

Math Philosophy

The mathematics program at Cairo American College is based on the standards developed by the National Council of Teachers of Mathematics.

Student learning is based on the following beliefs:

- Mathematics is accessible to all learners.
- All learners can engage in the practices and thinking dispositions of mathematicians.
- Learners construct deep mathematical understanding through exploring meaningful, complex problems both independently and in collaboration with other learners.
- Learners develop mathematical understanding through reflecting, explaining, questioning and defending strategies.
- Learners use authentic mathematical representations to organize, record, and communicate their understanding.
- Using multiple valid strategies, learners build new understanding and mathematical knowledge by expanding on prior experience and knowledge.
- Learners develop and demonstrate a balance of conceptual understanding, procedural proficiency and factual knowledge.

Our mathematical teaching practices that promote student learning are based on the following beliefs:

- Teachers promote a culture of thinking by empowering students with the dispositions and thinking routines to develop deep mathematical understanding.
- Teachers provide opportunities for learners to behave as mathematicians.
 - modeling effective questioning techniques
 - posing real life open-ended problems requiring students to use multiple valid strategies
 - reflecting
 - communicating thinking both individually and collaboratively
- Teachers ensure that learners develop a balance of conceptual understanding, procedural proficiency and factual knowledge.
- Teachers design effective lessons that build on a learner's prior experience and knowledge, and plan for individual learning styles and needs.
- Teachers pursue professional development reflecting current research in mathematics education, ensuring the use of best practices.