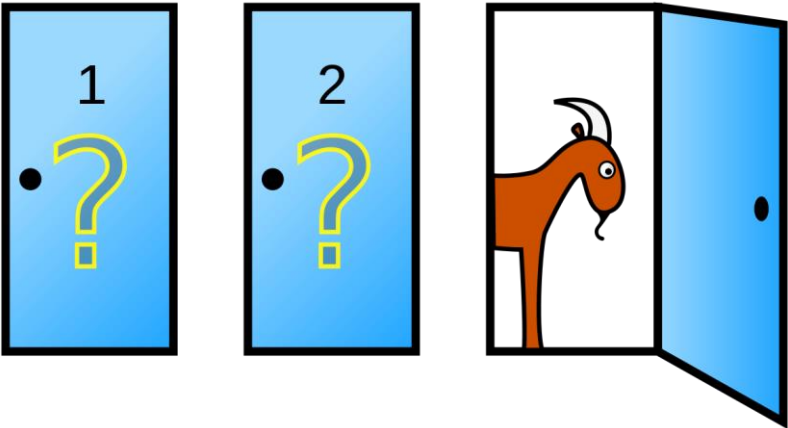


SCENARIO	
Title	Monty Hall Paradox
Summary	This scenario helps visualize and explain the "Monty Hall" problem.
Author/s	Pavel Mechovičius Date: 20/01/2020

Didactic objectives	
The purpose of the scenario is to explain the students of the "Monty Hall" paradox by visualizing and self-checking the rules of the paradox during practice.	
Physics <input type="checkbox"/>	Mathematics <input checked="" type="checkbox"/> Information Technology <input checked="" type="checkbox"/> Robotics <input type="checkbox"/> Programming <input checked="" type="checkbox"/>
Education Level:	10-12 years <input type="checkbox"/> 12-14 years <input checked="" type="checkbox"/>

Problem Statement	
<p>The Monty Hall problem is a brain teaser, in the form of a probability puzzle. With this task, we develop two skills, logical thinking, and probability calculus. The scenario is to help understand this problem through practical (not just theoretical) activities.</p> <p>Problem: Behind one door is a car, behind the others, goats. You pick a door, say No. 1, and the host, who knows what's behind the doors, opens another door, say No. 3, which has a goat. He then says to you, "Do you want to pick door No. 2?" Is it to your advantage to switch your choice?</p>	
	

BOM (Bill Of Materials needed)

Computer for each student, scratch, excel, development environment.

Activity description

The teacher explains the rules of the game. Together with the students, they discuss what strategies can be followed. Students are divided into 3 groups. Each group plays according to a specific strategy. After some time, each student says their winrate after “n” games. Statistical data fit into excel and are checked with theoretical ones.

Resources**Students' Evaluation**

The student understands why “change” is the best strategy and can justify it on the basis of probability

Bibliography**Scalability**

Write a program that simulates thousands of tries to prove the truth of the paradox.

More information

„InnoExperiment – Innovative Approach to Teaching through Experiment”

Project Leader: Zespół Szkolno – Przedszkolny w Goniądzu (ZSP)