

## [Play with dSwitches!]

There are 25 switches on a  $5 \times 5$  grid. Each of the switches in a  $5 \times 5$  square grid can be in one of two states: on or off. Initially, all switches are on. If the player toggles a switch then that switch and each orthogonal neighbor switch will flip between the two states. Each toggle by a player constitutes one move and the objective of the puzzle is to turn all 25 switches 'off' with the smallest number of toggles.

- Try to solve the problem on a  $7 \times 7$  grid problem. What happens?
- Suppose all switches must be turned 'off' except for the central switch  $(3, 3)$ . Formulate the problem.