

(<http://csmatters.org/pd-new>) C - 07

0bC - 0b111

Abstraction

Unit Concept Lessons

Revision Date: Aug 31, 2017

Duration: 60 50-minute sessions



Lesson Summary

Summary: In this lesson, the teachers will learn about abstraction by journaling, defining it, and recognizing it within the curriculum framework.

Outcomes: Teachers will...

- Be able to describe, in their own words, what abstraction means.
- Understand the importance and relevance of abstraction in particular sections of the curriculum.
- Consider what their students need to know about abstraction.
- Identify questions and prioritize certain information to reflect what their students need to know about abstraction.

Overview:

Total time: 60 min

1. Journal Activity (5 min)
2. Abstraction Overview (35 min)
3. Table Activity (20 min)

Learning Objectives

Teacher Resources

CL07_Abstraction Folder (<https://drive.google.com/open?id=0B5vAY-fhOT-ibFZiajVRWGcyWGc>)

Lesson Plan

TOTAL: 60 minutes

Journal Activity (5 min)

Teachers will describe, in their own words, what abstraction means.

Abstraction Overview (35 min)

Go over the definition of abstraction. Then, go over abstraction in the curriculum framework:

1. Procedural/functional abstractions
 1. **Question:** How can procedural abstractions help to manage the level of complexity of a program?
2. It's Just Bits
 1. Color Code Picker Example
 1. **Question:** What are the level of abstraction in this example?
3. The Internet and its Infrastructure
 1. **Question:** What levels of abstraction exist with respect to the Internet?
4. Modeling and Simulations
 1. Interactive Simulation of an Epidemic
 1. **Question:** What details of the epidemic scenario have been abstracted in the simulation?
5. Abstraction in the Create Performance Task
6. Abstraction in the AP CSP Curriculum Framework

Go over what students need to know about abstraction:

- Consider all the EK items about abstraction.
- What does the AP CSP course as defined by the College Board require students to know about abstraction?
 - Each person in group (total: 4 members per group) is assigned a different Enduring Understanding.

Table Activity (20 min)

Discuss, identify questions, and prioritize.



(<http://www.umbc.edu/>)



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