



ROULETTE

Age group	Secondary School, Grades 1 – 4	
Competency features	Proactive approach and creativity 	Ability to accept risk 
Aims	<ul style="list-style-type: none"> ▪ to get to grips with betting risks and their implications ▪ to evaluate risk ▪ using an example, to grasp the principles of combinatorics ▪ to boost the ability to handle tricky situations 	
Timing	ca 60 minutes (based on students' knowledge, ability to concentrate and cooperate; depending on teacher's goals, this exercise may be used repeatedly)	
Location	indoors	
Resources & materials	suitable room with a desk and roulette chips (see Worksheets) event record sheet (bets) IT equipment incl. data projector and interactive board (recommended) roulette (toy edition), or a container with numbers 0 - 36 betting list, possibly with odds quantity of chips as per the number of students and odds set (at least double the value of students' chips)	
Description		
<p>1) Teacher needs to be very well prepared. Based on the number of students, he creates roulette players accounts. There will be a large envelope with chips on every desk (single student or group of students). The classroom needs to be made ready well before start. Should the teacher have no access to a roulette set and playing table, he can use the desk design in the Worksheet; it should be blown up to A3 size at least, and the chips laminated.</p> <p>2) Roulette ranks high on the list of gambling favourites. There is the French version (37 numbers; to be used in this instance), and American (38 numbers, due to its double-zero feature). The game unfolds on the playing table where bets are placed. Roulette wheel has shallow slots around its circumference, with the full gamut of odd and even numbers, colour-coded black and red in strict alternation. The zero is displayed in green. When the wheel is spun, a small ball is thrown in that eventually will drop dead in one of the slot. For our purposes, it is necessary to create a semblance of the real thing, one way or another. A mock-up playing table may be projected on the interactive board, or paper copies printed out in necessary quantities. The roulette equipment may be replaced with a container</p>		

filled with red and black numbers, plus one green zero. Students will be given chips of different nominal values (let us use *Krugerrands* for illustration): 10 of 1 K; 5 of 2 K, and 3 of 5 K. Cardboard sheet (3 colours) may be used for chips manufacture.

- 3) Students will either act individually, or be assigned into working groups first, without knowing what it is all about. They take up their positions, and an administrator is elected, together with an assistant. He fulfils the role of *croupier*, overseeing the game and making sure everything follows the rules; it could be the teacher himself.
- 4) Teacher explains what is up: Each student and/or group will become competitive roulette players, initially with 35 K worth of chips at their disposal (10 of 1, 5 of 2, 3 of 5 K). Players are free to exercise their judgment while placing bets, and make changes as to stakes or their placing as long as the *croupier* allows. In case an interactive board is used, students report the placing of their chips, which is then recorded on the board (quantity, name, all properly marked) while the physical chips are handed over to the *croupier* (or his assistant). If a sheet is used to represent the playing table, chips are to be placed directly on it; watch out for inadvertently moving the chips by brushing over them, etc.
- 5) Once the *croupier* calls out "*Rien ne va plus!*", no further bets can be accepted and/or changes made. The winning number is drawn, duly announced and recorded on the board and/or sheet; with the latter, each round needs a fresh sheet. Losing chips are collected, while winners get their payoff. Further rounds follow. The aim is to maximize profits, minimize risks, and remain in the game as long as possible.
- 6) The drawn numbers are put back in the pool. It is suggested to play 15 – 30 rounds; at the end, the whole game is assessed. The game ends when no one has any more chips left and/or when a set number of rounds have been played. The winner will have the most "money" in hand, or it can be "the last man standing", i.e. someone with at least one chip left.
- 7) Prior to the exercise, teacher should go through ways of minimizing the risk (placing bets on colour only; odd and even numbers only, column, dozen, as opposed to high-risk bets and gambling on one number only).
- 8) Analysis, discussion, terminology (hazard, roulette, bet, win, probability of odds, etc.).

Feedback	<p><u>Questions for discussion:</u></p> <p>How did the students feel at the beginning of the game? How did their feelings develop later? What was their thinking, and did they think about the game? Who had misgivings and wanted to give up? Did they all have the same chance to win? What of the experience could be used in real life?</p>
Application in classes	development of financial awareness; civic education (basics of finance); math (probability of occurrence)

Worksheet

COLOUR CODING OF NUMBERS**0****1, 3, 5, 7, 9, 12, 14, 16, 18, 19, 21, 23, 25, 27, 30, 32, 34, 36****2, 4, 6, 8, 10, 11, 13, 15, 17, 20, 22, 24, 26, 28, 29, 31, 33, 35****BETS AND ODDS**

One number only (0, 1 36)	35:1
A pair (e.g., link between 1 and 2, or 6 and 9)	17:1
A foursome (e.g., crosslink between 5, 6, 8 and 9)	8:1
First/second/third dozen	2:1
Column	2:1
Even and odd numbers	1:1
Red or black	1:1
Small or big numbers (1-18; 19-36)	1:1

The win is based on the stake in a given ratio, so that 2:1 odds would mean winning double the stake. One chip staked, two chips won, three chips back to the player.

If zero is drawn, whoever placed his bet on it gains at the rate of 35:1; all other stakes are rolled over for the next round.

ROULETTE PLAYING TABLE

0							
big	1	2	3	small			
	4	5	6				
	7	8	9				
	10	11	12				
even	13	14	15	odd			
	16	17	18				
	19	20	21				
	22	23	24				
	25	26	27				
	28	29	30				
	31	32	33				
	34	35	36				
<table style="width: 100%; border: none;"> <tr> <td style="border: 1px solid black; padding: 10px; width: 33%; text-align: center;">1st dozen</td> <td style="border: 1px solid black; padding: 10px; width: 33%; text-align: center;">2nd dozen</td> <td style="border: 1px solid black; padding: 10px; width: 33%; text-align: center;">3rd dozen</td> </tr> </table>					1st dozen	2nd dozen	3rd dozen
1st dozen	2nd dozen	3rd dozen					

CHIPS

