The Recirculating Aquarium

by Becca ‘26, Benson ‘27

You wanted to go to the aquarium, but it’s not quite ready. Instead, the designer gave you a map with both a flat sheet and a physical model.

He wants you to understand the aquarium from various perspectives and see how depth plays a big role partitioning the aquarium. Maybe taking a loop around the aquarium's twists and turns might lead you to what this hunt needs.

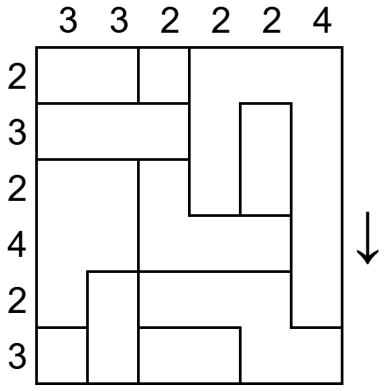
Aquarium

Shade some of the cells in each 6×6 grid such that the number in each row and column outside the grids correspond to the number of shaded cells in the respective rows and columns in the grid.

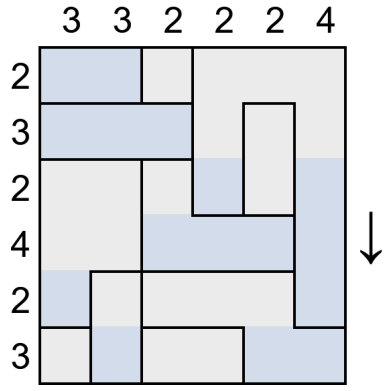
Additionally, each grid is partitioned into regions containing orthogonally adjacent cells, and each grid has an axis-aligned direction of gravity. Within each region, either the region is empty or all cells at or below a certain height in the region are shaded. An example is given.

You are to identify the regions in every grid using the map of the aquarium.

Example 6x6 grid

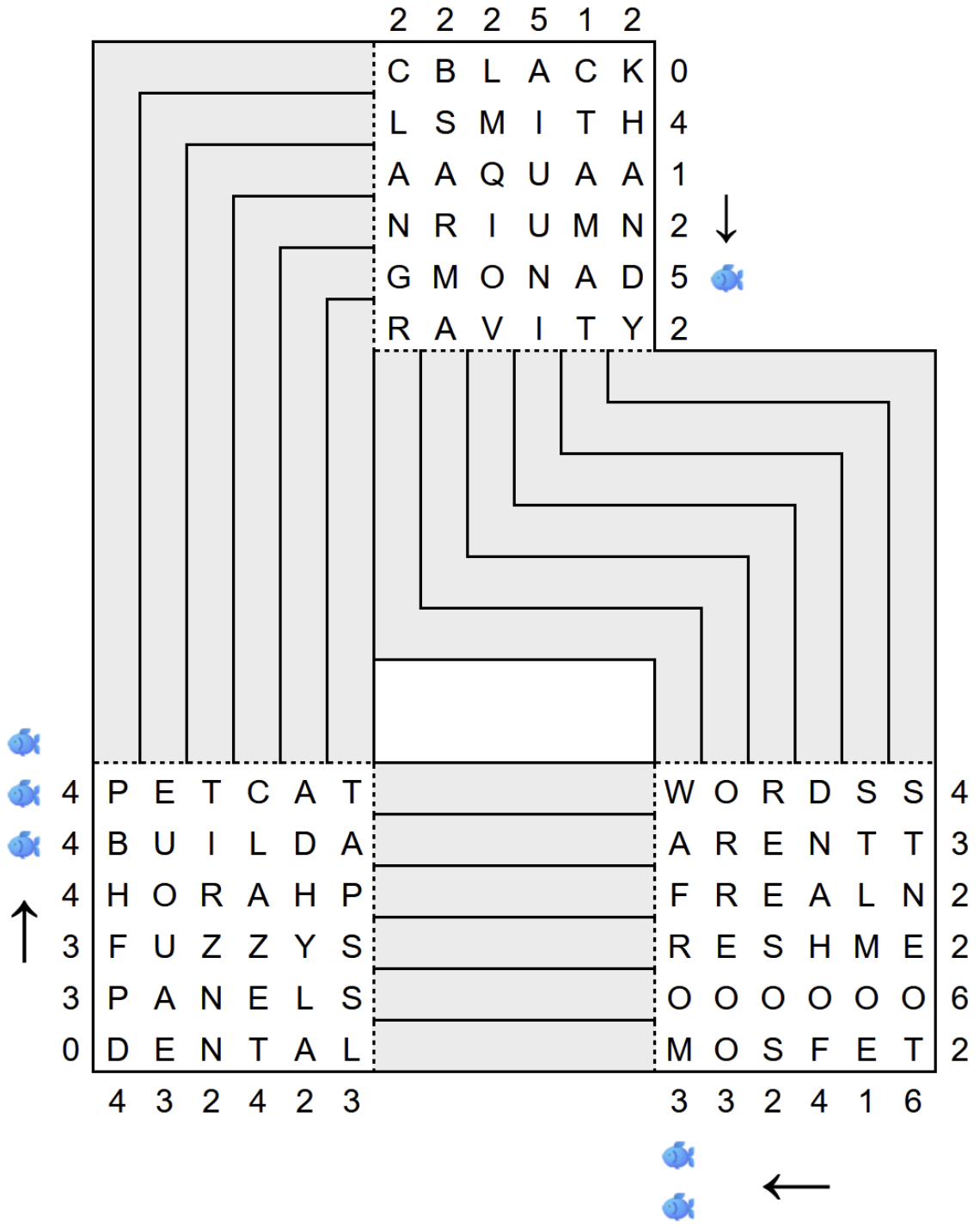


Solved 6x6 grid



The Recirculating Aquarium

by Becca ‘26, Benson ‘27



This puzzle came with a cube-like object, photographed below (annotations are added in color to make the shape and structure more apparent: