

Lesson Plan
Unit 1 Lesson 5
Vertex- Edge Graphs

Subject:
Math III-Vertex Edge Graph

GPS:
MM3A7. Students will understand and apply matrix representations of vertex-edge graphs.
a. Use graphs to represent realistic situations.
b. Use matrices to represent graphs, and solve problems that can be represented by graphs.

Clarified Objectives:
Know:

Understand:

Be able to do:
(Skills)

Essential Question:
How do I represent real-life situations using a vertex-edge graph?

Activate Learning: Assess Prior Knowledge

Session 1

Word Splash provided. Give each student a copy of the word splash and green yellow and red colored pencils. Students should circle words they know in green, words they are familiar with in yellow, and unknown words in red. Teacher uses this information to guide review of absolute value functions.

Teaching Strategies: How will students acquire the facts, vocabulary, skills, processes they will need to learn these essential understandings?

(Lectures-Distributed Guided Practice, Distributed Summarizing in Pairs, Graphic Organizers, Mnemonics, etc)

Material is broken up into small portions of information. Students will not move on to the next concept until mastery of the current one. Guided practice is integrated with partner work in order for students to discuss the material, ensuring successful understanding of the concept.

Scaffolding and/or Differentiation:

Students may work in pairs. Guided note taking will be included for students who need the extra help.

Technology Integration:

Power Point Presentation to assist students in note taking.

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=20>

Summarizing:

3-2-1: Students will be asked to list 3 vocabulary words they have learned and their relationship to the vertex-edge graph; 2 reasons to use a vertex-edge graph; and one real-world example of a vertex-edge graph.

Lesson Plan

Extending/Refining (When learning is essential)

Essential Question:

How do I represent real-life situations using a vertex-edge graph?

Transition to Additional Strategies for Learning:

Students will use technology to further investigate the use of Vertex-Edge Graphs.

Cognitive Teaching Strategy:

(Inductive, Compare/Contrast, Inquiry, Concept Attainment, etc.)

Concept Attainment-In this lesson, students will apply what they have learned about Vertex-edge graphs to create their own real-world examples.

Scaffolding and/or Differentiation:

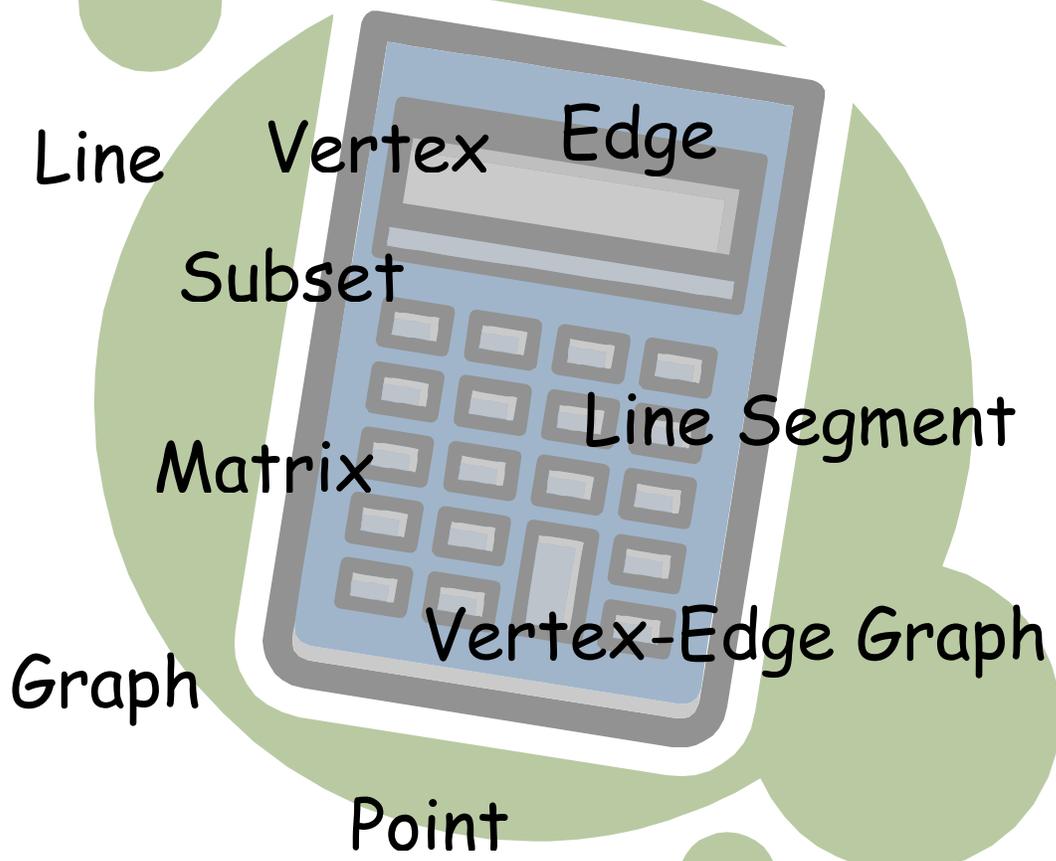
Students' examples will be based on their own lives. In doing so, students will pull from their own experiences using what they are already familiar with.

Technology Integration:

<http://illuminations.nctm.org/ActivityDetail.aspx?ID=20>

Students Summarize Lesson: (Answer EQ)

TOD-Explain how you used what you know about vertex-edge graphs to create your real-life example.



Line

Vertex

Edge

Subset

Matrix

Line Segment

Graph

Vertex-Edge Graph

Point

Vertex-Edge Graphs

Paved-Road Problem

Objective

- 7 towns, pave roads so people can get from every town to every other town on a paved road. (minimize the distance)

Extension Lesson

Vertex-Edge Graph

You have learned about vertex-edge graphs. Today, we will extend our understanding and apply the concepts to our own lives. On your paper, write a scenario about your own life. This scenario can include anything about your life.

Next, go to <http://illuminations.nctm.org/ActivityDetail.aspx?ID=20>. Draw your explanation using the technology on the website. Print out your graph when you have finished.

We will then share with our classmates. Be prepared to explain your scenario and how you used the vertex-edge graph to demonstrate this relationship.