

We believe...

- all students can learn math and strive to make sense of math.
- students are active learners who construct their own learning.
- math is most meaningful when it is authentic and connected to the real world and everyday life.
- math understanding progresses from concrete, to representational, to abstract.
- number sense is the foundation of math learning.

Math learning happens best when...

- students explore and explain their own understandings in a variety of ways.
- teachers facilitate, model, observe, and guide using best practices.
- the curriculum is based on standards and benchmarks.
- on-going assessment drives instruction.
- instruction is supported by multiple resources.
- instruction is differentiated and developmentally appropriate.

K-12 - The goals of the AES mathematics program are to enable students to:

- communicate mathematically
- reason mathematically
- make connections among mathematical concepts
- become problem solvers
- build conceptual understanding
- develop and utilize visual and spatial thinking skills
- become confident in their mathematical abilities
- apply mathematical modeling to real world situations
- effectively use appropriate technology
- appreciate the value and beauty of mathematics

K-12 - As educators, we will accomplish these goals by:

- providing meaningful problem solving opportunities
- providing opportunities for students to express mathematical ideas orally and in writing
- accommodating a wide variety of learning styles and offering opportunities to learn both cooperatively and individually
- offering a variety of activities with physical materials before emphasizing work with symbols
- utilizing appropriate tools and technology
- offering opportunities to develop and use the language and notation of mathematics
- using appropriate models to enable students to construct conceptual understanding
- encouraging students to make connections between mathematics and other disciplines

ES-Math

AES Curriculum Framework

AES Mission: The American Embassy School serves students from the United States and other nations. It provides a quality American education that enables students to be inspired learners and responsible global citizens through the collaboration of a dedicated faculty and a supportive community.

We believe that:

- ▶▶ each individual has intrinsic value
- ▶▶ people are responsible for the choices they make
- ▶▶ diversity enriches us
- ▶▶ every person needs nurturing to thrive
- ▶▶ every person has a right to learn in a safe environment free of prejudice
- ▶▶ service to others strengthens us
- ▶▶ trust and respect are essential in relationships
- ▶▶ life is more meaningful when lived with integrity and passion
- ▶▶ every person has a responsibility to contribute to peace and harmony in the world
- ▶▶ every person has a responsibility to protect and preserve the environment of our planet

We are committed to...

- ... developing a community service ethic and practice in all students.
- ... ensuring a caring school atmosphere is evident in how we work with students, families and one another.
- ... the practice of an open, transparent and collaborative decision-making process.
- ... reducing our school's environmental footprint.

K-12 Mathematics Philosophy:

Mathematics enables all students to develop competencies, conceptual understanding and reasoning skills leading to mathematical literacy and the appreciation of the role of mathematics in an increasingly technological world.

Understanding by Design Framework

1. Curriculum (What we want students to learn..)

AES Standards (NCTM): What we want students to know, do, and understand. ↓

Benchmarks (NCTM): What we want students to know, do, and understand by the end of a band of grade levels (ex. K-Gr. 2). ↓

Unit Understandings/Big Ideas: The learning that is at the heart of the unit and that needs to be explored through a process of inquiry

Unit understandings will be proposed by ES math committee. ↓

Unit Essential Questions: Questions that guide student inquiry to build understanding.

Unit questions will be proposed by ES math committee. ↓

Knowledge and Skills=Performance indicators: ↓

We are using AERO adopted performance indicators specific to each grade level to build toward banded benchmarks. (AERO is aligned to NCTM standards)

Concept Map:

Visual of key ideas and summary of performance indicators for unit

2. Assessment (Evidence of Learning)

- **Formative:** Assessment for learning that occurs throughout unit to help guide instruction and learning
- **Summative:** Assessment of learning that evaluates what student know, do, and understanding after they have been taught
- **Common:** A formative or summative assessment all teachers teaching the same course or grade agree to use to collect evidence of learning

3. Instruction

Key teaching strategies and learning activities:

- Research based best practice
- Inquiry
- Depth / not breadth

*We will be selecting a core resource.

Resources:

Materials/ resources used for Instruction:

Resources are the instructional tools we use in the classroom.