Do We Know What We Know?* Students brainstorm ways we know what we know and share responses. Students then read and discuss the insert, “Floods of Misinformation” in Bloom’s text.

**Activity 2:** *Different Ways of Knowing* (2015 AP Research Student Workbook). In groups, “transform the three ontological positions into ways of knowing” with which you can identify. “Create a name” and a graphic that symbolizes each of the three ways of knowing. Discuss the differences in ways of knowing in different disciplines.

**Source:** Booth, Wayne C. et al. *The Craft of Research*. 3rd ed. Chicago: The University of Chicago Press, 2008.

### Review of Plagiarism and Changes in the College Board’s Policy

**Activity 1:** *What Plagiarism Is and Is Not*. Students evaluate specific examples of text for plagiarism. [CR2a]

**Source:** Magrogan, Serena F. “BI1-Plagiarism.” PPT. AP Teacher Community. College Board’s Revised Policy on Plagiarism, 2015.

[CR2a] — Students develop an understanding of ethical research practices.

**Activity 2:** Read and discuss the excerpt on page 91 of Christensen, “Two Cases of Reportedly Fraudulent Research.” [CR2a]

**Source:** Christensen, Larry B. et al. *Research Methods: Design and Analysis*. 12th ed. Boston: Pearson, 2014.

[CR2a] — Students develop an understanding of ethical research practices.

### Ethics in Research

**Focus Activity:** Using as a point of focus a hypothetical school-wide curriculum initiative, students will comment on potential problems concerning ethics when devising and conducting faculty, student, and community surveys about the implementation of the initiative. (Surveys will be addressed in greater depth at the end of this unit.)

**Activity 1:** After viewing the U.S. Department of Health and Human Services website, discuss the importance of researching ethically as well as the importance of considering whether or not an institutional review board approval of research topic and method is necessary. [CR2a]

**Source:** “The Belmont Report,” *The U.S. Department of Health and Human Services*, April 18, 1979.

[CR2a] — Students develop an understanding of ethical research practices.

**Activity 2:** Read and respond to Maschke’s article, “Human Research Protections: Time for Regulatory Reform?”

**Source:** Maschke, Karen. “Human Research Protections: Time for Regulatory Reform?” *The Hastings Center Report* 38, no. 2 (Mar-April 2008): 19-22.

**Activity 3:** *How to Make Your Research IRB Exempt.* Groups of students read an assigned Research Inquiry Proposal, examining each for “explicit, implied, or missing ethical and safe research practices and whether such proposals should have explicit ethical and safe research practices listed in the proposal. Provide a rationale for why you believe the proposal should or should not explicitly state ethical and safe research practices” (2015 AP Research Student Workbook). [CR2a]

[CR2a] — Students develop an understanding of ethical research practices.

### **A First Look at the Bridge from AP Seminar to AP Research**

**Activity 1:** *Ring of Truth* (2015 AP Research Student Workbook). Students draw a circle on a piece of paper. Students then read statements about the AP Capstone program. Place the number of the statement in the center of the circle if the statement is true, and place the number of the statement outside of the circle if the statement is false.

**Activity 2:** Preliminary discussion of the added components of the Research course (PPT slide of bridge graphic) (Identifying the Gap, Developing Effective Research Question, Choosing an Aligned Method, Synthesizing New Knowledge)

**Activity 3:** Examine the color-coded Curriculum Framework chart of enduring understandings, learning objectives, and essential knowledge, noting the differences between the AP Seminar course and the AP Research course.

**Activity 4:** Preview selected PPT slides from the training, comparing the AP Seminar and AP Research course. Share with another student a rationale of what you think will be most challenging about the difference in components between Seminar and Research.

### **The Role of the Teacher and the Role of the Expert Advisor**

**Activity 1:** Students read about the roles of expert advisors and their participation as a panel member of the presentation and oral defense assessment (CED).

**Activity 2:** *Whose Line Is It?* (2015 AP Research Student Workbook). Students read five scenarios to determine what the teacher and expert advisor can and cannot do.

**Activity 3:** *Expert Advisor Toolkit* (2015 AP Research Student Workbook). Students brainstorm possible resources for eliciting an expert advisor and complete the graphic.

**Activity 4:** Students read *The Five Types of Expert Advisor/Scholar Interactions* and Rubric for Effective Expert Advisor/Scholar Relationships from the 2015 AP Research Student Workbook.

**Activity 5:** *Student Roles in Securing an Expert Advisor.* Students identify what they need to do and what they need to provide to expert advisors:

- Prepare questions for expert advisor (reference 2015 AP Research Student Workbook).
- Engage in a preliminary research of the expert advisor’s field to learn of the most noted scholars in the field.
- Issue form letter of invitation (to serve as an expert advisor and as a panel member of the presentation and oral defense assessment).
- Provide expert advisor with a timeline of both student and expert advisor responsibilities.
- Provide expert advisors with a timeline of student’s research before the presentation and oral defense.
- Record minutes of all meetings/correspondence and reflect on findings, insights, and conclusions in the PREP. [CR4a]

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

### Connecting the Course Assessment to QUEST

**Activity 1:** With your group, create a graphic that reflects divergent thinking and shows the purpose of the big ideas within QUEST and the connections between each big idea. Be prepared to show your graphic and provide an explanation for your design choices.

**Activity 2:** In groups, categorize the essential knowledge skills (on strips of paper) according to which big idea each belongs.

**Activity 3:** As a first glimpse into an AP Research course academic paper, students read the sample, entitled “Female Genital Mutilation in Canada,” and write one sentence describing what the researcher/author does. Students will then compare responses. Students then evaluate the paper as a high, medium, or low scoring paper, according to the rows 1, 3, and 5 of the rubric.

**Source:** Activity 3 from the 2015 AP Research Student Workbook

### Factors (and Possible Pitfalls) that Influence Research Effectiveness

**Activity 1:** *The Differences and Similarities among Definitions, Assumptions, and Hypotheses* (2015 AP Research Student Workbook). In this close reading activity, students consider their own self-bias and proclivity to make false assumptions by reading a brief story that lends itself to questioning because of its vague language.

**Activity 2:** Students read an excerpt from Stephen Brookfield’s “Critically Reflective Practice” that examines the role that our own assumptions play when conducting research. Students then respond to questions that examine the role of our own assumptions in choosing a research method, in defining specific words, and in ‘postulating’ a hypothesis. [CR1a]

**Source:** Brookfield, Stephen. “Critically Reflective Practice.” *Journal of Continuing Education in the Health Professions* 18, no. 4 (1998): 197-205.

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

**Activity 3:** *The Importance of Definitions in Research* (2015 AP Research Student Workbook). With a partner, students engage in a dialogue about the definitions of excellence and intelligence, utilizing the questions from the 2015 AP Research Student Workbook to ascertain differences in definitions of the terms from one person to another and how the discrepancies can affect one’s research. The activity will also expose the importance of defining certain words and when to do so.

### From RAVEN to PAARC

**Activity 1:** *The Credibility Test* (2015 AP Research Student Workbook). Students view the CNN interview with Jenny McCarthy about vaccines and autism and evaluate McCarthy’s credibility according to the PAARC Test. [CR1b]

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

**Activity 2:** Students then read Jeffrey Gerber and Paul Otis’s article, “Vaccines and Autism: A Tale of Shifting Hypotheses,” and evaluate its credibility according to the PAARC Test. [CR1b]

**Sources:** “Jenny McCarthy talks to CNN on how she cured her son’s Autism caused by VACCINATIONS!” YouTube video, 3:10. Uploaded on October 23, 2008.

Gerber, Jeffrey S., and Paul A. Otis. “Vaccines and Autism: A Tale of Shifting Hypotheses.” *Clinical Infectious Diseases* 48, no. 4 (2009): 456-461.

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

### Understanding Research Terms

**Activity 1:** Read the articles “Does irregular sun ‘heartbeat’ signal freeze?” and “The Really Big One” (and view the accompanying video for the first article) and answer the questions offered by AP Community contributor Serena F. Magrogan. The questions introduce students to essential components of the research course (a new understanding and its implications, research method, claim validity and limitations, necessity of peer review of the claim, research process and research product). [CR1a]

**Sources:** Fantz, Ashley. “Scientists: Sun’s Irregular ‘heartbeat’ could mean future freeze.” *CNN*, July 14, 2015.

Shultz, Katherine. “The Really Big One.” *New Yorker*, June 20, 2015.

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

### Citation Styles Appropriate for Discipline

**Activity 1:** Students view selected PPT slides concerning “Discipline-specific Styles for Academic Papers” compiled by Serena Magrogan of the AP Community. Students will note differences between and among the various documentation styles and the purpose of each.

### Methods Appropriate for Discipline

**Activity 1:** Students examine the conically-designed document, “Discipline-specific Formats for Academic Papers” and the Color Wheel of Disciplinary Understanding offered in training (2015 AP Research Student Workbook). Using the conically-designed document, each group will complete a Color Wheel of Disciplinary Understanding for an assigned specific discipline (e.g., arts, humanities, physical or natural sciences, mathematics, social sciences) and share the findings.

**Source:** “Dimensions of Disciplinary Understanding.” *Washington Center* at the Evergreen State College. Generated at October 2007 National Project Meeting.

### Preliminary Investigation of Possible Research Topics

#### SMARTER Research/Annotated Bibliography

**Activity 1:** Using the annotated bibliographies from the 2015 AP Research Student Workbook, students will evaluate each bibliography for alignment of sources according to the SMARTER acronym. Students will also recognize the efficacy of consulting other bibliographies to provide additional ideas and sources. [CR1b]

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

**Activity 2:** After viewing the teacher’s model of a practice annotated bibliography, use three sources from your Summer Reading Assignment to create a practice annotated bibliography (that you may or may not use later, depending on your topic selection), referencing the template found in the 2015 AP Research Student Workbook,



Graeff and Birkenstein’s *They Say, I Say* templates, and the resources in the 2015 AP Research Student Workbook to create an alignment of the sources according to the SMARTER acronym. Be sure to use an appropriate citation style for the field of study.

**Sources:** Graff, Gerald, and Cathy Birkenstein. *They Say, I Say: The Moves that Matter in Academic Writing*. 2nd ed. New York: W.W. Norton & Co., 2010.

Teacher model of a practice annotated bibliography of three sources on the same topic, all three corroborating each other while adding to the conversation differing perspectives on a specific consequence of the government shutdown of 2010 and its effect on the nation’s Head Start Program. [CR1c]

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

### **Finding the Gap (where you will divine your research question)**

**Activity 1:** *Engaging in Close Reading to Find the Gap*. Read the following two sources, both providing different reasons for the ineffectiveness of substance abuse prevention programs. Create an annotated bibliography, using Graeff and Birkenstein’s *They Say, I Say* templates and the template found in the 2015 AP Research Student Workbook to reveal a “gap” in the two sources’ findings, thus both aligning the sources as well as exposing an area that warrants further research. Be sure to choose the appropriate citation style associated with the field of study. [CR1a]

**Sources:** West, Steven L., and Ken K. O’Neal, Ph.D. “Project D.A.R.E. Outcome Effectiveness Revisited.” *American Journal of Public Health* 96, no. 6 (June 2004): 1027-1029.

Hammond, Augustine et al. “Do adolescents perceive police officers as credible instructors of substance abuse prevention programs?” *Health Education Research* 23, no. 4 (2008): 682-696.

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

### **Changing the Knowledge in the Field (as you research)**

**Activity:** View the informative slides and the graphic slides of the jigsaw puzzle pieces that symbolically explain the research process for finding the gap. As students research (gathering, coding, categorizing, and analyzing data), they look for a place in the scholarly conversation to situate a possible topic to further the research in the field (2015 AP Research Student Workbook PPT slides). [CR1a]

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

### **Preliminary Examination of Research Practices When Considering Topic of Study**

#### **Choosing a Research Approach to Find the Gap**

**Activity:** View and discuss the 2015 AP Research Student Workbook PPT slides to examine the differences in research approaches.

- Exploratory: Explore an event/thing/phenomenon and look for themes/variables/trends
- Explanatory: Connections between and patterns within phenomena/events/variables
- Creating: Create or design a solution to a problem

### Choosing a Research Design

**Activity:** View and discuss the 2015 AP Research Student Workbook PPT slides to examine the differences in research design (experimental vs. non-experimental).

### Choosing a Type of Research

**Activity:** Discuss the 2015 AP Research Student Workbook PPT slides to examine differences in research type.

- Primary Research (not to be confused with primary source; your research is the primary source): Involves collection of data through field research, trials, or experiments
- Secondary Research: Synthesizes existing research

### Choosing a Data Collection Research Method (Qualitative or Quantitative)

- Qualitative (case studies, observations, interviews, focus groups)
- Quantitative (surveys, lab experiments, questionnaires): Mixed or triangulation

**Activity:** View and discuss the 2015 AP Research Student Workbook PPT slides to examine the differences in research method.

### Data Collection Methods: Surveys

**Activity 1:** *Anticipating Problems with Conducting Surveys* (2015 AP Research Student Workbook). Students read and respond to “Conducting a Survey” and the table, “Matrix of Kinds of Questions Asked in Survey Research.”

**Activity 2:** Distinguishing between internal and external survey constructs, students respond to each of the following considerations when constructing a survey:

- Internal Construct Considerations. Establish purpose; question(s) selection (anticipate how others will interpret the questions); select a strategy (Survey Monkey, paper survey, oral response, Likert scale); pilot the survey (revise if necessary); and implement the survey
- External Construct Considerations. Validity: What generalizations can you validly make? Replication: Can others replicate the survey and get the same results? Member-checked: Are the answers to my question(s) congruent with my question(s) purpose?

**Activity 3:** Read Drew Desilver and Scott Keeter’s article “The Challenges of Polling When Fewer People are Available to be Polled,” examining the particular constructs involved. Also, consider problems regarding how Fox News used the five most recent polls before the first Republican debate for President to determine the ten candidates allowed to participate (thereby eliminating former Governor of Texas, Rick Perry).

**Sources:** Christensen, Larry B. et al. *Research Methods: Design and Analysis*, 12th ed. Boston: Pearson, 2014.

Leedy, Paul D., and Jeanne Ellis Ormrod. *Practical Research: Planning and Design*. 10th ed. Boston: Pearson, 2013.

Desilver, Drew, and Scott Keeter. “The challenges of polling when fewer people are available to be polled.” *The Pew Research Center*, July 21, 2015.

## Research Alignment

**Activity 1:** Students complete the Research Methods in a Nutshell table (2015 AP Research Student Workbook) as a tool to evaluate “the strength of alignment among the research questions, purpose, approach, design, and method.”

**Activity 2:** *Choose a Method* (2015 AP Research Student Workbook). Students first examine research questions and evaluate whether or not revision is warranted and revise each as necessary. Students then choose the research approach, design, and method that will best align with the focused research question. **[CR1a]**

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

## Defending Your Chosen Research Approach, Design, and Method

**Activity:** For fun, students first discuss “Scientists Get a Little Too Honest.” They then move the discussion into the more serious arena of defending one’s research in both the academic paper and the oral defense.

**Source:** “Scientists Get a Little Too Honest.” Picture gallery on Imgur.com.

## The Process and Reflection Portfolio (PREP)

**Activity 1:** Discuss the purposes of documenting all phases of research.

- Assures students’ continual progression throughout the research process
- Exposes particular challenges of the research process and poses solutions to those challenges
- Exposes strengths and weaknesses of students’ thought process and research skill
- Exposes whether or not students are examining and re-examining their area of inquiry
- Documents sources, alignment of sources and chosen research approach, design, and method; reflections of meetings with teacher, expert advisor, and peers
- Establishes goals for completing each stage of the research process
- Counts as multiple formative assessment grades

**Activity 2:** Share with students *Guiding Tasks/Questions for the PREP* from the 2015 AP Research Student Workbook.

**Activity 3:** Set up the PREP, (CED, pp. 45-46), to include the following components: **[CR4a]**

- Table of contents
- Research process/progress
- Setting and meeting personal research goals
- Developing a research question
- Preliminary research
- Inquiry proposal (completed and approved)
- Annotated bibliography/literature review
- Minutes/results of meetings with teacher and expert advisor
- Reflections on feedback from formative assessment from one-on-one conference with teacher (twice monthly and/or as needed to prod progress and evaluate research accuracy)
- Abstract (two paragraphs) of research for expert advisor
- Reflections on student’s own thought processes
- Strengths and weaknesses of argument development

- Peer-review findings
- Research question strength/weaknesses
- Inquiry proposal/poster
- Editing of academic paper
- Particular challenges and solutions
- List of resources (sources, photographs, spreadsheets, links to videos or other visual sources)
- Drafts of academic papers
- Preparatory notes for presentation and oral defense
- Attestation oath with student signature

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

## Unit 2 (Semester 1: Weeks 6–10): Beginning the Research Process

The AP student begins using the foundational information from Unit 1 to launch the research process. The student examines an array of resources and sources on individual topics of interest, narrowing the search for an area of inquiry. The students will also identify the type of expert advisor best suited to the student’s selected field of study and begin securing such expert advisor. Periodically conferring with the expert advisor and teacher, the student will divine a research question that is aligned with the chosen research approach, design, and method of data collection, culminating in an Inquiry Proposal Form submitted to the teacher for approval. [CR3]

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

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

### Formal and Informal Peer Review

**Activity:** What an Effective Peer Review is Not: Students view video “Writing Peer Review (Peer Critique) Top 10 Mistakes” just for fun as a review of peer-review expectations as experienced in the AP Seminar course.

**Source:** “Writing Peer Review (Peer Critique) Top 10 Mistakes.” YouTube video, 4:00. Uploaded November 14, 2009.

### More Preliminary Research in the Quest for a Sustainable Topic of Interest/Examining Components of Research Topics, Problem Statements, and Research Questions

**Activity 1:** Students approach two professionals/scholars (potential expert advisors) with questions about their master’s thesis and/or dissertation topic for examples of academic research topics. Students will evaluate those topics for focus, scope, value, and feasibility.

**Activity 2:** Students re-examine their summer reading assignment current events topics of choice for possible topic consideration. Students categorize the topics according to discipline and conduct further research, finding more peer-reviewed articles on one or more topics (students were required to find at least three peer-reviewed



articles, one for each of the three issues). Students practice finding articles that align in such a way as to expose “the gap,” through which students can situate a new area of inquiry and divine a research question.

**Activity 3:** *Transforming a Topic or Issue into a Problem Statement.* Students select a controversial issue from Payne and Gainey (2015 AP Research Student Workbook). They then examine one of the questions for its inherent variables (“time, place, people, texts, sources, events”) and revise as necessary. Students then read the excerpt about cyber bullying and write a problem statement based on the provided template found in the 2015 AP Research Student Workbook. Lastly, students offer their problem statements for peer review.

### Considering Arts-based Research?

**Activity 1:** *Transforming a Topic or Problem Statement into a Research Statement* (2015 AP Research Student Workbook). Students examine a student proposal for research in the humanities, glean a problem statement and research question, analyzing both according to the criteria found in the 2015 AP Research Student Workbook.

**Activity 2:** *Connecting the Arts to Research* (2015 AP Research Student Workbook). Students examine student concerns regarding specific arts-based research topics.

**Activity 3:** *Disconnecting the Arts from Research* (2015 AP Research Student Workbook). Students read assigned abstracts of arts-based research topics, glean the research question and the new understanding (the gap) the author hopes to bring to the scholarly conversation. Students then turn the research question back into a problem statement, from which the author could have formulated his or her research question.

**Activity 4:** Read the following sample models of arts-based academic papers:

- Gula, Andrew. “Implementation of a Ten-Tone Equal Temperament System: Music Technology-Sound Recording.” Proceedings of the National Conference On Undergraduate Research (NCUR) 2014 at University of Kentucky, Lexington, KY, April 3-5, 2014.
- Scluger, Alice. “Disordered Eating Attitudes and Behaviors in Female College Dance Students: Comparison of Modern Dance and Ballet Dance Majors.” *North American Journal of Psychology* 12, no. 1 (March 2010).

**Activity 5:** Students select a bibliography from one of the above mentioned arts-based research papers and locate in the academic paper where students have aligned three or more sources. Students then write a sentence that explains the alignment. Students also recognize the bibliography as a tool that can lead to additional related sources.

### Analyzing Research Questions

**Activity:** *Evaluating and Revising Research Questions* (2015 AP Research Student Workbook). Students analyze the strength of two research questions, revise as necessary, provide a rationale for the revision, and write an associated problem statement for each that students will offer for peer review.

### Launch the Initial Research of Potential Topic (The Authentic, Recursive Research Process Begins)

After selecting an area of inquiry, consider the appropriate discipline and citation style. Find the gap and situate the problem statement and subsequent research question within the gap to create a new piece of the academic puzzle via primary research or secondary research sources: Three to five foundational texts and 15 to 20 peer-reviewed articles/sources (once deciding on a solid topic). Once a topic is solidified, choose a distinct research approach, design, and method of data collection. [CR1a]



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

To locate sources, students will utilize the school library and online libraries to secure significant books. They will locate peer-review articles through EBSCOhost, JSTOR, and Gale Group; find reputable newspaper and professional journal articles and credible websites online, vetting all for particular bias.

Throughout this initial research phase, students consider what type of expert advisor best fits the area of inquiry, secure an expert advisor, engage in preliminary meetings with the expert advisor, and once secured for certain, extend the necessary letter of invitation that also provides the expert advisor with information about his/her expectations.

**PREP (entries made at least once weekly from this point forward to reflect on the research process and to catalog progress; checked twice monthly or more often if necessary) [CR4a]**

Reflect on the research process so far, noting the successes and challenges and solutions to those challenges (change of topic and why, revision of research question) as well as how the research contributes to the scholarly community. **[CR1f]**

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

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

**Begin Creating an Annotated Bibliography (will be used in the literature review component of the academic paper which will be composed of 1,000 words) and Record it in Your PREP [CR1b]**

Align three to five sources that expose the gap, following the components of the associated template. **[CR1c]**

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

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

**Writing a Research Question Situated Within the Gap**

Write a research question, analyze it, and offer it for peer review. **[CR1a]**

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

**Inquiry Proposal**

**Creating a Preliminary One-slide PowerPoint Presentation of Research Proposal [CR1d]**

In a videotaped elevator pitch, students present their preliminary research proposals for peer review and teacher assessment. **[CR1g]** Students will also showcase this preliminary proposal at Meet the Teacher Night in October. Reference the 2015 AP Research Student Workbook for PPT slide format. Components:

- Proposal title
- Problem statement (template found in the 2015 AP Research Student Workbook)
- Research question
- Definitions
- Assumptions/hypotheses

- Significance/importance of study
- Proposed method of inquiry
- Sources used

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

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

### **Components of the Formal Inquiry Proposal: LEADS (due mid-October)**

- Lays the Foundation for the Study
- Elucidates the Problem
- Analyzes Why Your Study is Appropriate
- Describes Why Your Study is Capable of Solving the Problem
- Shows Studies Similar to Yours

**Activity:** *Thumbs Up/Thumbs Down: Evaluating Inquiry Proposals* (2015 AP Research Student Workbook). Students read an array of model inquiry proposals, scrutinizing the strengths and weaknesses of each.

### **Refining Your Research to Meet the Criteria of the Formal Inquiry Proposal**

Reference the 2015 AP Research Student Workbook for the Inquiry Proposal Form

#### **Submitting Your Formal Inquiry Proposal Form**

1. Offer your inquiry proposal for peer review and revise as needed.
2. Submit your Inquiry Proposal Form to teacher for assessment for possible revision, and revise as needed.

[CR3]

3. Submit your final Inquiry Proposal Form to the teacher for final approval of your research topic, research question, and research approach, design, and method of collecting data. [CR1d]

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

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

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

### **Unit 3 (Semester 1: Weeks 11–16): Literature Review/Conducting the Research**

The AP student will research with intensity, focusing on alignment of method with sources, garnering three to five foundational texts, 15 to 20 peer-reviewed articles, and other highly credible sources. As the student researches an area of focused inquiry, he/she will create an annotated bibliography that will serve the basis of an aligned literature review, a component of the academic paper of about 1,000 words. As the student reviews the literature

in the field and new insights are gained, the student will revise the literature review by focusing on gathering data that addresses the gaps in information in the field of study, revising the research question if necessary. [CR1g]

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

### **Continue Locating Sources**

Students continue locating three to five foundational texts, 15 to 20 peer-reviewed articles, and other credible sources.

### **Literature Review (will be about 1,000 words of your academic paper)**

#### **Purpose of Literature Review**

- Aligns with topic, method, style
- Organizes/mines sources
- Makes connections between/among your sources
- Reveals new understanding/insights
- Reveals what is missing in your research
- Situates your issue for your introduction and background information
- Enables you to converse with the other scholars in the field

As students research, they keep an on-going annotated bibliography that aligns the sources to situate and build the argument of the academic paper. Part of the annotated bibliography will situate the argument by providing background information that leads students to their selected topic, filling a gap in and, therefore, contributing to the conversation of scholars. [CR1g]

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

#### **Writing the Literature Review**

Students use segments of the aligned annotated bibliography to provide background and situate the argument of the academic paper. [CR1d]

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

#### **Assessing the Literature Review (due mid-December)**

The teacher will assess the literature review for effort and completion only because the literature review is a component of the authentic academic paper.

### **Unit 4 (Semester 2: Weeks 17–30): Writing the Academic Paper [CR3]**

The AP student first revisits the academic paper rubric to gauge accuracy of the research process and then begins drafting the academic paper, incorporating the literature review to situate the area of inquiry and initiate the argument. The student continues intense research and completes any ancillary methods used to support the inquiry. Adhering to the chosen methodology, the student completes a rough draft of the academic paper, offers the paper to peer review, and engages in revision as necessary. To check for incidental plagiarism, the student



submits the academic paper to Turnitin.com and revises as needed and submits the final paper to the College Board Digital Portfolio for teacher assessment.

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

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

### About Writing the Academic Paper

**Activity 1:** *Research Academic Paper Task Description* (2015 AP Research Student Workbook). Students review the task description for the academic paper.

**Activity 2:** *Rubric for Academic Paper* (2015 AP Research Student Workbook). Students review the rubric for the academic paper, examining the rubric for the specific learning objectives on the rubric.

**Activity 3:** *Practice Scoring Sample Academic Papers* (2015 AP Research Student Workbook). Students read and practice scoring sample academic papers, according to rows 1, 3, and 5 of the rubric, and evaluate the assigned paper as high, medium, or low scoring.

### Writing the Rough Draft of the Academic Paper

Students situate the area of inquiry, utilizing the literature review to build the background information and initiate the argument for the new conversation. Students continue the intense research, following and writing about a specific methodology.

### Offering the Rough Draft of the Academic Paper to Peer Review

Students engage in a thorough close reading review of each other's academic papers. In this several-day experience, students will be mindful of new insights that may require major revisions as well as the minute details of critiquing language control and editing as needed. All students will engage in group editing of four to five academic papers, the group members addressing one paper at a time, simultaneously reviewing the paper via a Google Doc application. The teacher will take measures to ensure that no one student feels compelled to review more papers than any other student. **[CR1e]**

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

### Offering the Rough Draft of the Academic Paper to the Expert Advisor

Students engage the expert advisor in a review of the student's academic paper and its adherence to the chosen research method and its alignment to the research question. The student will then revise the paper again if necessary. **[CR1e]**

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



### **Submitting the Rough Draft of the Academic Paper to Turnitin.com**

Students will submit the rough draft of the academic paper to Turnitin.com to check for incidental (or blatant) plagiarism and revise the paper as needed.

### **Offering the Final Draft of the Academic Paper to Peer Review**

Students will offer the Academic Paper to peer review for possibly the last time and make any other necessary revisions. Students must be mindful that as they prepare the multimedia presentation, more challenges to their research may present themselves and, thus, may require additional revision and peer review. [CR1e]

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

### **Submitting the Final Draft to the College Board Digital Portfolio**

After providing the teacher with a hard copy of the academic paper, the student will submit the final academic paper.

## **Unit 5 (Semester 2: Week 25–May 31): Finalizing the Research**

The AP student will create a multimedia product to enhance the presentation of his/her academic paper and research methods. The student will also engage in individual and peer-reviewed practice sessions for both the presentation and the oral defense. After completion of course requirements, all students will share their academic papers and presentations, as well as their overall AP Research experience, with AP Seminar students. As final touches, students will showcase their work in our district’s annual AP Showcase, research other venues for possible submission or publication of their scholarly work, and submit the PREP in its entirety to the teacher in one last exit interview with the teacher. [CR5]

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

### **Review of Presentations**

**Activity 1:** *What an Effective Presentation is Not.* Students view/critique a YouTube presentation spoof, “Worst Presentation Ever.”

**Source:** “Worst Presentation Ever.” YouTube video, 3:40. Published on February 2, 2013.

**Activity 2:** Students discuss ways to communicate “with”, not “at” the audience.

**Activity 3:** Students view and assess an array of presentations, according to the rubric for presentation and oral defense (2015 AP Research Student Workbook).

**Activity 4:** Students examine effective presentation leads (anecdote, relevant short quote, thought-provoking question, powerful fact) and effective presentation closures (finish/loop back to opening anecdote, striking story to emphasize main point of research, relevant short quote, call to action).

### **Oral Defense [CR5]**

Students examine the following three types of oral defense questions that they will prepare to answer in front of panel members:

1. Research inquiry process/method (expert advisor’s question)
2. Depth of research



3. Reflection (from PREP)

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

**Designing, Planning, and Practicing the Presentation [CR5]**

Students review the effective components of multimedia presentations from the AP Seminar course. After designing the multimedia format, students prepare a script outline and practice delivering the speech via self-recording on phone, laptop, or tablet, and offer the practice recording to peer review.

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

**Oral Defense Practice**

In groups, students practice answering samples of all three types of oral defense questions.

**Multimedia Presentations and Oral Defense [CR5]**

The multimedia presentations and oral defenses begin in early April.

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