

Poetry-with-Mathematics Workshop

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Abstract

“Pure mathematics is, in its way, the poetry of logical ideas.” These words of Albert Einstein are often quoted and, indeed, it seems that the ebbs and flows of understanding and emotion as we struggle to create or understand the proof of a theorem are similar to those that accompany creation and understanding of a poem. Today’s workshop will involve participants in exploratory activities that may lead to poems: we will engage in word-play as we mold mathematical ideas into limericks and geometric shapes; we will experiment with the effects of juxtaposition as we build poems from lists of numerical information or mathematical statements; we will develop collaborative poems to which we each contribute a single line.

Workshop Activities – Outline and Samples

Activity 1. Express a mathematical concept using a limerick or geometric shape. Several samples:

Limericks:

When I multiply 5 times 3
the answer always will be—
while we are alive --
same as 3 times 5.
We have commutativity.

When I multiply 1 by any
x, I have fun a-plenty –
for I get x again
(do I need to explain?)--
because 1’s a multiplicative identity.

When it becomes the right time
to factor one hundred and nine
I find no proper divisor
but 1, and grow wiser--
conclude – one-oh-nine is prime

Syllable-Squares:

4x4 When **1** is true
and **n** implies
n+1, we
have induction.

6x6 Verify a statement
S (about n) is true
when n is 1, then prove
its truth for n implies
its truth for n+1--
prove S by induction.

7x7 When you have a statement S
that you want to prove for all
positive integers, then
first prove S for 1, then show
when S is true for n, it’s
also true for n+1—
a proof using induction.

Activity 2. Starting with some numerical information (to be provided by the workshop leader), seek ways to communicate it vividly.

June Jordan singles out the ages of the participants in a scene in her poem “Bosnia, Bosnia”:

the 4-year-old Muslim girl and
her 5-year-old sister
and the 16-year-old babysitter
and the 20-year-old-mother of that 4-year-old / that
Muslim child gang raped
from dawn to dark to time become damnation

Wisława Szymborska measures the passage of time to recreate terror in “The Terrorist, He’s Watching.” Here is the opening stanza:

The bomb in the bar will explode at thirteen twenty.
Now it’s just thirteen sixteen.
There’s still time for some to go in,
and some to come out.
... (and time ticks on, 13:17, 18, 19 ...)

Activity 3. From a list of mathematical statements (to be provided in the workshop), select several of them and arrange into a Cento poem.

A Cento is a collage poem, often made of lines taken from other poems though it also may be formed from newspaper headlines or advertising slogans or whatever. Here's a five-line sample, the lines of which are titles of postings to my blog, "[Intersections – Poetry with Mathematics](#)" during July-September, 2011.

The wind, counting
A thousand and fifty-one waves.
Mathematical theorems tornadoing --
The square root of Everest,
This plane of earthly love.

When statements are placed near one another, even if they are from unrelated sources, their proximity invites us to look for -- and often find -- a relationship among them. Thus a Cento often seems, after the fact, to have deep connection and intentionality.

Activity 4. Together we will build an "Exquisite Corpse" poem from mathematical terminology.

Exquisite Corpse is a method of assembling a poem (or other work of art) to which contributors each add a portion, in sequence, with little or no knowledge of what came before. The composition may be guided by a rule (For example, all contributions might follow the pattern *adjective noun verb noun*) or new contributors might add to a single composition after being permitted to see only the end of a previous contribution.

Here is an small sample Exquisite Corpse formed by four of my friends, using the pattern *adjective noun verb noun* (with pronouns, articles and prepositions used as needed.)

Congruent triangles create poems.
The square square inspired my art.
Crazy circles shape shadows.
Small numbers sum to a life.

As time permits, additional activities will be suggested for interested workshop participants—including snowballs, fibs, abecedarian poems, and others.

References

- [1] JoAnne Growney, Blog, "Intersections – Poetry with Mathematics," <http://poetrywithmathematics.blogspot.com> (accessed 16 April 2012).
- [2] June Jordan, *Kissing God Goodbye* (Anchor Books, 1997).
- [3] Wislawa Szymborska, *View with a Grain of Sand* (Harcourt Brace, 1995).