Learning design for: Ozobots in the Classroom

Topic: The Game of Pig: Lesson in Probability, Statistics, and Computer Science

Grades: 6-12	Subject(s): Math, Computer Science	Pre-Reader/ESLFriendly? No
Compatible Bot(s): Evo	Coding Method: OzoBlockly	Duration: 50 min
Quick Summary: Students can simply have fun playing Pig or delve into probability, statistics, and computer science related to the game.		

Objectives & Outcomes

1 Student will have fun playing a game involving chance.

2 Student will develop strategies for winning the game of Pig.

3 Student will gain experience in computer programming using advanced/master level OzoBlockly.

4 Student will study the math behind probabilities of independent events.

5 Student will design a spreadsheet comparing theoretical and empirical probabilities.

Preparation

Teacher Materials & Digital Resources

https://stg-files.ozobot.com/lessons/undefined/The-Game-of-Pig.I7aVeyxbQHuPfEaWcVBYYwn6.pdf

https://stg-files.ozobot.com/lessons/undefined/The-Game-of-Pig-Ozomap.4mjV2LAyTRO5VSYb4qsf3QcQ.pdf

https://stg-files.ozobot.com/lessons/undefined/The-Game-of-Pig-Teacher-Guide.2gE2nI4JSpKWXT7D7Lzybwvz.pdf

https://stg-files.ozobot.com/lessons/undefined/The-Game-of-Pig.P0TVFvLqTOKWuNRipxWt4Ang.ozocode

https://stg-files.ozobot.com/lessons/undefined/coded.ZsCX7d8oQQxoi64Hq7mPSgia.gif

videos

https://youtu.be/9cpZ6A8LGtY

Student Materials

2 Evos per group

1 printed copy of the fle "The Game of Pig.pdf" per group

1 color printed copy of the fle "The Game of Pig Ozomap.pdf" per group
1 access to the OzoBlockly fle "The Game of Pig.ozocode" per group
 https://ozoblockly.com/editor

Teacher Tips

The ideal setup would be to have two students per group if possible, with each group having an Evo.

Direct Instruction

1 Read and study the 5-page document "The Game of Pig.pdf". Decide how you want to use the Game of Pig

lesson:

... Just for fun and a study of winning strategy (15-20 minutes)

... As a study in statistics and probability. (20-30 minutes)

... As a programming exercise in a computer science class. (40-50 minutes) (see a soluton in "Computer Science

Exercise.ozocode")

... Or as a some combinaton of the above.

The share code for "The Game of Pig.ozocode" is bt3n6f.

Supplements

Lesson Extension

1 Read and study the section of the document "The Game of Pig.pdf" entitled "Ozobot Game of Pig in a Statistics

and Probability Class." Design the requested spreadsheet, and then answer the eight questions regarding the

probabilities from the spreadsheet.

2 Read and study the section of the document "The Game of Pig.pdf" entitled "Ozobot Game of Pig in a Computer

Science Class."

Write the requested OzoBlockly program, and record statistics from Evo's recitation of counts into a spreadsheet.

Compute the cumulative chances from 1 through 50 rolls.

Additional Attachments

https://stg-files.ozobot.com/lessons/undefined/coded.ZsCX7d8oQQxoi64Hq7mPSgia.gif