

BACCALAURÉAT-Session 2017

Epreuve de Discipline Non Linguistique

Mathématiques/Anglais

Topic: functions

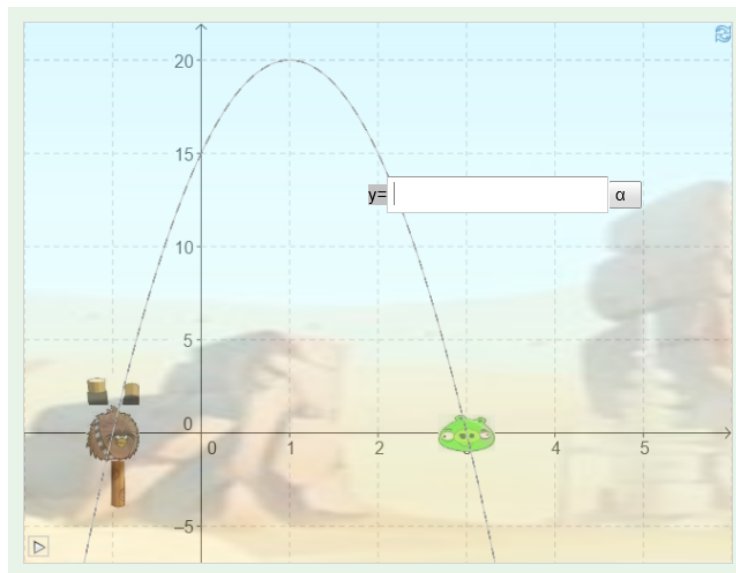
“Take aim and hit the pigs!”

You are the chosen one! Are you ready for Angry Birds Star Wars? In this game you will need to enter the “Pork Side”. Harness “The Force” and your supernatural powers to help Luke Skywalker and Chewbacca correctly aim their path and eliminate the evil pigs. You will quickly realise that space travel takes parabolic paths so any knowledge that you have gained about quadratic graphs will stand you in good stead. Take care, Young Jedi, to use “The Force” for good.

<http://www.teachmathematics.net/page/16049/angry-birds-1>

Questions

- 1) Make a short presentation of the text and picture.
- 2) This is a copy of the screen of a computer:



- a) Look at the screen and try to find the correct equation in order to follow the dotted path to hit the pig.
 - b) Let $y = -4x^2 + 16x + 20$ be an equation of another parabola. Where should the evil pig be if you want to eliminate it?
 - c) With this new equation, is the path of the ball still visible on the screen?
- 3) Can you think of other situations, objects, or natural shapes linked to a parabola?