

February 23, 2015

9:44:51 AM

Inline Math and Science Markup

Introduction

If you find yourself asking the following questions:

What is math class good for?

or

What is science class good for?

Instead ask...

“How can I use math and science to enrich my life?”

and

“Why use math and science to enrich my life?”

Many out there believe that seeking the answers to yesterday's question is the solution of tomorrow, but here at Kip we seek the next question. It is part of our philosophy and should be yours too. One question that is very important that we have discovered is:

“What roles can the web play in contemporary science, math, and engineering?”

The most important things Kip realized about this question are:

- 1.) We need to learn to leverage the web.
- 2.) We need to understand what the web is.
- 3.) We need to understand how to improve web technologies.

If we can do these three things we can better answer and understand what questions we need to ask ourselves next.

Why are science, math, and engineering important? The answer to this is of course written into the original question, to enrich your life.

In popular culture, people have a misconception about how science enriches your life and society. Science isn't an exploding science experiment that produces a wow in the audience; science is in fact a method of coming to a conclusion. The online Merriam-Webster dictionary states the following concerning science:

"Knowledge about or study of the natural world based on facts learned through experiments and observation."

Learning the experimental method's and the skill's necessary to make observations, enriches your life by giving you skills that grow as you do.

The web's role for the future of science, math, and engineering will play a major role in progressing towards a better society.

To get started answering the question stated at the beginning of this article which was, "What roles can the web play in science, math, and engineering," Kip wants to introduce a project which is called Kip Text Vector Graphics or KTVG. It uses a numeric concept which comes from an observation about the web Kip has made. This observation was based off the numeric concepts that run the javascript date object and the numeric color format.

The observation was that each of the formats and objects above used a specific method or set of numbers to calculate and interpret the numeric information and return the correct response. The conclusion I came to was to set up a numeric system that, in a way redefines numbers. The numeric system that KTVG illustrates is based off an, "active numeric system" where each number has a set of rules. In this first beta version I've added the rule that a numeral may grow or decay a static amount per a given iteration.

We have added this ability for only one html tag and only two svg elements to demonstrate the numeric concept in action.

Here is a code example:

```

<article target-object-i="2"
target-instruction-1="
    draw(path,20){
pointsQ[ (+.5|700|,+.5|40|) (+1|770|,-5|0|) (+.2|1070|,-.5|200|)
          (+5|805|,+.6|90|) (+.2|100|,-.5|210|)];
lineColor[ (+0|0|) (+2|100|) (+0|0|) (+.0|.3|) ]-color;
fillColor[ (+0|0|) (+0|0|)(+0|0|) (+.0|.0|) ]*color;
strokeWidth[ (+0|1|) ]-width; }"
target-instruction-2="
    draw(ellipse,20){
xrad[ (-.5|70|) ]_xR;
yrad[ (-.5|70|) ]_yR;
centerX[ (+.5|80|) ]_cX;
centerY[ (+.5|114|) ]_cY;
lineColor[ (-2|255|) (-2|255|) (+0|0|) (+.0|.5|) ]-color;
fillColor[ (+0|0|) (+0|0|)(+0|0|) (+.0|.0|) ]*color;
strokeWidth[ (+0|1|) ]-width; }">
<svg width="1250px" height="1000px"></svg>
</article>

```

The above example is the markup for the concept. If you draw your attention to the bold part you will notice the numeric arguments for the inline string presented. Each numeric argument for coordinates or color can be incremented depending on the values. The meaning of (+1|0|) is the number 0 will have (1*index) added to it for the given iteration. You will find the iteration in the draw() argument as the second parameter.

So if the second parameter for the draw() command was 5 the KTVG number (+1|0|) would have the following values,

$$F(1) = 1*0+0 = 0,$$

$$F(2) = 1*1+0 = 1,$$

$$F(3) = 1*2+0 = 3,$$

$$F(4) = 1*3+0 = 3,$$

$$F(5) = 1*4+0 = 4.$$

The iteration will start from 0 then increment 5 times and output a new value.

There are many advantages to KTVG such as being able to send and receive a tremendous amount of data in a relatively small amount of markup. If you want to learn more please visit our projects site and learn more about the project or contact Kip with your questions.

Project Site: www.kip.org/projects/compsci/markup_index.html

Project Coordinator: kipomaha@gmail.com

Blogged by kip