Math 8001: Groupwork

October 4, 2013
Any current issues in your own teaching?
Why Groupwork?

Not everybody shares the view that lectures have been effective for thousands of years.

Others suggest that students take notes on / assimilate just 20-40% of a lecture. (Kiewra, 2002.)
Definitions

Constructive Learning ≠ Groupwork.

- **Constructivism**: A broad educational theory that students’ learning builds (constructs) on prior knowledge. Since we don’t know what’s in their head, learning will be more effective when students are actively engaged.

- **Groupwork, Guided Discovery**, etc., are teaching methods which attempt to engage the students.
Our Backgrounds

Illinois, Michigan, Michigan Tech, UMTYMP, IT/CSE Calculus.
Groupwork is not a cure-all!

Using groupwork doesn’t automatically improve your class.

Instructor buy-in is vital.
Guidelines for Groupwork

(See handout)

- Don’t be afraid to let groups struggle and make mistakes.
- Physically be a group.
More Guidelines

- Have groups write their answers on the board from time to time. (Or work at the board the entire time.)

- How should you form your groups? There’s no optimal answer!
  - Don’t isolate.
  - What can you do with the fastest and slowest groups?
  - Actively rearrange groups.
Groupwork in Different Settings

- Know the parameters: your style, your students’ style, course guidelines.

- **Dedicated workshops**: the entire time is spent on group work, and that’s what the students signed for.

- **Traditional setting**: group work can be incorporated into almost any class style.
Designing Worksheets

- What’s the goal? Basic computational practice? Deeper thinking?

- How does this build on the students’ background?

- Make the groupwork genuine and versatile.

- What’s the punchline?
Your assignment

Pick a section covered in your class next week (modulo special circumstances). Develop two groupworks: one which focuses on computations, and one which is more conceptual.

(I’ll post our UMTYMP groupwork template if you’d like to use \LaTeX.)