

Algebra/Geometry – Tutor Introduction

The PASS Concept

PASS (Portable Assisted Study Sequence) is a study program created to help migrant farm worker students earn credit through semi-independent study with the help of a mentor. The mentor meets with students on a regular basis to encourage students, answer their questions, review and discuss assignments and progress, and administer tests. Students can undertake courses at their own pace and may begin a course in one location and complete it in another.

Goals

The tutor guide is a new handbook developed by the National PASS Center to provide the tutor who does not have a mathematical background with additional resources to assist them in providing support for the student. The guide will include algebraic and geometric definitions plus an annotated listing of necessary axioms, algorithms, postulates, and propositions. Along with the written definitions, the mathematical concepts will be reinforced with visual representations. Within the geometry course there are multiple classroom activities provided called explorations provided; however, there are no activities provided for Algebra, so we have highlighted some of these mathematical concepts with hands-on, supplementary activities. Additional activities will also be provided for a few Geometry lessons. These activities may be presented by the instructor/mentor, or may be performed by the student in a semi-independent work environment. While developed to assist the tutor and/or student with successful completion of a PASS course, the Algebra/Geometry Tutor Guide offers general strategies for helping any student studying algebra or geometry.

Organization

Part 1 Glossary of Terms — This portion takes the definitions provided in the glossary of the Algebra and Geometry units, and reinforces them by simplifying the language and providing visuals where necessary.

Part 2 Axioms and Postulates — This portion takes the axioms and postulates provided in the Geometry Handbook, and reinforces them by simplifying the language and providing visuals.

Part 3 Propositions — This portion takes the axioms and postulates provided in the Geometry Handbook, and provides descriptive explanations and proofs of why they are true.

Part 4 Classroom Extensions — This portion provides extra classroom activities to provide a visual background for basic mathematical concepts.

Mathematics is not meant to be memorized; it is meant to be understood. This guide has been written with that goal in mind. Encourage your students to ask questions and exercise their reasoning skills rather than merely memorizing algorithms.

In part 1 of the guide, the definitions are taken from the glossaries of the Algebra and Geometry courses. Additional information appears to be written on strips of paper and tacked to the page so that they may easily be found. Examples are used to illustrate specific concepts. In parts 2 and 3 of the guide, the axioms, postulates, and propositions are taken from the Geometry Handbook. The original statements are bold and italicized, whereas all additional information is provided in regular font. In part 4 supplemental activities have been developed for each unit as detailed in the Table of Contents.

Additional useful online activities, lessons, and web links can be found on the National Council of Teachers of Mathematics web site:

<http://illuminations.nctm.org>