

## ***CIPS Lesson “Example”***

### **Unit Overview (Teacher's Guide only)**

Includes targeted benchmark ideas for unit; how taught in each cycle.

- II.1 Prerequisite Knowledge/Skills
- II.2 Alerting Teachers to Commonly Held Ideas
- I.3 Justifying Activity Sequence

### **Cycle Overview (Teacher's Guide only)**

Includes prerequisite knowledge/skills, targeted benchmark ideas for cycle; commonly held student ideas, how ideas are taught in cycle.

#### **Unit/Cycle Introduction**

Story line to motivate learning of targeted benchmark ideas.

- I.1 Conveying Unit Purpose

### **Our Initial Ideas (Elicitation of Student's ideas related to targeted Benchmark ideas)**

#### ***Purpose***

Relates cycle key question to story line

- I.1 Conveying Cycle Purpose
- I.2 Conveying Lesson Purpose

#### ***We think . . .***

Problem (describe, explain or predict) posed about situation(s) or event(s). Partners or teams discuss and write down their ideas (and reasons).

- II.3 Assisting Teacher in Identification of Own Students' Ideas
- V.2 Encouraging Students to Explain Their Ideas

#### ***Explore Your Ideas***

Teams do an experiment (or participate in class demonstration). They discuss their ideas about questions posed and write/draw ideas on a presentation board.

- II.4 Addressing Students' Commonly Held Ideas
- III.1 Providing Variety of Phenomena
- III.2 Providing Vivid Experiences

### ***Our Class Ideas***

Teams present ideas to class. Class members ask clarifying questions. Teacher helps summarize Class Initial Ideas.

V.2 Encouraging Students to Explain Their Ideas

### **Developing Our Ideas - Constructing Type**

#### ***Purpose***

Review of what has been learned so far and key question of what needs to be learned next.

I.2 Conveying Lesson Purpose

#### ***We think . . .***

Elicits students ideas about relevant situation(s) or event(s) related to targeted benchmark idea

II.3 Assisting Teacher in Identification of Own Students' Ideas

V.1 Encouraging Students to Explain Their Ideas

#### ***Explore Your Ideas***

Students explore situation(s) or event(s) through hands-on activity, class demonstration(s), or consideration of known every day event(s).

II.4 Addressing Students' Commonly Held Ideas

III.1 Providing Variety of Phenomena

III.2 Providing Vivid Experiences

IV.2 Representing Ideas Effectively

#### ***Make Sense of Your Ideas***

Series of questions to help students relate observations to targeted benchmark idea.

V.1 Encouraging Students to Explain Their Ideas

V.2 Guiding Interpretation and Reasoning

#### ***Reflect on Your Ideas (not every lesson)***

Writing activity for students to reflect on what they have learned.

V.3 Encouraging Students to Think About What They Have Learned

## **Developing Our Ideas - Presenting Type**

### ***Purpose***

Review of what has been learned so far and key question of what needs to be learned next.

I.2 Conveying Lesson Purpose

### ***Introduction to Targeted Benchmark Idea***

Reading, demonstrations, and class discussion of targeted benchmark idea.

III.1 Providing Variety of Phenomena

V.2 Guiding Interpretation and Reasoning

IV.2 Representing Ideas Effectively

### ***You Try It!***

Students explore additional situations and events not used to present the idea.

III.2 Providing Vivid Experiences

IV.1 Encouraging Students to Explain Their Ideas

IV.4 Providing Practice

### ***Reflect on Your Ideas (not every activity)***

Writing activity for students to reflect on what they have learned.

V.3 Encouraging Students to Think About What They Have Learned

### ***Putting It All Together (summarize benchmark ideas learned, introduce how to use ideas)***

### ***Consensus Ideas***

Compare ideas learned with class initial ideas.

V.3 Encouraging Students to Think About What They Have Learned

### ***How Do Scientists Represent These Ideas***

Reading/discussion of technical terms for targeted benchmark ideas.

IV.1 Introducing Terms Meaningfully

### ***How Do Scientists Use These Ideas***

Reading and/or teacher modeling of how to use benchmark ideas to solve original problem posed in Our Initial Ideas lesson.

IV.3 Demonstrating Use of Knowledge

**You Try It!**

Guided (scaffolded) practice of using benchmark ideas to solve part of original problem or very similar problem.

IV.4 Providing Practice

***Idea Power! (students apply what they have learned to solve at least two problems)***

***Situation and Problem Statement***

Problem statement in form: Use your consensus ideas to describe (or explain, or predict) something about real-world situation or event.

IV.4 Providing Practice

V.3 Encouraging Students to Think About What They Have Learned

***Solution (includes evaluating solution)***

Sometimes involves experiment. Students follow four-step problem solving strategy to solve problem.