

Flow on Floorlandia: A Simple Hydrograph

1. You will now use the Floorlandia model to estimate how much water flows out of the central watershed over time after a simulated rainfall. This rainfall event will add one droplet to each cell in your grid and last just one time step (time 0).
2. Divide into pairs.
3. Use the “Expert” version of Floorlandia to calculate how many droplets will flow out of the watershed in 1, 2, 3, etc. time steps.
4. Fill out the table under question 1 in the Activity 4 Student Pages as you go along.
5. We will apply the rules that resulted in the blue arrows and make the assumption that droplets will move one arrow’s worth with each time step.

Hints:

- a. The number of steps away from the outlet each droplet (cell) is, will equal the number of time steps that droplet takes to leave the watershed according to the rules we’ve set.
 - b. To figure this out, count the number of arrows between each cell and the outlet.
 - c. Then, tally or add up how many droplets are each number of time steps from the outlet.
 - d. Since the watershed was dry at time zero (before the rain was added), make sure to include a time zero in your results.
 - e. Since the watershed empties completely according to our rules, make sure you include a final time step with zero droplets (the stream dries up!).
6. Complete the rest of the Activity 4 Student Pages (making a graph and commenting on the graph).