ANCHORAGE SCHOOL DISTRICT
ANCHORAGE, ALASKA

ASD MEMORANDUM #327 (1999-2000) May 22, 2000

TO: SCHOOL BOARD

FROM: OFFICE OF THE SUPERINTENDENT

SUBJECT: ESL MIDDLE SCHOOL MATH

RECOMMENDATION:

It is the Administration's recommendation that the School Board approve the adoption of ESL Middle School Math as a valid course for ESL middle school students.

PERTINENT FACTS:

As a result of a significant number of ESL students in middle school failing (Math 7 and Math 8) by the end of the first quarter, the Bilingual Department identified the need for an ESL Middle School Math course. Despite the efforts and accommodations made by the math teachers, it was felt that the students would neither be able to catch up nor maintain a passing grade. The identified ESL students had limited math skills, inadequate reading and verbal comprehension, and were unable to utilize the math language and concepts presented in the curriculum. The ASD math curriculum is language dependent and requires students to articulate, verbally and in writing, how they process a particular operation. This is very difficult for limited English speakers and becomes more so when their cognitive development in math skills and concepts is also delayed. The ESL tutorial program is not sufficient to bring these students up to their developmentally appropriate level, as defined by the ASD Math Performance Standards. The foundation in math skills and English content language has to be acquired first.

It has been shown that for bilingual students, the fifth or sixth grade is a transition period when math concepts become a language of their own and demand a higher level of abstract language and content comprehension. This has led bilingual educators to change math instruction from students' native language (e.g. Japanese or Spanish) into English in order for students to maintain their cognitive level of growth in math. The ESL Middle School Math would provide an option for seventh and eighth grade ESL students who are Non English Proficient (NEP) or Limited English Proficient (LEP) and

who are receiving grades lower than a "C" in Pre-Algebra or Math 7. (This is the method used by the Bilingual Department to identify students.)

ESL students may encounter many difficulties when there is a lack of an appropriate mathematics curriculum that can meet their educational needs. Cultural background or difficulties with the English language must not exclude a student from full participation in the school's mathematics program. Mathematics is considered a universal language. Accordingly, many educators believe that mathematics skills are easily transferable from one language to another. However, studies and experience with language minority children have identified mathematical skills that are not transferable from one language and culture into another, including: word/symbol recognition, computation, problem-solving processes, and cultural influence.

ESL Middle School Math is designed to build middle level ESL students' content language and mathematical literacy skills in English and move them toward developmentally appropriate standards. The course is designed to develop basic math skills as well as conceptual understanding. It will incorporate the ASD Math Content Standards from grades 5 and 6 - Estimation, Number Sense, Concept of Number Operations, Computation, Geometry, Measurement, Statistics, Probability, Patterns, and Algebra. It will also incorporate ESL content standards. Teachers of English to Speakers of Other Languages (TESOL) have identified ESL Standards for PreK-12 students (specifically for grades 4-8, Goal 2 and Standards 1 and 3). TESOL Goal 2: To use English to achieve academically in all content areas. Standard 1: Students will use English to obtain, process, construct, and provide subject matter information in spoken and written form. Standard 3: Students will use appropriate learning strategies to construct and apply academic knowledge. These standards provide the language focus and guiding principles for the ESL math course.

The ESL Middle School Math course proposal has received the support and approval of the Full Math Curriculum Committee. This course has also been unanimously approved by the middle school principals and was piloted at Romig Middle School during the 1999-2000 school year.

If Board approval is granted, it is likely that Clark and Romig Middle Schools will be the only schools using this program. It is anticipated that 20 additional textbooks books may need to be purchased at a cost of $37.89 per book. Costs would be shared between the Bilingual Department and the school supply budgets.

BC/CC/BH/SS/FS

Attachment

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Approved by: Carol Comeau, Assistant Superintendent, Instruction

COURSE DESCRIPTION
ESL Middle School Math

ESL Math	7 – 8	2 semesters
Course Title	Grade Level	Length of Course

Prerequisites

This course is designed for Non-English Proficient or Limited English Proficient students who are not having academic success in the regular middle school mathematics programs. This course should not be taken by any ESL student who has successfully completed Pre-Algebra or Math 7 with a "C" or better (in US schools) or any higher math course.

Course Description

This course is designed for ESL students who are not yet literate in the content areas of math and English; who are non-English-proficient or limited-English-proficient (NEP/LEP); and who need targeted assistance in accessing the content and language of the mathematics curriculum. This course covers addition, subtraction, multiplication, and division of whole numbers, fractions and decimals; estimation, percents, solution of word problems, calculator applications and mathematics content vocabulary development.

The purpose of this course will be to instruct the students in basic math skills as well as the English content (math) language necessary to bring them up along the performance standard continuum toward their developmentally appropriate level.

Approved Textbooks

Basic Math Texts

6 - 8 Scott Foresman - Addison Wesley, Middle School Math , Books 1 and 2 (1998)

Supplementary Materials

6 - 8 Dale Seymour Publications Connected Mathematics Project (1996)
5 & 6 Math Learning Center, Math in the Mind's Eye (Visual Math) (1994, 1995, 1996)
5 & 6 Heath, Connections, (1996)
5 & 6 Everyday Learning Corp., Everyday Math 1998