AP Computer Science Principles Assessment Overview for Students

The AP Computer Science Principles assessment is composed of two through-course performance assessment tasks and one end-of-course exam. All three assessments are summative and will be used to calculate a final AP score (using the 1–5 scale) for AP Computer Science Principles.

Component	Timing	Percentage of Total AP Score
Explore Performance Task	8 hours	16%
Create Performance Task	12 hours	24%
End-of-Course Exam	2 hours	60%

Students who are completing the AP Computer Science Principles course in a nontraditional classroom situation (e.g., online, homeschool, independent study) should consult a school-based AP Coordinator for instructions on taking the AP Exam and submitting work for the performance tasks.

Investigation and Citation

The through-course performance assessment requires you to create computational artifacts. One of these artifacts will be a program; the other artifact allows you to choose any computational media you wish to use. A computational artifact is a visualization, a graphic, a video, a program, or an audio recording that you create using the computer. In creating a computational artifact, you should avoid plagiarism by acknowledging, attributing, and/or citing sources and including a bibliography with your submission. Sources that should be cited include text, images, graphs, and program code that are used in the creation of your computational artifacts.

When completing the Explore – Impacts of Computing Innovations performance task, you will be expected to conduct investigations on a computing innovation. You must ensure you have identified relevant, credible, and easily accessible sources to support your creation of a computational artifact as well as to support your responses to the prompts. You can search for print or nonprint sources as part of your investigation. You can refer to a journal, Web page, or an expert that is being quoted as part of your written response. Avoid plagiarism by acknowledging, attributing, and/or citing sources throughout your responses.

AP Computer Science Principles Policy on Plagiarism

A student who fails to acknowledge (i.e., through citation, through attribution, by reference, and/or through acknowledgment in a bibliographic entry) the source or author of any and all information or evidence taken from the work of someone else will receive a score of 0 on that particular component of the performance assessment task.

To the best of their ability, teachers will ensure that students understand ethical use and acknowledgment of the ideas and work of others as well as the consequences of plagiarism. The student's individual voice should be clearly evident, and the ideas of others must be acknowledged, attributed, and/or cited.

Programming Language Requirements

AP Computer Science Principles is language agnostic. This means that there is no specific language requirement. When completing the Create – Applications from Ideas performance task for this course, you are allowed to select a language you feel is most appropriate to meet the requirements of the task. When selecting a language or program, you should review the requirements section of the performance task to ensure that your program will be sophisticated enough to implement mathematical and logical concepts, create abstractions, and implement algorithms.

Peer-to-Peer Collaboration

For the Create – Applications from Ideas performance task, you are encouraged to collaborate with another student in your class.

Students completing AP Computer Science Principles in a nontraditional classroom situation (e.g., online, homeschool, independent study) are encouraged to collaborate with another student peer.

Preparing for the Through-Course Assessment

The through-course assessment consists of two performance tasks. The following guidelines are meant to help you be successful on the performance tasks as well as to clarify or address any questions you may have regarding the process of completing these tasks.

Prior to your teacher administering the performance tasks, you should:

▸ obtain content knowledge and skills that will help you succeed on the performance tasks;

▸ practice either an entire task or components of the tasks;

▶ review the rubrics to understand how your work will be assessed;

▶ examine examples of performance task submissions at high, medium, and low levels, and to avoid potential plagiarism issues, consider carefully how you will cite these appropriately as you create your own computational artifacts for each performance task; if you choose a similar topic, your treatment of the topic must be unique;

▶ pay attention to the instructions concerning the size of the file to be uploaded;

▶ ensure you know the proper way to evaluate and appropriately cite a source, including program code; any program code which has not been written by you must be cited and credit given to the author;

▶ understand the level of detail expected in writing your responses;

▶ understand that you may not revise your work once you have completed the submission process of the official administration of the task; and

▶ be aware that the scoring process that occurs in the AP Reading may be different from the scoring process that occurs in your classroom; the AP score that you receive may be different than your classroom grade.

Preparing for the Explore – Impact of Computing Innovations Performance Task

Prior to your teacher administering this task, you should:

▶ obtain the meaning and purpose of creating a computational artifact; your creation could solve a problem, show creative expression, or provide the viewer with new insight or knowledge;

▶ understand that a computing innovation (i.e., an innovation that depends on computing or computing tools to define its functionality) that has a meaningful personal or community emphasis is an appropriate choice, as long as it fulfills the requirements to have an impact on society, economy, and culture;

▶ clearly identify beneficial and harmful effects of computing innovations;

▶ practice searching and evaluating sources relevant to computing innovations; all sources cited must be relevant, credible, and easily accessible;

▶ practice writing responses based on relevant and credible sources;

▶ practice appropriate citation of sources used in the creation of your computational artifact;

▶ have exposure to the use of a variety of computational tools that can be used to create effective artifacts; and

▶ understand which computational artifacts would be considered effective and ineffective.

   Effective artifacts include:

   › visual, graphical, and/or audio content to help a reader understand the purpose of a computing innovation; and

   › the use of communications media, such as animations, comic strips, infographics, and/or public service announcements, to illustrate the purpose of a computing innovation.

   Ineffective artifacts include:

   › artifacts that repeat information previously supplied in the written responses;

   › multislide presentations with paragraphs of text or bullets;

   › artifacts that have not been created by the student; and

   › artifacts that focus on advertising the computing innovation's functionality instead of the purpose of the innovation.

Preparing for the Create – Applications from Ideas Performance Task

Prior to your teacher administering this task, you should:

▶ ensure you know effective ways to collaborate; and

▶ obtain programming support as necessary while practicing the skills needed to complete the performance task.

Guidelines for Completing the Through-Course Assessment

The through-course assessment consists of two performance tasks.

You must:

▶ be aware of the task, timeline, components and scoring criteria.

It is recommended that you:

▶ follow a timeline and schedule for completing the performance task;

▶ seek clarification from your teacher or AP Coordinator pertaining to the task, timeline, components, and scoring criteria;

▶ seek clarification from your teacher or AP Coordinator regarding submission requirements;

▶ allow your own interests to drive your choice of computing innovation and program;

▶ as needed, seek assistance from your teacher or AP Coordinator in defining your focus and choice of topics;

- ▶ use relevant and credible sources to gather information about your computing innovation when completing the Explore performance task;

- ▶ seek assistance from your teacher resolve technical problems that impede work, such as a failing workstation or difficulty with access to networks, or help with saving files or making movie files;

- ▶ obtain assistance from your teacher or AP Coordinator with the formation of peer-to-peer collaboration when completing the Create performance task;

- ▶ seek assistance from your teacher or AP Coordinator in resolving collaboration issues where one partner is clearly and directly impeding the completion of the Create performance task; and

- ▶ seek guidance from your teacher or AP Coordinator to use and cite APIs or other pieces of open-source code. Program code not written by you can be used in programs as long as you are extending the project in some new way. You should provide citation and credit for programming code you did not write.

You may not:

- ▶ submit work that has been revised, amended, or corrected by another individual, with the exception of cited program code;

- ▶ submit work from a practice performance task as your official submission to the College Board to be scored by the AP Program; or

- ▶ seek assistance or feedback on answers to prompts.

Performance Task: Explore – Impact of Computing Innovations

Overview

Computing innovations impact our lives in ways that require considerable study and reflection for us to fully understand them. In this performance task, you will explore a computing innovation of your choice. Your close examination of this computing innovation will deepen your understanding of computer science principles.

Please note that once this performance task has been assigned as an assessment (rather than as practice), you are expected to complete the task with minimal assistance from anyone. For more clarification see the Guidelines for Completing the Through-Course Assessment section.

You will be provided with 8 hours of class time to develop, complete, and submit the following:

▸ **A computational artifact**

▸ **Written responses**

Scoring rubrics and instructions for submitting your performance tasks are available on the AP Computer Science Principles Course Home Page.

Note: Students in nontraditional classroom environments should consult a school-based AP Coordinator for submission instructions.

General Requirements

This performance task requires you to select and investigate a computational innovation that:

▸ has had or has the potential to have significant beneficial and harmful effects on society, economy, or culture;

▸ consumes, produces, and/or transforms data; and

▸ raises at least one data storage concern, data privacy concern, or data security concern.

You are also required to:

▸ investigate your computing innovation using a variety of sources (e.g., print, online, expert interviews);

- ► cite at least three sources that helped you create your computational artifact and/or formulate your written responses;

    - › At least two of the sources must be available online or in print; your third source may be either online, in print, or a personal interview with an expert on the computing innovation.

    - › At least two of the sources must have been created after the end of the previous academic year.

- ► produce a computational artifact that illustrates, represents, or explains the computing innovation's intended purpose, its function, or its effect; and

- ► provide written responses to questions about your computational artifact and computing innovation.

Submission Requirements

1. **Computational Artifact**

    Your computational artifact must provide an illustration, representation, or explanation of the computing innovation's intended purpose, its function, or its effect. The computational artifact must not simply repeat the information supplied in the written responses and should be primarily nontextual.

    Submit a video, audio, or PDF file. Use computing tools and techniques to create one original computational artifact (a visualization, a graphic, a video, a program, or an audio recording). **Acceptable multimedia file types include .mp3, .mp4, .wmv, .avi, .mov, .wav, .aif, or .pdf format. PDFs must not exceed three pages. Video or audio files must not exceed 1 minute in length and must not exceed 30MB in size.**

2. **Written Responses**

    Submit one PDF file in which you respond directly to each of the prompts below. **Clearly label your responses 2a–2e in order.** Your responses must provide evidence of the extensive knowledge you have developed about your chosen computing innovation and its impact(s). Write your responses so they would be understandable to someone who is not familiar with the computing innovation. Include citations, as applicable, within your written responses. **Your response to prompts 2a–2d combined must not exceed 700 words.** The references required in 2e are not included in the final word count.

    Computational Artifact

    2a. Provide information on your computing innovation and computational artifact.

    - ⬥ Name the computing innovation that is represented by your computational artifact.

    - ⬥ Describe the computing innovation's intended purpose and function.

    - ⬥ Describe how your computational artifact illustrates, represents, or explains the computing innovation's intended purpose, its function, or its effect.

    (*Approximately 100 words*)

2b. Describe your development process, explicitly identifying the computing tools and techniques you used to create your artifact. Your description must be detailed enough so that a person unfamiliar with those tools and techniques will understand your process. (*Approximately 100 words*)

Computing Innovation

2c. Explain at least one beneficial effect and at least one harmful effect the computing innovation has had, or has the potential to have, on society, economy, or culture. (*Approximately 250 words*)

2d. Using specific details, describe:

* the data your innovation uses;

* how the innovation consumes (as input), produces (as output), and/or transforms data; and

* at least one data storage concern, data privacy concern, or data security concern directly related to the computing innovation.

(*Approximately 250 words*)

References

2e. Provide a list of at least three online or print sources used to create your computational artifact and/or support your responses to the prompts provided in this performance task.

* At least two of the sources must have been created after the end of the previous academic year.

* For each online source, include the permanent URL. Identify the author, title, source, the date you retrieved the source, and, if possible, the date the reference was written or posted.

* For each print source, include the author, title of excerpt/article and magazine or book, page number(s), publisher, and date of publication.

* If you include an interview source, include the name of the person you interviewed, the date on which the interview occurred, and the person's position in the field.

* Include citations for the sources you used, and number each source accordingly.

* Each source must be relevant, credible, and easily accessed.