Tips for Lesson Planning

Science education has taught us much about how people learn physics, but to put this research into practice is not always easy. Here is a very short list of things to keep in mind as you plan your lessons.

1. Learning Objectives

- Have a clear idea of what you hope to accomplish each day before you come to class
- Set a small number of learning objectives that are reasonable attainable in each class period.
- Include both content goals and skills
- Share learning goals with the students
- Write assessments (HW, exams, projects) to reflect learning goals

2. Assess student learning

- Ask the students what they know (or have questions on) before you begin the lesson
- Continuously assess students' progress toward meeting the learning goals (this is called formative assessment)
- Be prepared to change course as necessary
- Ways to assess student learning informally:
    - Ask good questions, and listen to the answers
    - Allow students time to ask questions, and take time to answer them
    - One-minute papers
    - Quick "quizzes"
    - Clickers
    - Post-it notes
    - Think-pair-share

3. Use student-centered teaching

- Involve students in the activity/discussion as much as possible. Even lectures can be interactive if you give students time to stop and discuss with each other (i.e. peer instruction).
- Examples of student-centered teaching:
    - Discussions (think-pair-share)
    - Tutorials
    - Student-designed experiments
    - Conceptual and/or mathematical modeling
    - Case Studies
    - Exploratory investigations
    - Hands-on, minds-on activities
    - Projects or presentations

Secrets to a good lesson:

- Be prepared
- Don't try to do to much
- Be flexible. Student learning is more important than your lesson plan.
- Use a variety of teaching strategies. There's no best way to teach!