LESSON_10_ While Loops + Conditions

OBJECTIVES

Students will be able to:

- Use While loops with one condition or more
- Visualize the execution of a While loop (frame by frame)

STANDARDS

- 7-8.CT.7, 7-8.CT.8, 7-8.CT.9

WARM-UP (REVIEW HOMEWORK)

Write a while loop that produces the following output:

1

2

4

8

```
count =1
while (count<9):
    print (count)
    count = count * 2
```

Sample Solution

LESSON DEVELOPMENT _WHILE Loops & Conditions (WHOLE GROUP)

Comparisons

Operators	Description	Example
==	Equal	5 == 5 → True 6 == 10 → False
!=	Not Equal	4 != 5 → True 7 != 3 + 4 → False
>	Greater Than,	3 > 1 → True 4 > 6 → False
>=	Greater Than or Equal To	7 >= 7 → True 10 >= 11 → False
<	Less Than,	31 < 50 → True 4 < 1 → False
<=	Less Than or Equal To	-7 <= -7 → True 10 <= 9 → False

More Than One Condition

Operators	Description	Examples

and	**TRUE** only when ALL conditions are "TRUE"	`5 > 3 and 4 < 5 → True`
		
		`2 > 1 and 3 < 1 → False`

or	**TRUE** when AT LEAST ONE condition is "TRUE"	`4 == 4 or 3 == 2 → True`

not	**TRUE** when "FALSE"	`Not 3 > 2 → False`
		`Not 10 < 20 → False`
		`Not 28 < 9 → True`

LIVE CODE _CODE ALONG

1. Write a program that asks the user to guess your magic number
2. The number should initially be set to 7
3. It keeps asking them for the number until they get it correct.
4. For the correct number it should say "Correct! You got it...."
5. And then it ends program
6.

[Let's visualize it]

Big Idea

- We can use While Loops with one or more conditions
- Visualize Execution (frame by frame)