

# Creating Collaborative Classroom Ideas

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# Group work: labs

- Students work with a different lab partner every week
- Lab groups are assigned in a round-robin fashion
  - Student one stays put
  - Everyone else rotates around



# Round robin lab partners

| Lab 1      |       |
|------------|-------|
| Name       | Group |
| Student 1  | 1     |
| Student 2  | 2     |
| Student 3  | 3     |
| Student 4  | 4     |
| Student 5  | 5     |
| Student 6  | 6     |
| Student 7  | 7     |
| Student 8  | 8     |
| Student 9  | 9     |
| Student 10 | 10    |
| Student 11 | 10    |
| Student 12 | 9     |
| Student 13 | 8     |
| Student 14 | 7     |
| Student 15 | 6     |
| Student 16 | 5     |
| Student 17 | 4     |
| Student 18 | 3     |
| Student 19 | 2     |
| Student 20 | 1     |

| Lab 2      |       |
|------------|-------|
| Name       | Group |
| Student 1  | 1     |
| Student 2  | 3     |
| Student 3  | 4     |
| Student 4  | 5     |
| Student 5  | 6     |
| Student 6  | 7     |
| Student 7  | 8     |
| Student 8  | 9     |
| Student 9  | 10    |
| Student 10 | 10    |
| Student 11 | 9     |
| Student 12 | 8     |
| Student 13 | 7     |
| Student 14 | 6     |
| Student 15 | 5     |
| Student 16 | 4     |
| Student 17 | 3     |
| Student 18 | 2     |
| Student 19 | 1     |
| Student 20 | 2     |

| Lab 3      |       |
|------------|-------|
| Name       | Group |
| Student 1  | 1     |
| Student 2  | 4     |
| Student 3  | 5     |
| Student 4  | 6     |
| Student 5  | 7     |
| Student 6  | 8     |
| Student 7  | 9     |
| Student 8  | 10    |
| Student 9  | 10    |
| Student 10 | 9     |
| Student 11 | 8     |
| Student 12 | 7     |
| Student 13 | 6     |
| Student 14 | 5     |
| Student 15 | 4     |
| Student 16 | 3     |
| Student 17 | 2     |
| Student 18 | 1     |
| Student 19 | 2     |
| Student 20 | 3     |

| Lab 4      |       |
|------------|-------|
| Name       | Group |
| Student 1  | 1     |
| Student 2  | 5     |
| Student 3  | 6     |
| Student 4  | 7     |
| Student 5  | 8     |
| Student 6  | 9     |
| Student 7  | 10    |
| Student 8  | 10    |
| Student 9  | 9     |
| Student 10 | 8     |
| Student 11 | 7     |
| Student 12 | 6     |
| Student 13 | 5     |
| Student 14 | 4     |
| Student 15 | 3     |
| Student 16 | 2     |
| Student 17 | 1     |
| Student 18 | 2     |
| Student 19 | 3     |
| Student 20 | 4     |



# Pleasant lab environment 🎵

- The presence of an instructor is important
- I like to play background music



# Peer evaluations

- I used to require students to complete a peer evaluation form as part of their lab score
- Students would receive their feedback in anonymized form at midterm and again at the conclusion of the semester



# Group work: classroom

- Seat inertia is a real thing!
- Don't let students select their own groups!
- Use cards to group students together
  - Shuffle the cards
  - Distribute
  - Randomly select one of the three items
  - Students have to find the person with the matching symbol



# Group work: projects

- Group projects have weighted scores based on student feedback
- Students divvy up 100 points to each member of the group and must justify their answer
- Group work is multiplied by each weighted score



# Weighted group work score example

|    | A | B                    | C           | D        | E        | F        | G                           | H                 | I                           | J    |
|----|---|----------------------|-------------|----------|----------|----------|-----------------------------|-------------------|-----------------------------|------|
| 1  |   |                      |             |          |          |          |                             |                   |                             |      |
| 2  |   | <b>Score from...</b> |             |          |          |          |                             |                   |                             |      |
| 3  |   | <b>Given to...</b>   | <b>A</b>    | <b>B</b> | <b>C</b> | <b>D</b> | min(sum of scores,1)        | raw project score | weighted project score      |      |
| 4  |   |                      | A           | 0.25     | 0.25     | 0.30     | 0.23                        | 1.00              | 80                          | 80   |
| 5  |   |                      | B           | 0.20     | 0.23     | 0.25     | 0.25                        | 0.93              | 80                          | 74.7 |
| 6  |   |                      | C           | 0.30     | 0.25     | 0.30     | 0.30                        | 1.00              | 80                          | 80   |
| 7  |   |                      | D           | 0.25     | 0.27     | 0.15     | 0.22                        | 0.88              | 80                          | 70.7 |
| 8  |   |                      |             |          |          |          |                             |                   |                             |      |
| 9  |   |                      | each column |          |          |          | this value                  |                   | this value is the           |      |
| 10 |   |                      | should sum  |          |          |          | cannot exceed 1             |                   | effort score *              |      |
| 11 |   |                      | to 1        |          |          |          |                             |                   | raw project score           |      |
| 12 |   |                      |             |          |          |          | <b>Excel:</b>               |                   | <b>Excel:</b>               |      |
| 13 |   |                      |             |          |          |          | <b>=MIN(SUM(C4:G4),1)</b>   |                   | <b>=G4*H4</b>               |      |
| 14 |   |                      |             |          |          |          | <b>do this for each row</b> |                   | <b>do this for each row</b> |      |
| 15 |   |                      |             |          |          |          |                             |                   |                             |      |





# Group work: observed outcomes 📱

- Students will be texting each other within a few weeks of class starting
- Students form study groups
- Students work together in the library
- Students go to tutoring sessions together



Thanks!  
Any questions?

