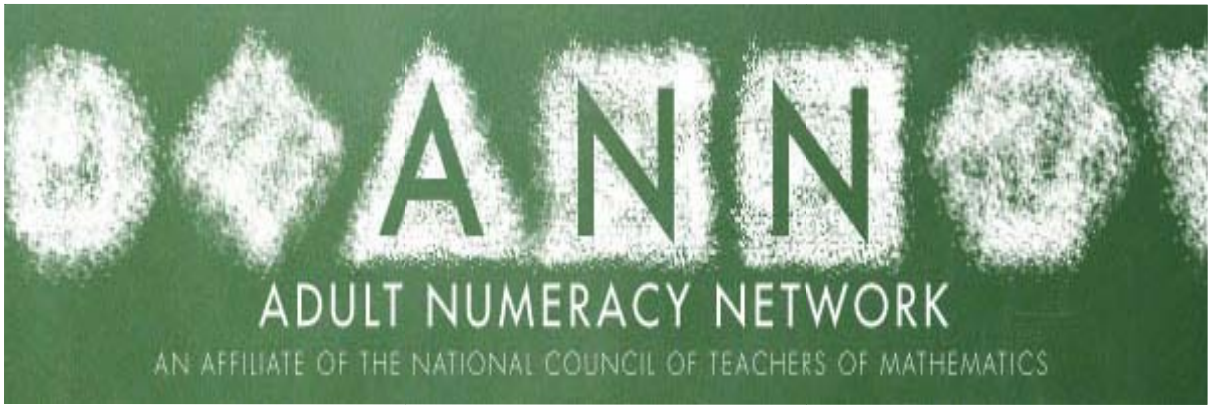

TEACHING AND LEARNING PRINCIPLES

Curriculum

A high quality mathematics curriculum for adult learners should:

- include the concepts of number, data, geometry, and algebra at all levels of learning so that students can develop and connect mathematical ideas.
- weave together *all* the elements of mathematical proficiency – not only procedural fluency, but also conceptual understanding, ongoing sense-making, problem solving, and a positive attitude about learning mathematics.
- feature worthwhile tasks, such as activities that are drawn from the context of real life experience.

Learning Environment

In an adult education learning environment, mathematics instruction should:

- build on what students already know, valuing the various informal and alternative strategies students use to solve problems.
- include opportunities for students to question, reason, solve problems, define goals and monitor their own progress by using estimation, mental math, computation, and technology when appropriate.

PROFESSIONAL DEVELOPMENT PRINCIPLES

Design

Sound professional development in adult education mathematics should be designed to:

- begin with teachers as mathematics learners and thinkers.
- be a continuing process that is connected to curriculum and assessment standards, program policy and instruction and current research.
- be welcoming and accessible to all – to literacy and language teachers as well as to those who primarily teach mathematics.
- be evaluated with respect to its impact on teacher behavior in relation to increased student learning.

Content

Professional development opportunities should focus on improving teachers' abilities to:

- establish a deep understanding of the mathematics of the curriculum and its principles.
- understand how adults' mathematical knowledge develops, how to recognize previous misconceptions, and how to assess and engage prior knowledge.
- use a broad range of instructional strategies that utilize a variety of materials to accomplish learning goals.
- understand how research can be used to improve their effectiveness as teachers.