Lesson 26... in which we learn how geometry affects analysis of internal and external flow heat transfer and how orientation of heat sinks affects natural convection.

**Before Class**
At end of previous class, students write on an index card what geometry effects they think will need to be considered for 1) external flow, 2) internal flow, and 3) natural convection over heat sinks.

Instructor groups students based on which of the 3 scenarios they seem to understand best. Instructor creates follow-up questions for each group.

**During Class**
Student groups of 3 work on follow-up questions leading them to:
- What equation to use
- How to get each variable in the equations
- How to solve for the heat transfer coefficient

If they finish, they work on the associated homework problems.

Instructor creates follow-up questions leading them to:
- What equation to use
- How to get each variable in the equations
- How to solve for the heat transfer coefficient

Instructor facilitates discussions, assesses progress & understanding.

**After Class**
Students prepare to report out their group’s conclusions in next class.

Instructor prepares handout outlining correct equations and approaches to using variables so students can work homework.

**Why Change?**
- Students weren’t “getting it” as well as we would like
- Want to ignite student passions

**What is changing?**
- Reorganized content
- Higher level learning outcomes
- Intentional active learning incorporation
- Heat exchanger design emphasis

**Improvements expected:**
- More interested and better prepared students
- More fun!

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Summer 2017 Cohort