A-Maze-ing Math

Brief Description:
This exhibit consists of maze(s) where one has to go from start to goal by following the path, but observing some additional rules in the journey.

Objectives:
Spatial reasoning and graph theory combine in this maze with a challenging twist. Activities include trying to solve the maze with multiple paths and finding the shortest route as well as determining whether the maze has any unnecessary segments for the solution.

Links to Websites:
http://mathmidway.org/Training/amazeing.php

http://www.falstad.com/maze/

Vocabulary:
Left turn   Maze
Right turn

Before:
⊙ (*Levels 1, 2, 3*) The A-Maze-ing Math exhibit is about navigating a maze with certain rules. Here's an online maze that is surprisingly difficult to navigate, because it's in 3D. There are many levels of difficulty to choose from. The applet generates different mazes each time, so students will not encounter the same mazes. http://www.falstad.com/maze/

⊙ (Have students draw an aerial view of the 3D maze they're trying to solve. Drawing the aerial view may help to solve the mazes.)

During:
⊙ (*Levels 1, 2, 3*) Solve the maze. Discuss the strategies that were used. Working backwards may help some students (solve the maze from finish to start, making no right turns). Ask them to think of a path that turns in one direction (ans. spiral). This may also help them find the solution.

After:
⊙ (*Levels 2, 3*) Design a maze that can be solved without using any left turns. Students may use graph paper or drawing software.

   Some additional mazes: http://www.clickmazes.com/