

Register Today

ISB WORKSHOP

27-28 February

09:00 - 16:00

International School Basel
Aesch Campus, Arlesheimerstrasse 7
4147 Aesch, Switzerland

Concept Based Mathematics: Teaching for Deep Understanding Certification

By Jennifer Chang Wathall

Overview:

Traditional curriculum focuses on rules and procedures with little attention paid to the conceptual relationships of mathematics and mathematics is a language of conceptual relationships. Traditional curriculum often assumes the deep understanding of concepts, and fails to teach for transferability, or to consider context.

With the exponential growth of information and knowledge students need to move to a higher level of abstraction. We need to develop students' ability to critically think and reason, in order to solve complex problems and create new ideas.

This workshop will cover the concept based curriculum design model specifically for mathematics and be conducted in English.

All content will be based on Jennifer Wathall's book "Concept Based Mathematics; Teaching for Deep Understanding in Secondary Schools" and a copy will be supplied for the workshop. Many early years and primary examples will be provided during the workshop.

This workshop will address the following questions:

- Why is it important for students to learn conceptually?
- What are the facts, processes and concepts in mathematics?
- How do I craft generalizations in mathematics?
- How do I craft quality guiding questions?
- How do I plan units of work for concept-based mathematics curriculum?
- How do I captivate and engage students? Practical strategies for creating rich learning experiences in the classroom
- How do I integrate technology to foster conceptual understanding?

After this workshop you will be able to:

- Understand the concept-based model for mathematics



- Write quality generalizations and guiding questions.
- Use a unit web to plan a concept based mathematics unit.
- Design engaging, rich learning experiences for your students.
- Use formative assessment strategies to inform teaching and learning.
- Embed the use of technology effectively to enhance conceptual understanding.

Agenda:

Day 1

- SESSION 1 Introduction to concept-based curriculum and concept based mathematics. Why is it important for my students to learn conceptually? The facts, processes, and concepts in mathematics.
- SESSION 2 Using the Structure of Knowledge and the Structure of Process in mathematics and how to craft quality generalizations.
- SESSION 3 Concept-Based Mathematics Learning Experiences and recap preparation

Day 2

- SESSION 1 Recap groups throughout the day. Continue with crafting mathematics generalizations, concept-based mathematics unit planning
- SESSION 2 pm Unit planning, guiding questions and more concept-based learning experiences
- SESSION 3 Critical content in unit planning: KUDs. Designing authentic performance assessment tasks.

Audience:

Early years, Primary and Secondary Mathematics educators

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