

Description:

Students will engage in a class activity that looks rules and situations that are exceptions to rules in the classroom and at home. Students will be introduced to conditional statements (“if, then). Students will talk about how conditional statements are used in programming, and play a game that calls on them to apply their knowledge of conditional statements.

Objective:

- SWBAT identify conditional
- SWBAT create conditional statements.
- SWBAT write code using commands.
- SWBAT practice typing skills towards EOY speed of 20 WPM (*if time allows*)

Standards:

- CC Math Standards: OA.A.1 OA.B.4 OA.A.1 OA.B.2 MD.C.4 MD.A.1
- Anchor Standards: CCRA.R.1 CCRA.R.6 CCRA.R.7
- **PARCC / Smarter Balanced Assessment Skills**
 - Click / tap
 - Drag and drop
 - Select object

ISTE Standards (formerly NETS)

- 1.a - Apply existing knowledge to generate new ideas, products, or processes.
- 1.c - Use models and simulation to explore complex systems and issues.
- 4.b - Plan and manage activities to develop a solution or complete a project.
- 6.a - Understand and use technology systems.
- 6.c - Troubleshoot systems and applications.
- 6.d - Transfer current knowledge to learning of new technologies.

Materials:

- Computer, powerpoint

Vocabulary:

- *Rule:* A rule is a set of guidelines in a programming language that instruct a computer program to execute or perform certain operations.
- *Condition:* A condition is an exception to a rule, and is also known as a rule-breaker. A condition in program allows the program to perform different actions, depending on the condition being true or false.
- *Conditional Statement:* A conditional statement allows programmers to develop more dynamic programs by breaking rules. Conditional statements are “**If, then**” statements: **If** a condition is true, then do `_(x)_`.
- *Exception:* Excluded from a general statement, does not follow a rule.

Procedure

- T: A **rule** tells us what we need to do for everything to run properly. We have classroom rules to make our class run smoothly, can you think of one classroom rule and why we need to follow it?"
- T: "In programming, rules exist so that computers can run properly. A rule in programming is a set of guidelines that tell a computer what to do."
- T: "There are times that we don't have to follow rules, and these times are called **exceptions**. Can you think of a classroom rule that has exceptions, or times where it's okay to not follow the rule?" (bathroom emergencies, emergency drills, etc.)
- T: "These exceptions are called **conditions**. A condition in programming is similar; there are times when rules do not have to be followed for a program to work. These exceptions are part of a **conditional statement**, which tells the computer, 'if...then...' (example: If the fire alarm goes off, then we can leave the building without asking permission.)"
- T: "An example of a condition in programming that uses a conditional statement is when your computer asks you for a password. Think about how you log into computers, or different apps, programs and games. The computer is programmed to know that if you put in the same password that is stored in the computer, you can log in. The conditional statement for a password is: 'If the user puts a password in that matches the password stored in the computer, then the user can sign in and access what they need.'"
- T: "We started talking about conditions and the importance of conditional statements in programming. A **conditional statement** tells the computer, 'if...then...' and the computer will execute an action based on the condition. A conditional statement isn't just part of programming; we can make conditional statements that apply to real life."
- Give examples with blanks for students to fill in
 - **IF** it's raining out, **THEN** we will have recess inside.
 - **IF** it's a holiday, **THEN** we have a day off from school.
 - **IF** I don't eat my lunch, **THEN** I will be hungry.
- **T:** "In programming, an example that uses a conditional statement is when your computer asks you for a password to log in. Think about how you log into computers, or different apps, programs and games. The computer is programmed to know that if you put in the same password that is stored in the computer, you can log in. The conditional statement for a password is: 'If the user puts a password in that matches the password stored in the computer, **then** the user can sign into the program.'"
- **T:** "We know that conditional statements are "if, then" statements. Lets look at the rules of a game that practices conditional statements based on the rules of our game. Raise your hand if you have ever heard of or played the game, "Rock, Paper, Scissors?"
- T: "In this two-player game, each player uses their hands to represent one of the objects – a rock, paper, or scissors. You will count to three with your partner, and then show your symbol; either a rock, paper, or scissors."
- T: "The game works in conditional statements: **If** one player shows rock, and the other player shows paper, **then** paper wins (paper covers rock). **If** paper and scissors are chosen, **then** scissors win (scissors cut paper). **If** rock and scissors are selected, **then** rock wins (rock smashes scissors). **If** the players show the same object, **then** the game is a tie."

Check for Understanding/Essential Questions

- T: Ask the class each question. Give 30 seconds for students to think and then turn to share with their partner for 1 minute (Think, Pair, Share).

1. What is a condition?

2. Which of the following is a conditional statement?

- a) *I can only eat cake if it is my birthday.*
- b) *If it is my birthday, then I can eat cake.*

Independent work:

- Students follow directions to log into program
- Students work on completing levels based upon remaining class time and will finish up following class: Kodable 2.1-2.10
- Log into Edmodo to complete reflection
- If students finish 2.1-2.10 on Kodable they will work on typing games on abcya.com to practice typing skills towards EOY speed of 25 WPM

Assessment/Exit Ticket:

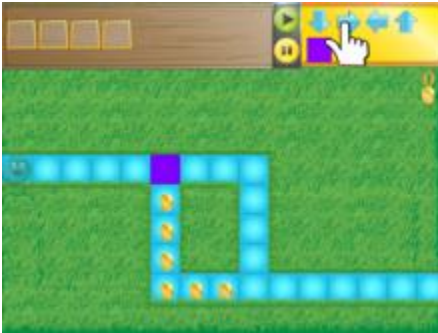
- Class will participate in wrap up exercise questions using a Quizizz (*this will be done before independent work*) that asks question from the lesson
- Class Progress reports via Kodable website will be used to judge completion and progression (see attached example from a student)
- Have students answer reflection question on Edmodo: Applying what you learned today and playing today's coding lesson - put into your own words what a conditional statement is.

Other:

- Visual aide with LCD (powerpoint/Word document)
- Each student must log into the computer which can factor the timing of the lesson for the class period.
- Typing practice happens only if time allows for it within this class period based upon the lesson's pacing, student logging in ,etc.

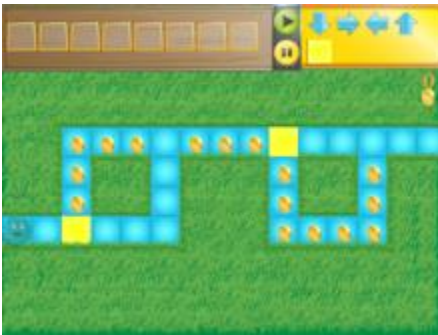
Example: Carl Harrison

Introduction to Conditions



Lesson 1

First Completed - Mar 23, 2016
Attempts - 1
Wins - 1



Lesson 2

First Completed - Mar 23, 2016
Attempts - 3
Wins - 1



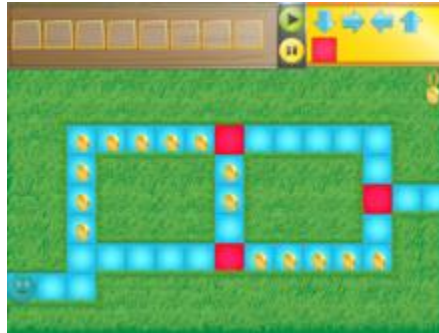
Lesson 3

First Completed - Mar 23, 2016
Attempts - 3
Wins - 1



Lesson 4

First Completed - Mar 23, 2016
Attempts - 1
Wins - 1



Lesson 5

First Completed - Mar 23, 2016
Attempts - 2
Wins - 1

Simple Conditions



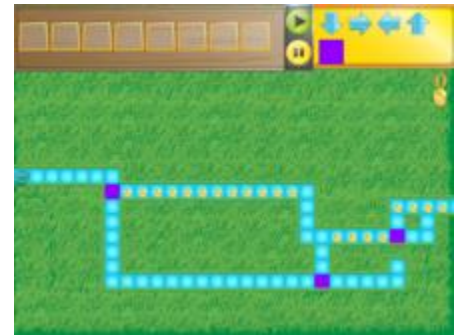
Lesson 1

First Completed - Mar 23, 2016
Attempts - 5
Wins - 1



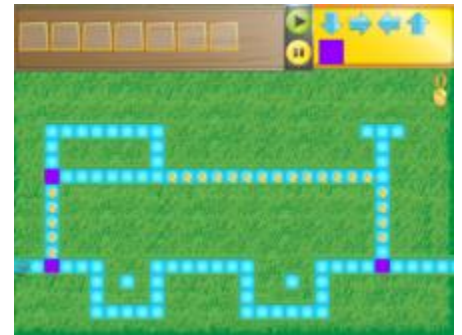
Lesson 2

First Completed - Mar 23, 2016
Attempts - 1
Wins - 1



Lesson 3

First Completed - Mar 23, 2016
Attempts - 1
Wins - 1



Lesson 4

First Completed - Mar 23, 2016
Attempts - 2
Wins - 1