

ANCHORAGE SCHOOL DISTRICT

ANCHORAGE, ALASKA

ASD MEMORANDUM #168 (1999-2000)

February 14, 2000

TO: SCHOOL BOARD

FROM: OFFICE OF THE SUPERINTENDENT

SUBJECT: SURVEY OF ALGEBRA COURSE RECOMMENDATION

RECOMMENDATION:

It is the Administration's recommendation that the School Board approve the continued acceptance of passage of "Survey of Algebra" as one way for students to meet the algebra requirement for high school graduation.

PERTINENT FACTS:

Anchorage graduates, beginning with the class of 2000, must demonstrate mastery of algebra level skills to receive a diploma. There has been general agreement that passage of the second semester of Algebra I or Algebra B would demonstrate this attainment level. Similarly, for students who may have taken algebra prior to entry to high school, taking and passing a mathematics course for which Algebra I is a requirement has been accepted as a demonstration of competence. Currently, passing the second semester of the course "Survey of Algebra," is counted toward meeting the requirement. That specific route to demonstration of competence has been questioned. Following review and discussion, the Administration's recommendation is to continue accepting success in "Survey of Algebra" as a demonstration of the algebra level skills.

The three algebra courses under discussion here are described as follows:

- (a) **"Algebra I:"** This year long course is a rigorous, college preparatory, theoretical algebra course, normally taken by students who are considering college or university education or technical training after graduation from high school. It is designed as the first in a sequence of four or five courses that will take a student to or through calculus by the end of her/his high school years.

- (b) **"Algebra A"/"Algebra B: "** This two year course presents the same content and theoretical approach as Algebra I, but paced so that students who need more processing time will be able to study and master the challenging curriculum. This class is intended for students who are considering a college or university education or technical training but may not be mathematically oriented. Success in this sequence provides a strong background for Geometry, Algebra II, and other higher level mathematics classes.
- (c) **"Survey of Algebra:"** This year long course is designed specifically for students for whom mathematics study is extremely difficult. It includes a strong emphasis on concrete and contextual learning. It is designed to help student: (1) be successful in acquiring the algebra skills necessary to meet the Anchorage algebra graduation requirement; and (2) succeed on the Alaska "High School Graduation Qualifying Examination" (HSGQE). Although not designed as a college intending course, "Survey of Algebra" provides a background in algebra, allowing a student to take additional mathematics classes and applied and technical classes which have an algebra prerequisite. The student who succeeds in "Survey of Algebra" could attend some four year colleges and or universities, trade/technical schools, community college, or continue studying higher level mathematics at a later time if she or he so chose. There may be a need for some additional algebra study in the latter instance.

The administrative recommendation is that the "Survey of Algebra" course be reserved for juniors or seniors who have not previously been successful in an algebra course. Underclassmen who are ready for an algebra level course should be encouraged to enroll in "Algebra I" or "Algebra A"/"Algebra B." The intent is to push students to the highest level they are capable of attaining, but to provide a realistic level for all students and still teach necessary algebraic skills.

Success in "Survey of Algebra" does provide students with options after high school. The course is accepted by the National Collegiate Athletic Association (NCAA) as counting toward a student's load in core academic areas. The course also meets the military and some apprentice programs for an algebra course. Thus, students who take and pass "Survey of Algebra" have several options including: (1) entry into a four-year college/university program ; (2) entry into trade/business school or a two-year college program; (3) entry into the military; or (4) entry into the local labor market. That is, students who take "Survey of Algebra" maintain the same options as students who take "Algebra I" or "Algebra A"/"Algebra B." They may be required to take additional mathematical courses in later years if they move into a mathematical, scientific, or technical area, but the options are still there.

Attachment A presents a chart, consistent with the administrative recommendation, indicating the various possible sequences of mathematics courses open to students who have not taken algebra prior to entering high school.

The original recommendation regarding the continued acceptance of "Survey of Algebra" and its reservation for high school upper classmen was developed by the Secondary Math Sub-committee. The recommendation then garnered the unanimous support and approval of the Secondary Math Curriculum Committee and the Full Math Curriculum Committee.

The recommendation was discussed with the high school principals at their January meeting. Their support for the continuation of the "Survey of Algebra" course was unanimous. The principals were evenly split on the concept of reserving the course for upper classmen. Half of the principals agreed with the recommendation and half of the principals wanted the course open to all students for whom it might be appropriate, regardless of grade level.

The recommendation was also discussed with the curriculum assistant principals. Their support for continued acceptance of "Survey of Algebra" was also unanimous, as was their agreement that students should try other avenues in ninth and tenth grade. The curriculum assistant principals agreed that the course should be reserved for eleventh or twelfth grade students.

The Mathematics Department staff and department chairs all agree that "Survey of Algebra" satisfactorily meets the algebra requirement, addresses the needs of some students better than either "Algebra I" or "Algebra A"/"Algebra B", and provides students with the knowledge of algebraic concepts that would allow them to move on in mathematics if they so desire. Principals and assistant principals seem supportive of maintaining as many options as possible for students to meet requirements.

There is still some concern among administrative staff regarding this issue. However, for students who have not been successful in attaining algebra level skills by eleventh grade, "Survey of Algebra" followed by "Informal Geometry" may be the best means of providing them with the skills necessary to pass the HSGQE and to maintain some options later in life.

School Board approval of this recommendation will continue to provide students with three different course options to satisfy the local algebra graduation requirement, yet maintain the integrity of the algebra classes and the course content. This will also provide time to assess the impact of the algebra graduation requirement and the HSGQE on both the students and the math curriculum.

BC/CC/FS/SS/PM

Attachment

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Carol Comeau, Assistant Superintendent, Instruction

Approved by: Carol Comeau, Assistant Superintendent, Instruction

Attachment

Options for ninth graders entering high school prior to passing an algebra course, and possible mathematics course path options:

<u>9th Grade</u>		<u>10th Grade</u>		<u>11th Grade</u>		<u>12th Grade</u>
Algebra I*	-->	<i>Geometry**</i>	-->	Algebra II	-->	Precalculus
Algebra A	-->	Algebra B	-->	<i>Geometry or Informal Geom.</i>	-->	Algebra II
Pre Algebra	-->	Algebra I	-->	<i>Geometry</i>	-->	Algebra II
Pre Algebra	-->	Algebra A	-->	Algebra B	-->	<i>Geometry or Informal Geom.</i>
		Pre Algebra	-->	Algebra A	-->	Algebra B
		Pre Algebra	-->	Survey of Algebra	-->	<i>Informal Geom.</i>
				Pre Algebra	-->	Survey of Algebra

***bold** - satisfies the graduation algebra requirement

****italics** - is the course level recommended for predicting success on the HSGQE