LESSON PLAN

THE LESSON	
Title: **DEVELOPING LOGICAL SKILLS WITH THE HELP OF SUDOKU**	Date: 28th of March, 2018
Length of the Lesson: 30 minutes	Teacher: Mr. Wimmer
Reading and writing numbers from 1 to 10 (including 0), adding single digit numbers with totals to 10, determining strategies to be used, solving problems and observing rules.	

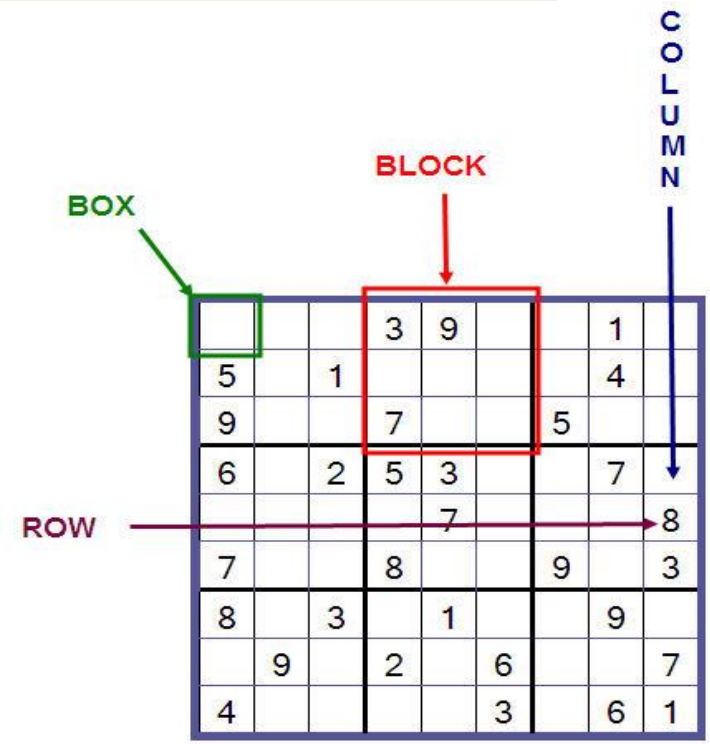
LESSON OBJECTIVES	TOOL: SYNOPSIS
At the end of this lesson, students will be able to order, write and compare numbers from 1 to 9. They should be able to combine 9 numbers between 1 and 9, to identify missing numbers or to eliminate double ones. That means one learns to observe and apply mathematical rules	Reading and writing numbers from 1 to 10 (including 0), adding single digit numbers with totals to 10, determining strategies to be used, solving problems and observing rules.
GAME	**MATERIALS**
Basic rules: in each grid, numbers from 1-9 must exist only one time. In each line, numbers from 1-9 must exist only one time. In each column, numbers from 1-9 must exist only one time. Duration of the game is unlimited. In competitions, the duration could be limited. This is why Sudoku can be a solitary game, as well as it can be played in competitions between two or more participants.	Each player needs its own sheet of 3 x 3 small fields with a total of 81 fields (from Internet, special magazines, newspapers etc). The number of the prefilled ones may be smaller (2 x 2 small fields of a total of 16 ones), adapted for the beginners level (children, pupils etc).The Sudoku sheet should be already prepared (prefilled with different number combinations), because not every number combination is possible.

OVERVIEW

This popular Japanese game is based on the logical placement of numbers.
French newspapers featured variations of the puzzles in the 19th century, and the puzzle has appeared since 1979 in puzzle books under the name Number Place.

However, the modern Sudoku only started to become mainstream in 1986 by the Japanese puzzle company Nikoli, under the name Sudoku, meaning "single number".

It first appeared in a US newspaper and then The Times (London) in 2004, from the efforts of Wayne Gould, who devised a computer program to rapidly produce distinct puzzles.

TIMELINE		NOTES (materials at each stage…. etc)	TIME
Warm up	Sudoku (数独 sūdoku, digit-single), originally called Number Place, is a logic-based, combinatorial number-placement puzzle. The objective is to fill a 9×9 grid with digits so that each column, each row, and each of the nine 3×3 subgrids that compose the grid (also called "boxes", "blocks", or "regions") contains all of the digits from 1 to 9. The puzzle setter provides a partially completed grid, which for a well-posed puzzle has a single solution.		
Present information	A standard Sudoku puzzle consists of a grid of 9 blocks. Each block contains 9 boxes arranged in 3 rows and 3 columns. Consider this example of an actual Sudoku puzzle:  		

· There is only one valid solution to each Sudoku puzzle. The only way the puzzle can be considered solved correctly is when all 81 boxes contain numbers and the other Sudoku rules have been followed.

· When you start a game of Sudoku, some blocks will be pre-filled for you. You cannot change these numbers in the course of the game.

·Each column must contain all of the numbers 1 through 9 and no two numbers in the same column of a Sudoku puzzle can be the same.

· Each row must contain all of the numbers 1 through 9 and no two numbers in the same row of a Sudoku puzzle can be the same.

· Each block must contain all of the numbers 1 through 9 and no two numbers in the same block of a Sudoku puzzle can be the same.

Sudoku Solution When the rules are applied, the solved Sudoku puzzle appears as shown:

2	4	8	3	9	5	7	1	6
5	7	1	6	2	8	3	4	9
9	3	6	7	4	1	5	8	2
6	8	2	5	3	9	1	7	4
3	5	9	1	7	4	6	2	8
7	1	4	8	6	2	9	5	3
8	6	3	4	1	7	2	9	5
1	9	5	2	8	6	4	3	7
4	2	7	9	5	3	8	6	1

Guided and freer practice	Start to play . At the beginning the teacher is a tutor and he will edit the worksheet together with the students. Afterwards the students have to play alone.		
Free practice	Each participant will get his own work sheet and fill his Sudoku field. When it is finished, the teacher will check the solution. In case of difficulties, the teacher may help the pupil(s). It is important that all students find the right combination of numbers from 1 to 9.		
Self-evaluation or Assignment	The teacher will assign a homework – to complete a full scale Sudoku sheet. The teacher will check all the sheets during the next lesson.		
Conclusion	The only way the game can be considered solved correctly is when all of the 81 boxes contain numbers and the other rules have have been followed.		