

# Junior Coder

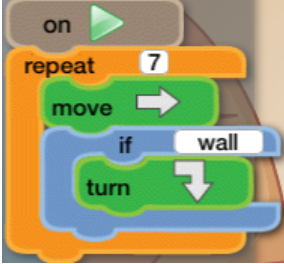
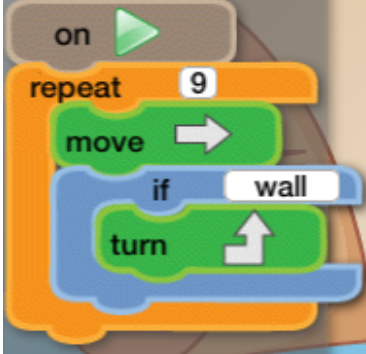
## Lesson plan - 6

Iffy Castle  
Conditional flow

# Lesson # 6 - Conditional flow

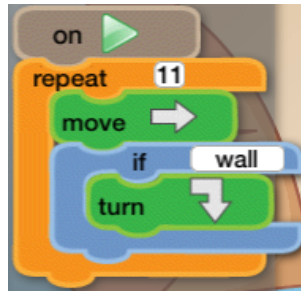
Time:	90-120 mins	
Objective:	Understanding the use of conditional logic.	
Learning	<p>What is conditional logic?          In computer programming conditional statements are instructions that are executed only when certain conditions are true. They are usually written as IF statements or IF ELSE statements or ELSE statement.</p>	
Computer Vocabulary:	<p><b>IF statement</b> - IF statement is executed when the if condition is true.  <b>ELSE IF statement</b> - If the previous conditional statements is not true then check this condition.  <b>ELSE statement</b> - If none of the above conditional statements are true then execute the instructions here.</p> <p><b>For example the conditional statement for traffic light can be written as</b>  <b>IF</b> traffic signal is red          stop the car.  <b>ELSE IF</b> traffic signal is green          drive the car.  <b>ELSE IF</b> traffic signal is yellow          slow down and stop the car  <b>ELSE</b>          drive with caution.</p> <p>Here the last else condition will be met only when traffic light is not working.</p>	
Materials required:	iPad with Junior Coder downloaded. Dice, black crayon or marker and activity sheet for unplugged activity.	
Common Core compliance:	CCSS.MATH.PRACTICE.MP1	Make sense of problems and persevere in solving them.
	CCSS.MATH.PRACTICE.MP2	Reason abstractly and quantitatively
	CCSS.MATH.PRACTICE.MP4	Model with mathematics.
	CCSS.MATH.PRACTICE.MP5	Use appropriate tools strategically.
	CCSS.MATH.PRACTICE.MP6	Attend to precision.

# Lesson # 6 - Conditional flow

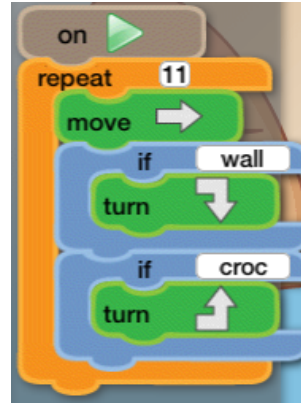
	CCSS.MATH.PRACTICE.MP7	Look for and make use of structure.
	CCSS.MATH.PRACTICE.MP8	Look for and express regularity in repeated reasoning.
Activity:	<p>Solve levels 1 to 5 in Iffy Castle. (Students can work in pairs.)</p> <p>Step 1 - Understand the problem.</p> <p>Step 2 - Recognize the repetitive patterns.</p> <p>Step 3 - Identify conditional patterns like when the knight hits a block on the road does he always turn in one direction, for example if there is a wall does he always need to turn left, if he hits a danger does he always turn right</p> <p>Step 4 - Use loop blocks and condition blocks based on the information you found in Step 2 and 3.</p> <p>Step 5 - Check your work and then run the steps in the instruction in your mind before you hit the green run button.</p>	
Creativity:	<p>Click on "Create your own" button. Students can create their own castle map. Place the stone blocks to create a path. Place the knight at the start of the path (one block before the track starts). Choose the knight's direction based on the first path block. Choose a golden key and place it at the end of the path, one block after the last path block. Place the crocodile or the snake or danger signs at the openings in the path.</p>	
Discussion:	<p>As a group discuss conditional logic. Let students come up with conditional logics from everyday life.</p> <p>For example if you eat your vegetables you can get a brownie else no dessert</p> <p>If you finish your homework you can watch TV else no TV.</p>	
Solutions:	<p>Level 1</p> 	<p>Level 2</p> 

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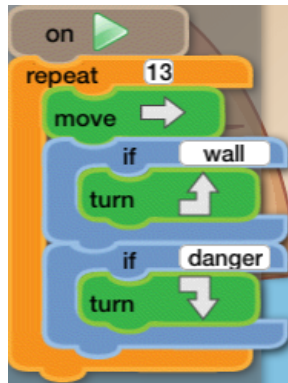
Level 3



Level 4



Level 5



Unplugged Activity

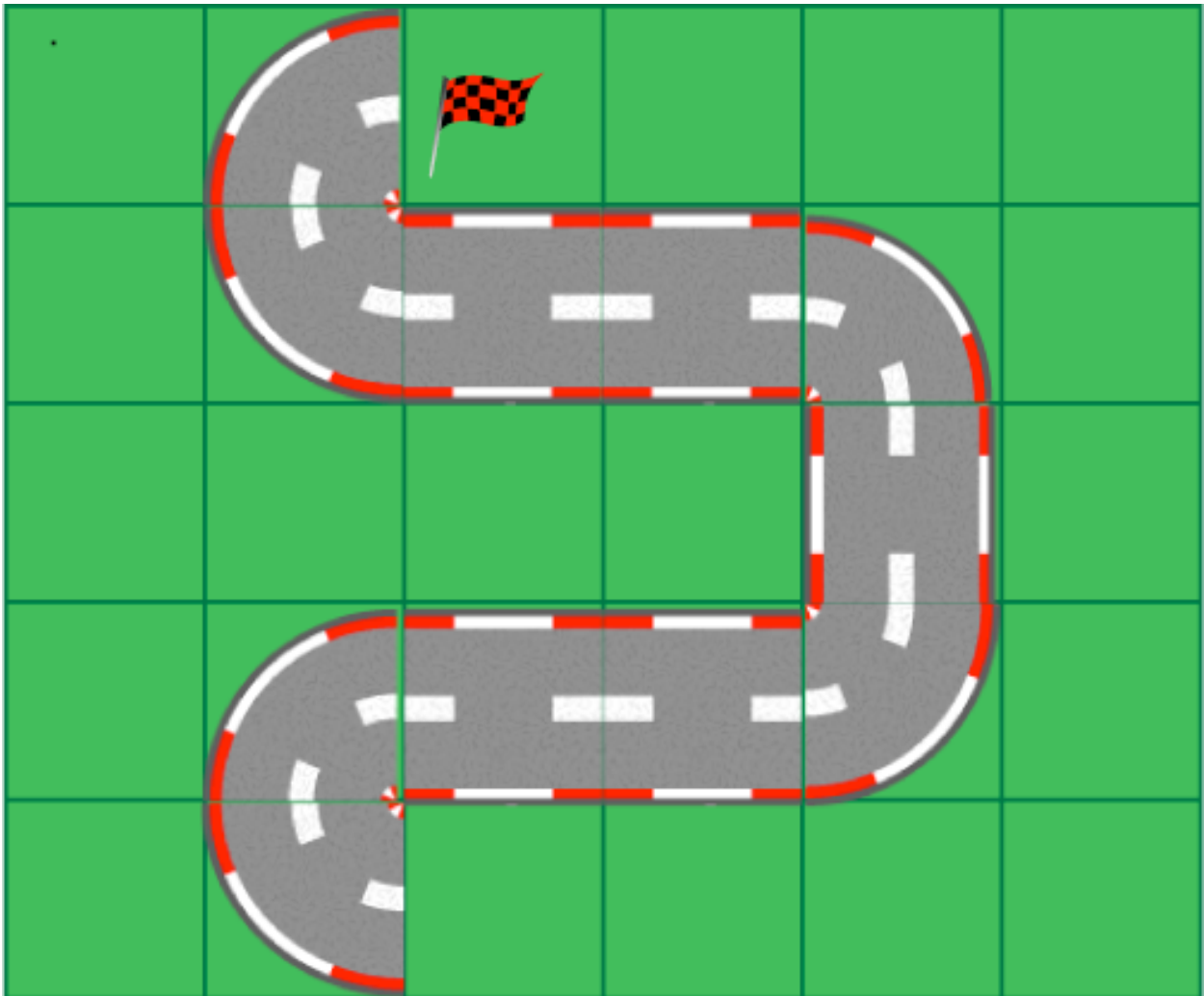
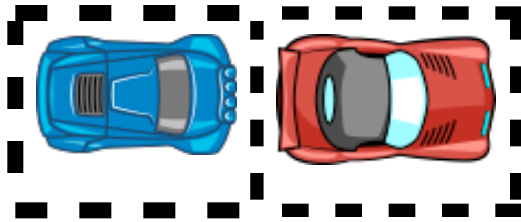
Hand out the activity sheet for Lesson #6.  
Let students follow the instruction and play the conditional games.

Unplugged activity discussion

Discuss how most board games use rules which are conditional.  
Let students come up with name of the games and discuss the rules. Examples of board games are chess, checkers.

# Activity # 1

Cut out the racing track and the 2 cars. Play the game in pair. Take turn rolling the dice. If the number is even move your car 2 steps forward and if the number is odd move your car one step back. See who can reach the finish line first.



# Activity #2

Take a black marker or crayon and use the below logic to color the square.

**IF** number is 10 or 12 or 23 or 27 or 31 or 32 or 33  
**THEN** color square black  
**ELSE** do nothing.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	31	32	33	41	42