

## The Craypots Problem

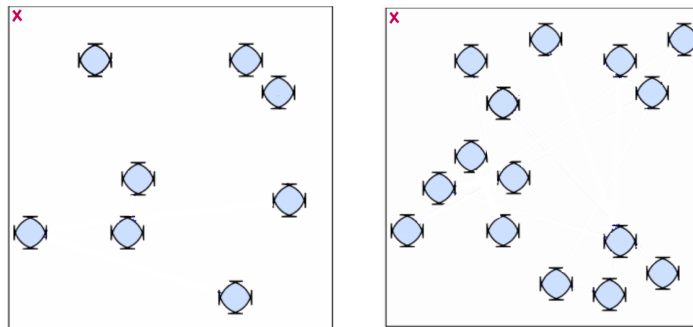
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Form groups of 2-3 students and work together on the following tasks.

There is a cray fisher who has around 18 craypots that have been laid out in open water. Each day the fisher uses a boat to go between the craypots and check each one for crayfish.

The cray fisher has started wondering what the shortest route to take to check all the craypots would be. Because every few weeks the craypots need to be moved around, the fisher would prefer a general way of solving the problem, rather than a solution to a single layout of craypots. So, he has asked you for your help!

Using your intuition, find the shortest path between the craypots on the maps shown in Figure 1a and 1b. The cross on the top left corner shows the boat dock, where the cray fisher stores the boat. Remind that we are not looking for a perfect answer or solution! So, don't spend more than 5 minutes on it!



(a) Map of 8 craypots

(b) Map of 15 craypots

Figure 1: Example maps of craypots

### Discussion ...

1. Why was this task very challenging?
2. Can you be sure you have an optimal solution?
3. Can you think of an algorithm to guarantee that you find the shortest route?