



## Quorum Sensing Activity

Lydia E. Breen, Stoneham High School  
Jessica A. Forton, Melrose High School  
Amanda Tsoi, Somerville High School

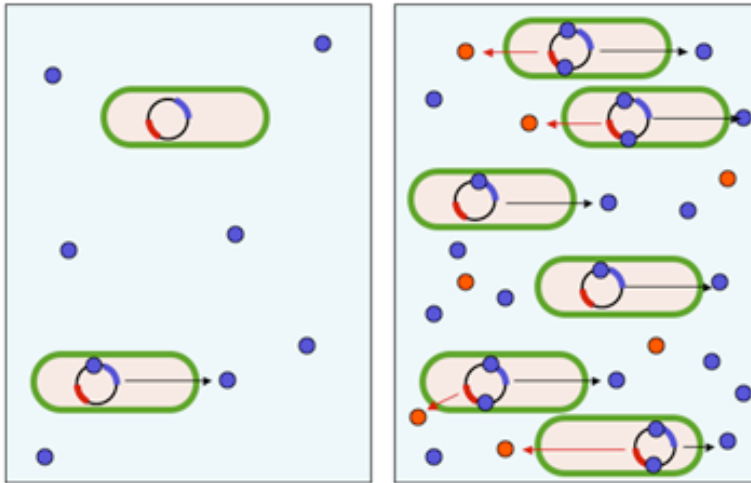
Just what is *QUORUM SENSING*?  
Think of it as a bacteria *FLASH MOB DANCE*.



<http://www.fairbanksballroom.org/wp-content/uploads/2011/06/flash-mob.jpg>

*“In its simplest form, quorum sensing refers to the ability of bacteria to communicate. It describes the capacity of certain bacteria to exhibit coordinated behavior in response to a particular population density. These bacteria usually rely on the production, accumulation, and subsequent response to diffusible signal molecules in order to sense population. These signal molecules accumulate in environments that can sustain a sufficiently dense population, or quorum, of the signal-producing bacteria. When the concentration of the signal molecule reaches a critical level, the quorum-sensing bacterial population responds through the concerted expression of specific target genes”*

<http://accessscience.com/search.aspx?rootID=796358>



[http://en.wikipedia.org/wiki/File:Quorum\\_sensing\\_diagram.png](http://en.wikipedia.org/wiki/File:Quorum_sensing_diagram.png)

**Activity:**

Start with 10 index cards and the students standing so they are in fairly close proximity. Each student receives a party favor noise maker with an attached message....

"Blow this only after you receive 5 pieces of any size paper."



Randomly pass the index cards to the students. When they receive the card they need to tear the card in half and pass one portion to another student and keep the other half. This process continues until the student receives 5 pieces of paper and only then can the student start blowing on the party favor.

\*\*\*The students continue to rip and pass paper even while blowing on the party favor.



Massachusetts Institute of Technology  
Departments of Biology  
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The activity continues until all of the students are making noise.

**Post-activity discussion:**

What did it take for the students to start blowing on the party favor?

What does the paper represent?

What does the blowout represent?

How does this exercise help explain QUORUM SENSING?

**AP Biology Classes**

Show the video:

1. [http://www.ted.com/talks/bonnie\\_bassler\\_on\\_how\\_bacteria\\_communicate.html](http://www.ted.com/talks/bonnie_bassler_on_how_bacteria_communicate.html)

Dr. Bonnie Bassler explains quorum sensing and the work done in her lab at Princeton University. (recommended)

2. [http://www.learner.org/courses/biology/archive/animations/hires/a\\_microb2\\_h.html](http://www.learner.org/courses/biology/archive/animations/hires/a_microb2_h.html)

Textbook archived animation about quorum sensing and biofilm