



Course Title: Integers

Grades 6-9

AIMS Publication: *Positive v. Negative: Investigation with Integers*

Instructor's Name: Sheldon Erickson, AIMS Education Foundation

Course Number: MAT 951

Number of Credit Units: 3 semester units

Course Content/Description:

Elevators, cars, grabbing money...Explore a hands-on approach to teaching students about integers and integer operations using directional models and value models.

Learning Goals

1. To provide guided opportunities for implementation and sustained use of hands-on experiences in mathematics in a classroom setting
2. To provide opportunity for reflective practice through the use of instructional planning, focused questions, and reflective responses
3. To increase the opportunity for conceptual understanding by showing alignment of instructional experiences with state content standards for mathematics
4. To foster positive attitudes and confidence in teaching and learning
5. To expand knowledge base of mathematics education

Course Materials

AIMS publication: *Positive vs Negative: Investigations with Integers*

Tile Spacers (bag of 200)

An Overview of AIMS (online- PDFs; bitly.com/AIMSpdfs)

with required reading and application of ideas from the following selected articles:

A Model of Learning

The Skills for Thinking

(If Internet is not available to download the pdfs, AIMS can mail copies of these pages.

Please email spscourses@aimsedu.org or call 1-888-733-2467 ext. 8112 to request copies.)

Focus questions and guidelines for responses based on understanding and application of materials and ideas.

Overall Plan for Implementation within a four to six week period

Application of the Model of Learning

Application of Thinking Skills and Alignment with Standards and Learning Goals

Reflective Response and Focus Questions

Professional Growth and Reflection: A Response to Articles and Experience

Summary of Alignment with State Content Standards
Final Performance Assessment for a letter grade of A

Course Requirements/Schedule of Topics and Assignments

1. Students will completely familiarize themselves with the activities in the AIMS publication *Positive vs Negative: Investigations with Integers*.
2. Students will read the selected articles in **An Overview of AIMS** (online- PDFs; bitly.com/AIMSpdfs) with required reading and application of ideas from the following:
A Model of Learning
The Skills for Thinking
(If Internet is not available to download the pdfs, AIMS can mail copies of these pages. Please email spscourses@AIMSedu.org or call 1-888-733-2467 ext. 8112 to request copies.)
3. Students will design a plan for implementation of twelve (12) experiences from the AIMS publication *Positive vs Negative: Investigations with Integers* including a summary of and rationale for the selection of **AIMS** lessons.
4. Students will choose one lesson from the AIMS publication *Positive vs Negative: Investigations with Integers* and describe how it addresses the four learning environments of the **Model of Learning**.
5. Students will implement twelve (12) lessons in the classroom with students over the duration of the course.
6. Prior to teaching each lesson, students will apply the *Skills for Thinking* to the design of tasks and discussion questions reflecting important concepts, skills and processes integral to each lesson. Students will record these on pages labeled **Applying Thinking Skills**. Students will also record the Learning Goal **and** appropriate State Standards on pages labeled Applying Thinking Skills.
7. Show summary of alignment of learning goals with **State Content Standards**. Content Standards for each state may be found at this Web-site address:
US Department of Education has links to the state department of education for each state.
bit.ly/hj77dh
8. After each lesson, students will reflect upon their teaching by responding to the Reflective Response focus questions.
9. Complete a **Professional Growth and Reflection** form describing how the selected articles (see number 2 above) and the teaching experience impacted you and your teaching.

Method of Assessment:

Provide evidence of the design, implementation, evaluation and reflection of the collective experiences by returning the completed assignments.

Unless otherwise indicated, students successfully completing this course will earn a Credit/No credit grade or where a letter grade is requested by checking the appropriate box on the Fresno Pacific University grade form, a letter grade of B will be issued. In order to

earn a letter grade of A, additional work beyond what is described will be required.

The discernment between an A or a B is at the discretion of the instructor of record based on the quality of the evidence submitted.

Additional requirement for an earned letter grade of A

1. Adapt, modify, or use one of the investigations in the book as a final performance assessment of understanding of Directional Model or Value Model.
2. Submit a summary of how the activity was used and/or modified explaining the rationale for using the activity in this way.
3. Include at least four examples of student work on the final performance assessment, which demonstrate the variety of student successes.
4. Include a scoring rubric and written analysis of what you learned about student understanding from looking at the included examples of students' work. Reflect on how what you learned from the assessment might change your instruction in the future.

University Policy on Plagiarism

All people participation in the education process at Fresno Pacific University are expected to pursue honest and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled according to the procedures set forth in the Fresno Pacific University Catalogue.