Lori Gibson

Lori Gibson holds a Master's Degree in Educational Leadership and has teaching degrees in mathematics and physical education. She is currently the Secondary Education Coordinator for Dickinson State University (BSC Campus). Lori has 17 years of educational experience (13 years as a teacher and 4 years as a Math Staff Developer for Bismarck Public School District). She has presented at many state and regional conferences, provided staff development for districts and has served on many district and state committees.

A curriculum vitae and more information about Lori's qualifications, experiences and references will be given upon request.

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Educational Consultation

Fostering Geometric Thinking

For: Teachers grades 4-12.
Participants will:

- Engage in many rich geometric problems using Tangrams, patty paper, origami paper, string, and many other tools.
- Look at geometric properties through a different lens. Many adults have had the experience of memorizing the properties and formulas, but what do these really mean? What do they look like?
- Explore rich mathematical problems in geometry and measurement, and tools for discussion and reflection aimed at deepening teachers understanding of geometric thinking,
- Observe how students thought about the same problems either by viewing videos or by looking at student work.
- Not leave this workshop without a few "aha" moments. Geometry will never look the same.

Note: This course consists of 8-10 three-hour sessions. The timeframe and objectives of the workshop can be adjusted to meet the needs of teachers and the district.

Lori is a certified trainer of Fostering Geometric Thinking and for two years field-tested the materials for EDC (Educational Development Center in Boston, MA) and the authors.

Developing Mathematical Ideas (DMI): Exploring Basic Skills

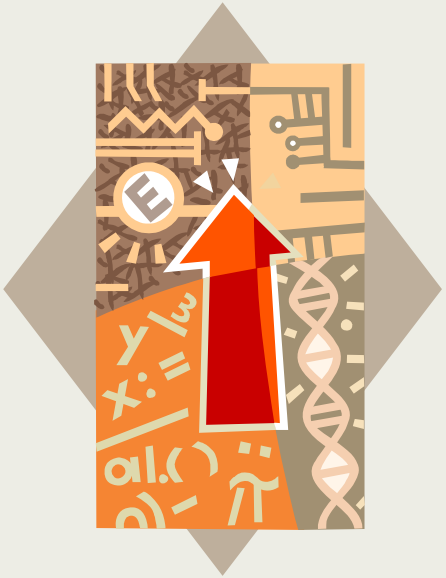
For: Teachers grades K–8
Why are some students able to understand and memorize basic facts and others are not? How can we make basic skills more engaging and accessible to *all* students?
Participants will:

- Look at basic facts through a different lens. Many adults have had the experience of memorizing the facts and not really understanding what they mean? How do students naturally approach addition, subtraction, multiplication, and division?
- Obtain practical strategies and ideas to easily implement in their classrooms.
- Explore what current research says about timed tests and "best practices" are for teaching basic facts.

Note: This course consists of 6-8 three-hour sessions. The timeframe and objectives of the workshop can be adjusted to meet the needs of teachers and the district.
Lori is a certified trainer of Developing Mathematical Ideas (DMI) and taught it for two years to Bismarck Public School District's elementary and middle school teachers.

Professional Development for Elementary & Secondary Math Teachers

Working Together to Support All Learners in Mathematics



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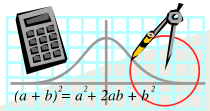
Professional Development in Mathematics



Algebra! Algebra! Algebra!

Connecting the Five Representations

For: Teachers grades 4–12.
Participants will:

- Engage in many rich Algebra problems to see the connections among the five representations (table, verbal, graph, geometric model, and algebraic expression)
- Recognize key mathematical ideas with which their students are grappling by watching videos of children and adolescents.
- Appreciate the power and complexity of student thinking.
- Develop questioning skills that will help students deepen their mathematical understanding.
- Make more mathematical connections, enhancing their ability to help their students do so.

Revisiting Linear Equations

For: Teachers grades 4–12.
Participants will:

- Develop a robust and flexible understanding of linear relationships
- Explore what research says about retaining information – "How ***do*** we help our students remember how to graph a line and solve for linear equations?"
- Obtain rich problems and a variety of strategies to take back to their classrooms.
- Develop an understanding of how students think about different problems through video, transcripts and written student work.
- Engage in effective questioning techniques
- Explore technology (websites and graphing calculators) as a tool to enhance student understanding.
- Create a plan on how to practically implement ideas without "adding more to the plate."

Note: This course consists of 8-10 three-hour sessions. The timeframe and objectives of the workshop can be adjusted to meet the needs of teachers and the district.

Research-Based Teaching Practices in Mathematics

For: Teachers grades K–12.
Participants will:

- Become familiar with current research and how to help students retain information.
- Obtain information on different teaching strategies to reach all learners.
- Engage in rich mathematical tasks as they become more familiar with effective teaching strategies through modeling and participating.
- The strategies will include:
  Alternate response strategies – "How do we hold all students accountable for thinking about and answering questions?"
  - Numbered Heads Together
  - Synectics
  - Make an Appointment
  - Group Poster
  - Many more!

  Vocabulary strategies – "How do we help students understand, use, and remember correct mathematical terminology in a meaningful, engaging way?"
  - VVWA (Verbal Visual Word Association)
  - Talk-a-Mile-a-Minute
  - Many more

Note: This course consists of 1-5 day sessions. The timeframe and objectives of the workshop can be adjusted to meet the needs of teachers and the district.

Note: Teachers may obtain graduate credit(s) by participating in the courses. The course descriptions may be changed to align with the goals of the district or professional development plan. All sessions give teachers time to collaborate with others and an opportunity to be actively involved in the learning process.

Hmmm . . . Is it Really That Simple?

For: Teachers grades K–12
Have you ever wondered why we take the reciprocal of the divisor when we divide fractions? Are we able to draw a picture? When dividing fractions, why does the quotient become larger instead of smaller? Can you represent 2/3 ÷ 1/4 by using pattern blocks?

Why are some students unable to retain important algebraic concepts? What does research say and how can we assist them? Teachers will engage in many situations that will push their understanding of fractions, decimals, percents, mental calculations, operations with integers, and algebraic thinking. Are these concepts *really that simple*?

Note: This course consists of 1-5 day sessions. The timeframe and objectives of the workshop can be adjusted to meet the needs of teachers and the district.

Designing Professional Development Programs

to Meet the Needs of Districts' Goals and Vision for Student Achievement in School Mathematics

Professional development programs are not one-size-fits-all because each district has different needs and visions. Therefore, additional services may be provided upon request. Lori has had extensive experience in the following:

- Assessment
  - Working with teachers to identify their "power standards"
  - Looking at a variety of ways to assess student understanding.
  - Formative and summative assessment
  - Assessment for and of learning
- Effective Questioning Techniques in Mathematics
- Bridging the gaps and addressing the overlaps of concepts taught K-12
- Brain research and effective teaching strategies
- Supporting staff to set up study groups for their schools and/or districts

More information will be given upon request.