Modeling Sequences

Lesson Planning Components

SOL

7.2 The student will describe and represent arithmetic and geometric sequences, using variable expressions.

Content Objective

The student will be able to construct an sequence and generalize the sequence. They will be able to find the nth term as well.

Key Vocabulary

- sequence
- Geometric sequence
- Arithmetic Sequence

Key Manipulatives & Technology

- Objects of the students' choice

Lesson Sequence Components

Before Phase

Breif overview of what it means to be a sequence, basic examples of sequences, "Can you guess what the next number/shape/picture would be?"

During Phase

Pose a sequence and ask students to find the 100th number/shape/picture in the sequence.
(at this point the lesson can go in a few directions...hence diversity shit)
Work with finding the 100th term, pose less challenging sequence-index, or move on...

Sequences in Nature/other cool real world shit

After Phase

Project Description

In groups of two, **construct a model** that represents a sequence. This model can be made from just about anything…
Each group is to **prepare a short presentation** about their construction. The presentation should include types of materials used, an explanation of the sequence, and any troubles/obstacles they may have run into.
Each student is to turn in a brief one page (typed) **reflection** that must include a reflection of how the project progressed and an **individual explanation** of why their project/construction models the sequence. They will have to explain if it is a geometric or arithmetic sequence and have the students explain how they would go about generalizing the sequence.

Grading Rubric

Construction

Creativity (20 pts.), Neatness (10 pts.), Appropriate use of a sequence (20 pts.) sub-total = (50 pts.)

Presentation

Description of construction(5 pts.), why the construction follows the sequence given (10 pts.) , both students speak/share (5 pts.)
sub-total = (20 pts.)

Write-up

Reflection (20 pts.) on Project Progression, Individual explanation of the sequence (10 pts.)
sub-total = (30 pts.)

Total = 100 pts = 1 Test grade

Lesson Analysis Components

Justification:
This project allows students to take everyday objects and relate them to mathematics. They would have to be creative and would be able to incorporate their cultures and personal experiences to the project. Additionally, this project is equitable because students can use anything, instead of having to rely on technology that they might not have access to.