School:		
Date:	**Teacher‘s name:**	
Grade:	**Number present:**	**absent:**
Topic of the lesson: While cycle, For		
Learning objective(s) that this lesson is contributing to	1) To familiarize students with the cycle with the precondition and teach how to use it when compiling programs in the Python programming language. 2) The development of mental activity, speech, algorithmic style of thinking.	
Lessonobjectives	Understand the construction of a WHILE loop or a precondition loop Use the WHILE construct to display a phrase a certain number of times Implement the Guess the Number and Buy the Elephant Games	
AssessmentCriteria	- Know the purpose and method of recording the WHILE loop - Able to apply the WHILE cycle to solve the task	
Valuelinks	Education of an emotionally positive orientation to practical activities, interest in computer science, personal responsibility for the results of their work.	
Previous learning	Data types, variable definition, logical expressions, conditional if statement of the Python programming language	
Cross curricular links	maths	

Time	**Planned activities**	**Resources**
Beginning _7_ min	Greeting students. Psychological attitude to the lesson. Checking and parsing homework Assigned at the last lesson homework: Write a program: 1) Given an integer. If it is positive, then multiply it by 3; otherwise, subtract 100 from it. Print the resulting number. 2) Determine whether the number is a divisor of the number b. 3) Determine the possibility of the existence of a triangle on the sides. (A triangle exists only when the sum of any two of its sides is greater than the third).	Presentation

Middle _24_min	1. Today we will study the construction of the “WHILE cycle” or “cycle with a precondition” and try to write the first games.
	WHILE - “bye” translated from English
	Let's look at an example of a WHILE loop:
	`n=0`
	`whilen<3:`
	`n=n+1`
	The WHILE loop means the following:
	While <condition> is fulfilled: do some actions.
	“As long as n is less than 3, add one to n”
	The cycle repeats until the condition is true; if not, the cycle ends.
	Tell me, what will be equal to n after the end of the loop? (Answer: 3)	

In order to see what happens in the body of the loop, create and run the following program:

n = 0

```
while n<5:
    n=n+1
print(n)
```

The program will output:

1

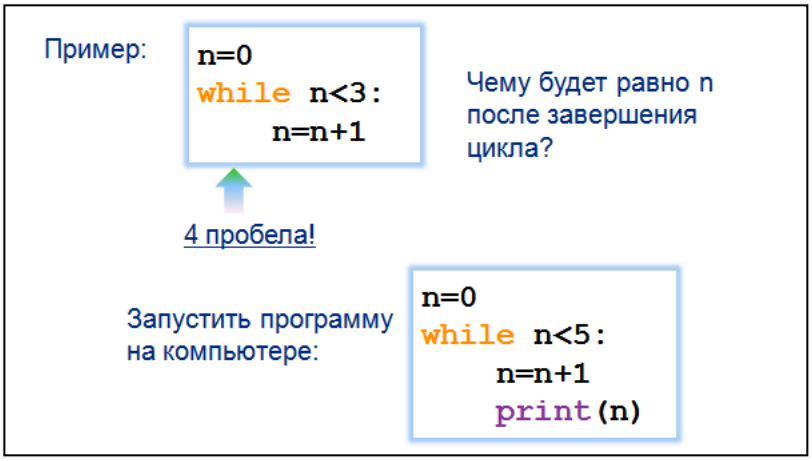
2

3

4

5

At the first step of the cycle n = 1, at the second n = 2 and so on. When n becomes equal to five and the program displays the number 5, the condition will be checked again. But the condition will not be fulfilled, since 5 <5 is not true. And the loop will exit.



2. Record in a notebook

Запись в тетрадь!

WHILE – «пока» в переводе с английского

Общая форма записи:

```
while <условие>:
    <действие 1>
    <действие 2>
    и т.д.
```

Пример:

```
n=0
while n<5:
    n=n+1
    print(n)
```

Endless cycle.

```
whileTrue:
print("The priest had a dog, he loved her.")
print("She ate a piece of meat, he killed her,")
print("Buried in the ground and wrote on stone:")
```

We write and run this program on a computer to see an endless loop in action.

Record in a notebook:

Endless cycle:

```
while True:
    <actions >
```

Бесконечный цикл

Пример:

```
while True:
    print("У попа была собака, он её любил.")
    print("Она съела кусок мяса, он её убил,")
    print("В землю закопал и на камне написал:")
```

Запустить эту программу на компьютере.
(Чтобы приостановить выполнение программы,
можно щёлкнуть по тексту правой кнопкой мыши).

Запись в тетрадь!

Бесконечный цикл:

```
while True:
    <действия>
```

Early exit from the cycle

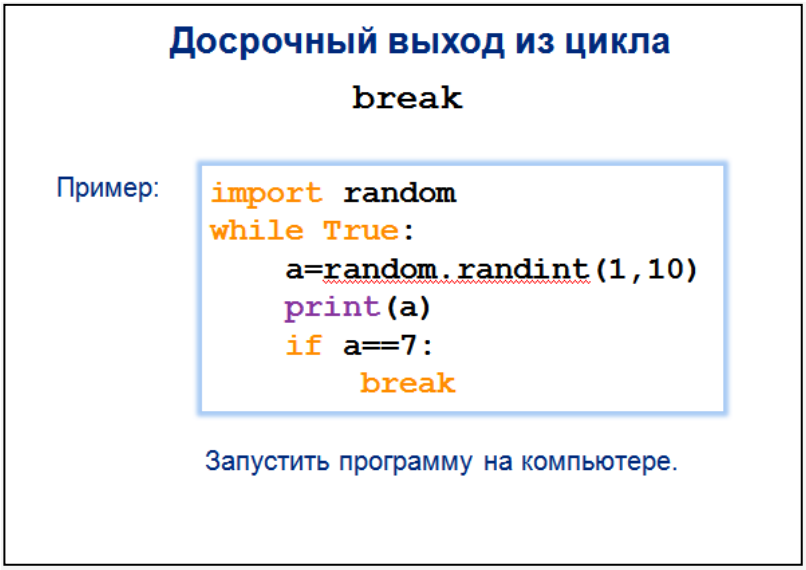
break

Example:

```
import random
while True:
    a=random.randint(1,10)
print(a)
ifa==7:
break
```

We write and run this program on the computer to see the break statement in action.

What is going on in the program?



3. Students write programs on computers under the guidance of a teacher.

Tasks:

1) Using a while loop print any phrase 7 times.

2) Write a program that receives two integers A and B (0 <A <B) and displays all natural numbers in the range from A to B.

3) Using an endless cycle, implement the game "Buy an elephant." The program should display the phrase “Buy an elephant!”, Receive a response from the user and output: “Everyone says“ the phrase entered by the user ”. And you buy an elephant! ”Then the program receives a new response from the user and so on ad infinitum.

4) Using the infinite loop and the break operator, implement the Guess the Number game. The program generates a random number in the range from 1 to 7 and tells the user: “Guess the number from 1 to 7!”. In an endless loop, the program reads the user's answers and prompts him with "more!" Or "less!", And if the answer is correct, the cycle ends and heart congratulations on the victory are

displayed.

5) Modify the program “Guess the number” so that it does not end, that is, so that after guessing one number, guessing the next starts. Increase the range from 7 to 15 and introduce a limit on the number of attempts (for example, 3 attempts). If the user fails for 3 attempts, output "GAMEOVER".

Задачи:

1) С помощью цикла while вывести любую фразу 7 раз.
2) Написать программу, которая получает два целых числа A и B (0 < A < B) и выводит все натуральные числа в интервале от A до B.
3) С помощью бесконечного цикла реализовать игру «Купи слона». Программа должна выводить фразу «Купи слона!», получать ответ пользователя и выводить: «Все говорят “фраза, введённая пользователем”. А ты купи слона!» Затем программа получает новый ответ от пользователя и так до бесконечности.

Задачи:

4) С помощью бесконечного цикла и оператора break реализовать игру «Угадай число». Программа генерирует случайное число в диапазоне от 1 до 7 и говорит пользователю: «Угадай число от 1 до 7!». В бесконечном цикле программа считывает ответы пользователя и подсказывает ему «больше!» или «меньше!», а в случае правильного ответа цикл завершается, и выводятся сердечные поздравления с победой.
5) Доработать программу «Угадай число» так, чтобы она не заканчивалась, то есть, чтобы после угадывания одного числа, начиналось угадывание следующего. Увеличить диапазон с 7 до 15 и ввести ограничение на количество попыток (например, 3 попытки). Если пользователь не справился за 3 попытки, вывести «GAME OVER».

Additional materials:

Guess the Number Option 1:

```
import random
   a=random.randint(1,7)
print("Guess the number from 1 to 7")
while True:
      b=int(input())
      if b==a:
         print("Right!")
         break
elif b<a:
```

	print("More!")
	else:
	print("less!")
	Guess the Number Program Option 2:import random
	while True:
	a=random.randint(1,15)
	print("Guess the number from 1 to 15")
	k=0
	while True:
	k=k+1
	if k>3:
	print("GAME OVER")
	break
	b=int(input())
	if b==a:
	print("Let others talk:")
	print("The main thing is participation.")
	print("Only victory gives us ")
	print("Pleasure, happiness!")
	print("Congratulations on your victory!")
	print("From the bottom of our hearts we wish you ")
	print("Without hints and embellishment ")
	print("Win 100 more times!")
	break
	elif b<a:
	print("More!")
	else:
	print("less!")	

End _9_ min	1. Students using stickers evaluate the mastery of the topic using the "Ladder of Success" method - I understood partially - Have questions - I understand everything 2. Homework - Write a program: 1) Using a while loop, output a repeating line from any song 25 times. 2) Write a program that receives two integers A and B (0 <A <B) and displays the squares of all natural numbers in the range from A to B. 3) Given an integer N (> 0). Using the operations of division completely and taking the remainder of the division, output all its numbers, starting with the rightmost one. 4) ** Write a program that would "flip" a conditional coin 100 times and report how many times the eagle has fallen, and how many - tails.	

Differentiation – how do you plan to give more support? How do you plan to challenge the more able learners?	**Assessment – how are you planning to check learners' learning?**	**Health and Safety**