

Tumor Heterogeneity Simulation Activity

GROUP NUMBER:

GROUP RESISTANT COLORS:

Definitions:

- Beads = cells
- Beads in the bag = a tumor

Rules:

- 1) Take all of your cells out of your bag and put them into a cup on your table.

- 2) Count out five groups of cells with one pink, one orange, two yellow, two purple and three green beads. Leave these in five different cups on your table. These beads will grow your tumor

Pink	1 bead
orange	1 bead
yellow	2 beads
purple	2 beads
green	3 beads

- 3) Put ten beads of each color back in your bag to make your starting tumor.
- 4) Put any leftover beads aside; either in an unused cup or in the original bag.
- 5) Choose one person in your group to be chemotherapy, one person to be growth and one person to be resistance.
- 6) When the timer starts, your chemotherapy person will kill cells in the tumor by taking them out of the bag one-by-one and putting them on the table. These cells are dead so don't mix these cells with your growth cells.
- 7) Every 30 seconds, your growth person will grow the tumor by adding one cup of the cells you counted out earlier.
- 8) When three cells of your group's assigned colors have been killed (and are on the table) your resistance person will return two of those cells to the bag, to make cells with those mutations resistant to chemotherapy.
- 9) When the activity is over (after three minutes) count all the cells in your bag. Also count the number of cells of each color. Write those numbers on the whiteboard under your group's number.