
The International Interdependence

PAEA 2017, Pittsburgh, PA
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Melissa Cruise, Scranton School District
Friday, October 20, 9:00 - 9:50 AM Elwood II
The Math Behind the Hexagon
What is a Hexagon?  
Definition, Area & Angles
How to Construct a Hexagon
But...there are many ways to construct a Hexagon....
Question: Can you construct a hexagon with an equilateral triangle? How?
In geometry, an **equilateral triangle** is a **triangle** in which all three sides are equal. In the familiar Euclidean geometry, **equilateral triangles** are also equiangular; that is, all three internal angles are also congruent to each other and are each 60°.
Creating a Hexagon inside a Square using a Protractor and Angles

Place point at every 60 degrees

Connect the Dots!
Enlarging an existing Hexagon of ANY size...to ANY size...

Draw 3 intersecting lines,
Extend all 6 angles by an equal length, then connect the dots!
Folding in Half, Creasing and Measuring the Mid-points of of Opposite Quadrants’ Sides, then, Connecting the 6 Reference Points – will give you a Hexagon - but it will NOT be regular

Inside any Square
Paper-folding and Cutting:
Here is an easy way to make a hexagonal piece of paper:
1. Fold a square in half, so it is a triangle, and then Fold the two tips up across each other at about a thirty degree angle as shown below.
2. Think of it as a triangle giving itself a hug.
3. Now you have six layers of paper all folded together and all you need to do is trim the top off in a straight line and unfold.
What IS the Hexagon Project?
The Hexagon Project Uses the Hexagon as Metaphor for Interconnectedness and Interdependence
IF You Believe... It is critical for young people to confront, question and reconsider attitudes and beliefs as part of their responsibilities as citizens, as part of their own personal growth and formation of self...
IF You Believe... that young people throughout the world should have opportunities to explore real-world themes, issues and ideas within schools and communities...
IF You Believe... through creative thinking, research and taking a stand on one's beliefs and understandings, changes of attitudes and action can occur...

Equal Pay
Adelaide, Australia

Fair Trade
Human Rights NEPAL
“Interdependence”
“We may build our own unique lifestyles, careers, or businesses, but those ‘towers’ of success come from cooperation and interdependence with others in our social and professional lives.”

Elsik High School Alief, Texas
Collaborative Clay Sculpture:

*IF You Believe*... the arts are powerful vehicles for this exploration...
Then....
you are ready and invited to join Standards-based Social Justice Concepts and Themes with The Interdependence HEXAGON PROJECT and get hooked on Hexagons
**Interdependence Themes**

*(Hexagon Project)*

**HUMAN RIGHTS** of every person
We are one human family. Examine consumerism vs. having enough
Being more vs. having more

**DIVERSITY**
Freedom for and acceptance of religious, ethnic, backgrounds, cultural identities, abilities.
Personal and group dignity

**COMMONALITIES & IDENTITY**
Having Empathy-
We are similar and share common experiences. We can connect to issues that are personal and local with issues that are global.

**Environment**
We need a safe, sustainable global environment
We are one community
We only have one earth to protect or destroy

**GOVERNANCE**
We need to understand peoples’ rights to govern themselves in a manner that allows them to flourish. Democratic rights and responsibilities.

**Interdependence Goals:**
1. To see ourselves as citizens of one civilized world, recognizing rights and responsibilities to the common goods and liberties of humankind as a whole.
2. To explore these themes through “activist” art-making

**CHILDREN**
We need to protect children’s rights and goods and insure they obtain Safety, Health and Education

**TECHNOLOGY**
Use positively and ethically to create informed global communities
The Theme
The 2018 theme of “Transforming Conflicts” is a call to promote global citizenship, enabling learners to
• Develop an understanding of and make connections among local, national and global issues
• Develop skills for civic literacy such as critical thinking, problem solving, peacebuilding and personal and social responsibility (UNESCO, 2015).

Deadline for Schools is June 30
2017 marked 11 years that the Hexagon Project has been building Social Justice Art Education opportunities for teachers, young people and communities worldwide through the use of a small-yet challenging - downloadable tessellating template, metaphor for Interdependence.

In our September 2017 International Hexagon Project Exhibition, we added another 600 hexagons, making 8600 since 2006.

Connecting with COMMUNITIES

Lackawanna Riverfest

Arts on the Square

Historic Iron Furnaces: Fire and Iron

World Refugee Day
Global Citizenry
Collective Responsibility

“... the notion of being a global citizen is incorporated into every discipline we teach.

The hexagons... helped students to forge cognitive links between the subjects of the hexagons and the major issues in their own lives and the lives of other students around the world. Each shares the common values of health, education and human rights.

This exercise reinforced the notion of collective responsibility and exposed students to the common experiences of humankind as a whole.”

Gene Teeger, Art Teacher

and in classrooms....
Pre-service students in Haiti
Also Egypt, England, Greece, three African countries and Australia
Culminating Exhibition in September

Clockwise from left:
Exterior of 2016 Exhibit,
Interior, showing Scranton School District, bottom, and Australian, top;
Panorama of installation, front;
Grades 9 – 12 wall.
Hexagon Project in Your Community or School?

Abington Heights High School, PA 2016

Scranton, PA 2006 - 2017

Chicago, IL 2013 and 14

Seton Hill University, Greensburg, PA 2016
Recognition Events

Deadline for Schools is June 30
Hexagonal Thinking and Planning
STEAM PLANNING SHEETS

STANDARDS IN ACTION! | PLANNING SHEET

STANDARDS: GRADE 7

STUDENTS IN ACTION!

STUDENTS IN ACTION!

Hexagonal Book Design: Connecting Math, Book Arts and Social Justice

Math Vocabulary:
- Measure: to ascertain the size or amount of something in a set distance, amount, or degree of something or other.

National Art Standards:
- VA.11.1: Choose from a range of materials and methods of traditional and contemporary art practices to plan works of art and design.
- VA.11.2: Through experimentation, practice, and persistence, demonstrate acquisition of skills and knowledge in a chosen art form.
- VA.11.3: Evaluate the effectiveness of an image or image to influence ideas, feelings, and behaviors of specific audiences.
- VA.14.1: Apply a variety of art-making techniques and processes to create art.
The Attribute Attachment technique for creative thinking in groups, like other creative thinking techniques, generates new ideas by asking the minds of the participants to integrate two or more already existing, but previously unconnected, concepts or ideas.

An “attribute” is defined as a quality or characteristic of a person or thing. The Attribute Attachment technique forces the mind to create new ideas by trying to “attach” the attributes of one thing to something else, which is significantly different. In an example of the technique below, human sensory attributes are attached to an otherwise inanimate object, an armchair. Why would anyone want to do such a silly thing? The reason is that, by using this technique, new product designers might come up with several good ideas for new benefits and features for a current product.

Sets of six or more attribute attachment ideas can come from many sources. Human sensory and intellectual capabilities are just one source. Other human attributes like emotional feelings, mobility, self-awareness, and memory are just some of them. Stimulative attribute attachment ideas can also be developed from a class of objects. For example, the “class” might be “Modes of Transport”, and the elements might include racecars, bikes, airliners, limousines, and others.
Hexagonal Book Designing
Accordion-folded Linear Book and Free-form Linear Book
Accordion-folded Free-form Book with “Congruent Clusters”
Accordion-folded Radial Book-Variation on Congruent Clusters
Scoring your hexagon folds

Folded with scoring

Folded without scoring
Covering your Cover.... Make cover cardboard slightly larger than your book.

END PAPERS:
Then, either use the first and last pages of your book as end papers and glue OR use separate hexagon end paper and add a “tab” to connect to your back and front book pages.
Expand Your World- Hexagon Box Project

What is the Hexagon Project? by Christina Martin

Check out this website- http://www.hexagonproject.org

Respond creatively to the many themes of global interdependence-real-world issues-and become a part of an international movement to create a more civil, peace-minded and just world. This project is a meaningful vehicle for allowing young people to think and respond about issues of personal and global importance.

Lesson-Create an Exploding Hexagon Box using Photoshop and a simple three layer grid template. The theme for this assignment is the Hexagon Project as described above. You are to design a box incorporating three distinct layers, each with a different theme.

Layer 1-All about me! You can include images of you, your friends, your hobbies, family, etc.
Layer 2-Issues you are concerned about, worldwide or local.
Layer 3-What can I do to make a change-Images that represent what you can do to make a change for the better.

Collect photos or images from home that you would like to incorporate in this project and bring them in after the Easter break.

Find “Expand Your World” on www.hexagonproject.org and other box ideas on Beth Burkhauser’s Pinterest Site: “ 3-D Hexagonal Sculptures”
Box Lid

Box Layer One
Hexagon Art-STEAM
Brainstorming with a Partner:
5 minutes
STEAM PLANNING SHEETS
Hexagon Art-STEAM
SHARING
5 minutes...AND
5-minute Sharing of Ideas

Thank you!