Teacher Pre-observation form and conference

1A. What student learning outcomes/objectives and CCS learning outcomes are the focuses of the lesson? Include what data informed this (these) outcome/objective(s).

Concept-2: Programmers incorporate iteration and selection into code as a way of providing instructions for the computer to process each of the many possible input values.
Learning Objective: CON-2.A: Represent branching logical processes by using conditional statements.
Essential Knowledge: CON-2.A.5 A multi-way selection is written when there are a series of conditions with different statements for each condition. Multi-way selection is performed using if-else-if statements such that exactly one section of code is executed based on the first condition that evaluates to true.

- **Students will practice if/else statements by demonstrating on worksheets and in code.**
- **Students will apply their knowledge of if/else statements to their previous 8-ball code and analyse why it is better.**

CCSS Standards:
CCSS.ELA-LITERACY.RST.11-12.3
Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.
CCSS.ELA-LITERACY.RST.11-12.4
Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.
This lesson is on Extended if statements, which is a specific topic covered on the AP CS A exam. This topic requires previous knowledge of boolean logic, if statements, else statements and of Java syntax. The students must be able to apply the knowledge to create extended if statements.

1B. Briefly describe the students in your class including those with special needs. How will you differentiate instruction for individuals or groups in your class to meet lesson objectives?

The students in my class are motivated to do well in computer science. They range from honor students, to students who have an interest in computer science but are not technically "honors" kids. There are no formal IEPs for the students in this class, but the students still vary widely in their learning styles and in the speed at which they pick things up.

I have a few students who pick up the concepts quickly, like K., D., A. and S.. I have other students who are extremely inquisitive in their learning styles, who ask a lot of questions to make sure they understand the concepts and all the edge cases. This includes D., Al. and Ar.. Finally, I have two students that are struggling a bit to pick up concepts, but don't readily speak up. This includes J. and R.. I am working actively to try to engage them more, both in lecture and in the free-work time of the class to ask them questions about their understanding and to encourage them to ask more questions. Both of them have paired themselves with a stronger student, who often helps through tough work.

I offer the materials to students in several ways. All materials are linked through Canvas. There are slides on the board that they can listen to and see. Students can follow along on their own devices, and some use the time to take notes. Students participate with the whiteboard markers on the table, and also on worksheets. Students are given guided practice on paper as well as programming assignments to reinforce the topic in different ways. Students also have access to a digital text which allows them to test out examples inside the book. Also, I link extra resources not gone over in class such as youtube videos and quizlets that the students can use on their own time to synthesize and differentiate their learning.
The students have naturally grouped themselves, and the groupings are mostly similar abilities, with students helping each other out. If this lesson differentiates students (and I believe it will), I often will have the students who understand well work one-on-one with the students who don't understand to help bring everyone to the same level.

1C. How does this lesson align within the current unit of study/across other units?

We have been learning about conditionals in the class. This lesson is in the logic behind longer more complicated boolean logic statements. Students will apply their knowledge of boolean variables, and conditional logic to understanding the current topic. It is a direct extension (literally) from if/ else statements.
In this unit, students will need to be able to understand and write these statements, and will get more in depth with complex conditionals inside the boolean expression block. if/else if/else statements will be seen throughout the rest of the class. For the exam, it is expected that students know these concepts extremely well, as they are used as a basis to test other concepts.

1D. What instructional materials, including technology, will you employ to meet the learning outcomes/objectives of this lesson?

I use a lot of materials and resources for this class.
- Almost every lesson (including this one) has a small slide deck that is placed on Canvas for students to view after class.
- Students do independent practice in class on the tables and on worksheets.
- Students do independent practice on Repl.it, our online IDE, which has a mini assignment each night
- Students have an e-textbook (runestone.academy) that they can run code inside of, as well as answer questions in the book.
- All of these materials are linked on Canvas. Additionally I link extra resources such as videos or websites about the topic so students who need extra explanation can view.

1E. How do your instructional strategies, including student grouping, promote higher levels of thinking and student engagement?

During the lesson, students will be given a marker so that they can write on the boards to try to solve the questions as I go through the lesson. Because students are active, they are more engaged when I reveal how to do the problem. Students are seated in small groups, and will often discuss and work together during this time which further increases their engagement. Finally, a large portion of the class is dedicated to practice, which allows students to practice their skills, further engaging them.

1F. How do you plan to assess student achievement? Include how your assessment(s) will be a tool for future instruction.

Students will be informally assessed through the lecture part of the lesson. This will inform the timing of the lecture, slowing down and explaining things if I feel there are misconceptions. Additionally, students will be surveyed as they are doing work in class to see who is understanding the topics and who is not. This will be used to try to tailor future lessons to help make sure all students understand. The homework is graded for completion, but the actual data is used for me to determine who needs more help and where.

Lesson Plan and Pre-observation Artifacts

Please upload Lesson Plan and Pre-observation Artifacts below.

Artifacts

Name	Upload Date	Upload User	File	
Digital Textbook	10/16/2019	DiFede, Kuri	3_4__AP_CS_Awesome___Multi_…	
Canvas Page	10/16/2019	DiFede, Kuri	3_4_Else_If__AP_Computer_Scien…	
Slides	10/16/2019	DiFede, Kuri	3_4_Extended_If_Statements.pdf	
Lesson Plan	10/16/2019	DiFede, Kuri	edit	
Exit Ticket	11/01/2019	DiFede, Kuri	Exit_Ticket.pdf	
Repl.it	10/16/2019	DiFede, Kuri	Screen_Shot_2019_10_16_at_8_3…	