



## The Shannon Switching Game

### Rules of the game

This is a game for two players called *Join* and *Cut*. *Join* and *Cut* take turns to play.

On their turn, *Join* chooses a line and colours it with a marker pen. On their turn, *Cut* chooses a non-coloured line and deletes it by drawing a cross over it. *Join* cannot colour a line which *Cut* has crossed out, likewise *Cut* cannot cross out a line which *Join* has coloured.

***Join* wins if s/he manages to build a path between the two red points. Otherwise *Cut* wins.**

Now find a friend. Choose who will be *Join*. Choose who will be *Cut*. Choose who will make the first move, and then play.

Then switch roles and play again.

Do you think the game is fair? Do you think one of the two players would have an advantage?

Do you think making the first move matters?

#### NOTE:

- *Join* does not need to start at one of the red points. They can start wherever they like.
- *Join* does not need to go in order while colouring the lines, as long as they have a path by the end
- *Join* cannot draw new lines. They have to colour one of the lines on the diagram.