

MBAMP Winter 2015: Conference Common Core Strategies, Connecting Mathematics and the Arts

Session descriptions:

Sessions 1 AND 2 the whole group will attend they not part of the breakout session choices.

1. Hear, See, and Feel Mathematics This workshop is an introduction to **RHYTHM OF MATH**, a kinesthetic approach to basic math usually covered in grades 3-5. It can also be applied to other math content at lower and higher grades. **BODY MUSIC** uses clapping, stepping, and vocalizing to explore patterning and internalize rhythm. In Rhythm of Math, students explore essential math concepts of addition, multiplication, division, and fractions by using their hands, feet and voice in a creative rhythmic experience that engages them mentally and physically.

PRESENTERS: Keith Terry and Linda Akiyama

2. Dancing with Symmetry: Artists as well as scientists often need to perceive, investigate and utilize symmetries in space and time. We will examine the mathematics of symmetry while using open-ended group activities to create a series of movements illuminating different symmetries. These help provide tools to make cross-curricular connections while exploring how to visualize, improvise with, and combine symmetries. Activities like these inspire students by bringing mathematics to a palpable, creative level that uncovers the presence of both mathematics and the arts in a wide range of human endeavors. **PRESENTER: Karl Schaffer**

3. Patterns in Nature and the Golden Ratio (Middle and High School): Help students discover that math is all around them by exploring number patterns in nature starting with the Fibonacci number series. This leads into the Golden Ratio found in nature and used by artists and architects throughout the ages. We will look at many ideas for and examples of lessons in both areas. **PRESENTER: Janet Pence**

4. Tessellations (Middle and High School): Kids love those cool M.C. Escher drawings. Now they can create their own tessellations as they learn/review concepts of symmetry and transformations. We look back at Escher's inspiration in Islamic art, create different types of tessellations, and see how this has inspired other artists.

PRESENTER: Janet Pence

5. Visual arts and math (K-5) (Session will be repeated): You can find math in great works of art and create great works of art using math concepts that you teach. Learn how magic squares make tessellating and symmetrical designs, combine body poses with geometry and see other ways to bring math alive through art.

PRESENTER: Louanne Myers

6. Math Walks (K-12): A Math Walk (sometimes call a math trail) is an exciting way for k-12 students to see the real world through the eyes of mathematics. It is an opportunity to take your students out of the classroom to solve a variety of math problems related to shapes, structures and numbers in their environment. Mathematics is a subject in which we have to create thinkers not memorizers. It is a subject that involves communication, history and literature as well as numbers. With a math walk teachers can provide a forum for their students to talk with each other about their mathematical ideas and give them a place to implement them. In this session you will see examples of k-12 math walk problems and learn how to create one that fits your teaching needs. **PRESENTER Judith Montgomery**

7. Math and Literature (K-12)

Math Fiction is a novel or a short story that includes elements of mathematics as a plot device. In this session you will see a cartoon that uses narrative to explore and deepen understanding of fractions. You will see student work from an ongoing mathematics writing project, math fiction and literature resources k -12, and how math fiction is aligned to the CCSS-M.

PRESENTERS: Julie Egdahl and Judith Montgomery