

Blue Ribbon Origami

Report of Project
NASA WV Space Grant

Institute for Math Learning
West Virginia University
Morgantown, WV

Laura J. Pyzdrowski
Project Director

December 2004

Report of Project

Blue Ribbon Origami NASA WV Space Grant

Fourteen mathematics educators participated in the Blue Ribbon Origami Workshop September 16, 2004 at West Virginia University (WVU) in the Institute for Math Learning. The workshop/institute was used as a third day of follow-up to the Blue Ribbon Applied Geometry Project funded in part by \$32,394 in Improving Teacher Quality Funds, ITQ - 04-WVU-2 as well as participant registration fees. The purpose of this institute was to provide professional development to mathematics educators, with the specific goal of improving the quality of teaching Geometry. The framework for the Applied Geometry professional development was a week long institute with two follow up sessions. The institute had the following goals:

- ▶ Strengthen technology skills that enhance and are an integral part of the learning of mathematics.
- ▶ Work with activity based examples.
- ▶ Enhance a previously established regional collaborative for both mathematics and special educators teaching similar content.
- ▶ Become more aware of the characteristics and needs of special populations in the geometry classroom.
- ▶ Learn to adapt curriculum and instruction for special populations.
- ▶ Correlate the concepts taught in high school mathematics to real-world applications.
- ▶ Learn from leaders with specialized expertise as well as from peers.

The project director was Dr. Laura J. Pyzdrowski, Ed. D, Assistant Professor of Mathematics in the Institute for Math Learning at West Virginia University. Educational consultants were Dr. Ann Richards, Assistant Professor of Special Education at West Virginia University and Amy Rice, the Special Education Department Chair at Frankfort High School in Mineral County, and Oran Pyle, Professional Development consultant from Key Curriculum Press for the one-day *Origami* follow-up session.

Recruitment of Participants

A announcement was posted on the Blue Ribbon Mathematics Partnership Committee Web Site: www.blueribbon.ws. Blue Ribbon members also recruited participants directly. Blue Ribbon Applied Geometry workshop participants were also recruited. Once all of the Blue Ribbon Applied Geometry affiliated participants were accepted, vacancies were filled on a first come, first to get in basis. Final registration number was 20 with 6 participants not coming the day of the event.

Participants

The following educators participated in the institute:

Anderson, Theresa University High Monongalia	Boden, Gale Frankfort High Mineral	Hileman, Lisa Preston High School Preston
Jackson, Linda Trinity High School Monongalia	Loomis, Karen Preston High School Preston	Marino, Katherine Liberty High Harrison
Meck, Allan Hampshire High Hampshire	Ranieri, Janice Preston High School Preston	Pyzdrowski, Laura WVU
Schleger, Ron Substitute Teacher Monongalia/Garette	Schleger, Betty, WV Geological Survey	Warsinskey, Julie Lincoln High School Harrison
Yoho, Stephanie Substitute Teacher Marion County and WVU graduate student	Yoho, Karen Ann Marion County Technical Center Marion	

Program

Fall 2004: Follow - Up: September 16

Key Curriculum Origami Workshop;

Through origami folding sequences, teachers discovered basic mathematical ideas related to geometry as well as connections between origami and mathematical topics and skills including problem solving, spatial visualization, symmetry, and tessellations through engaging activities. Participants learned to make a variety of unit origami models, and use paper folding as they experienced an age-old art form. They explored teaching strategies that help students intuitively develop their understanding of geometric concepts and created models in a way that can be used to improve spatial, visualization and geometric reasoning skills. Assessment strategies including oral arguments that use appropriate terminology were explored. The one day workshop was held in the Institute for Math Learning in the Mathematics Department at WVU - Morgantown

Evaluation

Key Curriculum Press Evaluations

Each participant was asked to complete Key Curriculum Professional Development evaluation forms (See the appendix for results.)

Summary of Selected/Summarized Evaluation Questions: 11 participants turned these in.

How would you rate the material?	9.9/10
How would you rate the presenter?	9.9/10
How would you rate the overall usefulness?	9.9/10
How would you rate the physical setting?	9.9/10

Workshop Evaluation (13 participants turned these in)

A workshop evaluation form was given at the end of the one day workshop session (See the appendix for results.) This evaluation documented such things as the usefulness of the material in the classroom and its connection to the West Virginia Content Standards and Objectives, the quality of the presenter, and the quality of the facilities. Participants were asked to write a reflective one page paper which will answer the question: “ How will you use the knowledge, skills and materials from this workshop to help your students better understand and do mathematics?”

All of the evaluation instruments indicated that the teachers were very pleased with the institute, the consultants, and the content.

Appendixes

Photos

Key Curriculum Press Evaluations

Workshop Evaluations









