Tips from a Computer Science Principles Pilot

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A collection of observations, tools, and practices from teaching a Computer Science: Principles pilot.

1. A student-centered approach and agenda really does engage students.

2. Students already know many “computer science” concepts.
   They may not realize them explicitly and they don't know the jargon.
   Reacquaint them with the concepts from life in the real-world, then demonstrate and express in computer science terms.

3. Activate each concept prior to labeling or formalizing it.

4. Tangible experiences work best for introducing concepts.

5. Introduce concepts using self-directed discovery learning (including programming).
   Feasible using Light-Bot (original and 2.0) and Scratch.
   http://chat.kongregate.com/gamez/0002/2915/live/BillBotKong.swf
   http://chat.kongregate.com/gamez/0008/3984/live/Lightbot2.0Kong.swf
   http://scratch.mit.edu/ http://byob.berkeley.edu/ BYOB variant of Scratch

6. Use examples from domains that promote students’ receptiveness.
   Learn what alienates and hinders the receptiveness of the specific group of students.

7. Model, mentor, and facilitate collaborative group-work.

   Computer Science Unplugged http://csunplugged.org/
   Exploring Computer Science http://www.exploringcs.org/

   Xtranormal http://www.xtranormal.com/
   Kompozer http://kompozer.net/

10. Join computer science education electronic discussion groups.
    http://www.sigcse.org/membership/mailingLists

Additional websites:
   Computer Science Teachers Association (CSTA) http://www.csta.acm.org/
   Computer Science: Principles http://csprinciples.org/
   Computer Science For Fun http://www.cs4fn.org/

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