

Activity: Simplifying to Graphs



Rivers and Bridges

Print out these pages (single sided!) and cut so that each tile is separate. This activity requires participants to match the map of rivers and bridges (left) to the graph that represents this system (right) with vertices representing areas of land and edges representing bridges between them.

Before giving out this activity, participants should have the concept of simplifying problems like this to graphs explained:

“We can simplify these systems into one that we can answer questions about more easily by looking at them mathematically by drawing the system of rivers and bridges as a *graph*. By a *graph* we mean a diagram that shows all the important connections. We mark each area of land as a point (called a vertex) and each bridge as a line (called an edge) joining the two points that represent the land that bridge joins.”

This activity can be used as:

An icebreaker: (in even numbered groups of no more than 18): give each person in the group a different tile and then give the group 10 minutes to find the person with the matching tile.

An individual/group activity: Give all the tiles to the group/person and have them match up each map to its graph.

Once pairs have been matched, get groups or individuals to decide whether a path that crosses each bridge exactly once exists.





