**AP CSP CodeX**

| **LESSON: Create PT PPR Code Segments Practice** | **Time: 45 minutes** |
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| **Project Goal:** Students will practice creating a PPR for the Create PT submission.**Learning Targets*** I can discuss the Create PT PPR.
* I can create image files of code segments.
* I can identify a list being created.
* I can identify a list being used.
* I can identify a function with a parameter, selection and iteration.
* I can identify a function call.
 | **Key Concepts*** The Personal Project Reference (or PPR) is composed of four code segments from the Create PT. The same code segment can be used more than once if it meets more than one requirement.
* The PPR will be printed by the AP coordinator for each student and distributed during the exam.
* You can request the PPRs be printed in color if it is beneficial to your students.
* The actual PPR code segments will be uploaded to the digital portfolio. Students should save their image files where they will be able to find and access them.
* The PPR must be completed independently, even if students work with partners. If two students submit the same code segments, that is okay as long as they did so independently.
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| **Assessment Opportunities*** Create PT PPR Code Segment Activity Guide
 | **Success Criteria*** Create an image file of a list being created
* Create an image file of a list being used
* Create an image file of a function with a parameter, selection and iteration
* Create an image file of a function call
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| **AP CSP Framework****AAP-1.D** Develop data abstraction using lists to store multiple elements.**AAP-2.N** Write expressions that use list indexing and list procedures.**AAP-3.A** Write statements to call procedures.**AAP-3.C** Develop procedural abstractions to manage complexity in a program by writing procedures. | **Materials*** Create PT PPR Code Segment Practice slides
* PPR Code Segment Activity Guide / Answers
* Access to the four PT Practice programs (solutions for each are available)
* AP CSP Student Handouts
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| **Teacher Notes*** This lesson will be completed on the computer, using CodeSpace to access programs.
* Use the Sandbox in CodeSpace for programming. This lesson is not part of a mission.
* The activity guide can be distributed digitally. Space is provided for students to take notes during the lesson.
* Students will use their PT Practice programs during this lesson. They should use their own code, but you can also give them code to practice with if needed.
* Follow the slides for instructions and guidance. Additional help is provided in the Teaching Guide below.
* This lesson has them practice the steps for the PPR with all four PT Practice programs. You can modify the assignment for fewer or more programs, or different programs.
* The activity guide does not have a specific wrap-up. You can look at student examples, do your own review, give an exit ticket, etc. as your own lesson wrap-up.
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**Teaching Guide**

**Warm-up (5 minutes)**

🧑‍🤝‍🧑 **Discuss** – Use a discussion strategy, like journaling, working at boards, selecting random students, or a form of think-pair-share. Hey, you can’t review this information too many times, right!?

* Slides 2-3
* Review the requirements for the Create Performance Task and digital portfolio submissions.

**Create PT PPR Code Segment Practice (40 minutes)**

💻 Students can work individually or with a collaborative partner.

**IMPORTANT!:** Students will refer to all four PT Practice programs from earlier lessons. They need to have them completed and accessible. Alternatively, you can give students the code from the earlier lessons.

The activity guide will be a substitute for the digital portfolio. All their image files will be uploaded or pasted into the document.

💡 **Teaching tip – Slides 4-6**

Overview of the PPR.

Emphasize: The PPR must be completed independently!

Emphasize: The image files cannot have ANY comments. Make sure they are removed from any code segments used in the PPR.

💡 **Teaching tip – Slides 7-14**

The slides go step-by-step in using the snipping tool to capture and save image files. If you are using a different method for image files, modify the slides as needed. If your students already know how to save image files, you can skip the step-by-step instructions and just have the students create the files.

The image files will be added to the activity guide.

💡 **Teaching tip – Slides 15-19**

Instructions with examples for the second, third and fourth image files.

💡 **Teaching tip – Slides 20-23**

The slides show the text used in the digital portfolio, with important information highlighted. Use the slides as needed.

💡 **Teaching tip – Slides 24-27**

Guided practice for creating image files for PT Practice 2. Examples of the image files are given, but not the step-by-step instructions.

💡 **Teaching tip – Slides 28-31**

Instructions for using PT Practice 3 and PT Practice 4 for more PPR practice. Students are encouraged to compare their image files with other students and have a short discussion. This is a good time to do it. They can give each other feedback during practice, but not during the actual Create Performance Task.

💡 **Teaching tip – Slides 32-35**

These slides review the PPR and give comments for each specific file. Then final comments about the PPR.

**Wrap-Up (5 minutes)**

If time permits, do your own lesson wrap-up. You could ask students if they have any questions, or ask them to write notes to themselves about things they want to remember concerning the PPR.

Formative Assessment:

* Daily reflection or journal entry
* Completed activity guide
* Class discussion
* Exit ticket