

CIPS Learning Cycle

Each unit in CIPS consists of 2 to 4 learning cycles, and each learning cycle usually targets a small set of related benchmark ideas (about 1 - 4 ideas). The CIPS learning cycle has gone through many modifications in the last two years. Our current version of the four types of lessons included in a learning cycle is described below.

Our First Ideas. A two-day lesson designed to elicit students' prior knowledge about the targeted benchmark ideas. A problem is posed and cooperative teams of students usually predict, observe, and present their ideas about the relevant situation or event in the problem. Occasionally teams explain everyday events.

Developing Our Ideas. A strategic sequence of 4-6 lessons designed to build on students' prior knowledge and help them make sense of the set of targeted benchmark ideas. A development lesson usually "targets" one benchmark idea. That is, each lesson is designed to help students make sense of one benchmark idea. Occasionally a development activity is designed to review required prerequisite knowledge. There are two types of development lessons that we call "constructing lessons" and "presenting lessons." Constructing lessons are used when the targeted benchmark idea is simple enough to be constructed and tested by students through hands-on experiences. Presenting lessons are used when the targeted benchmark idea is too abstract for students to construct and test the idea through hands-on experiments.

Putting It All Together. In this lesson teams compare their initial ideas with the benchmark ideas they have learned in the development activities, and any technical terms are introduced at this point. The reading and/or teacher models how the benchmark ideas can be used to solve the original problem posed in the first lesson, then teams are guided as they practice using the benchmark ideas to solve part of original problem or a very similar problem.

Idea Power! At least two lessons where students practice using the benchmark ideas to solve a real-world problem. The first lesson is usually more guided than the second.

From: Heller, P. (2003) Lessons Learned in the CIPS Curriculum Project. AAAS
<http://www.project2061.org/meetings/textbook/science/Heller.htm>