DANCING POEM – USING POETRY TO TEACH FUNCTIONS

TOPIC: Functions using Poem and Candy Manipulatives

Grade Level /Activating Prior Knowledge

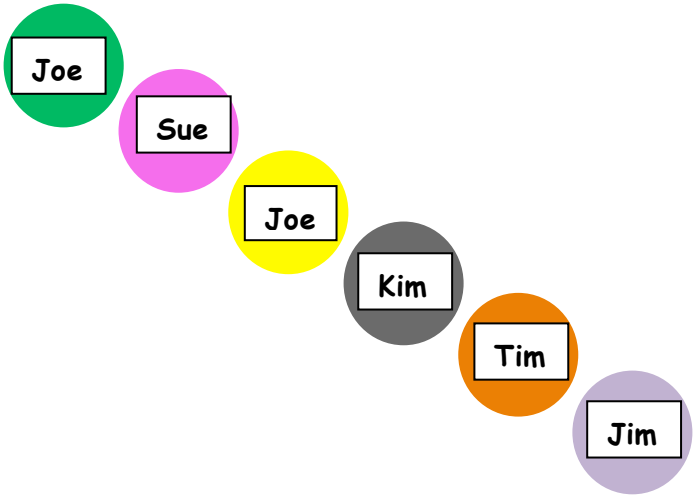
Junior High and beyond/Any student who has a fundamental knowledge of functions and graphing

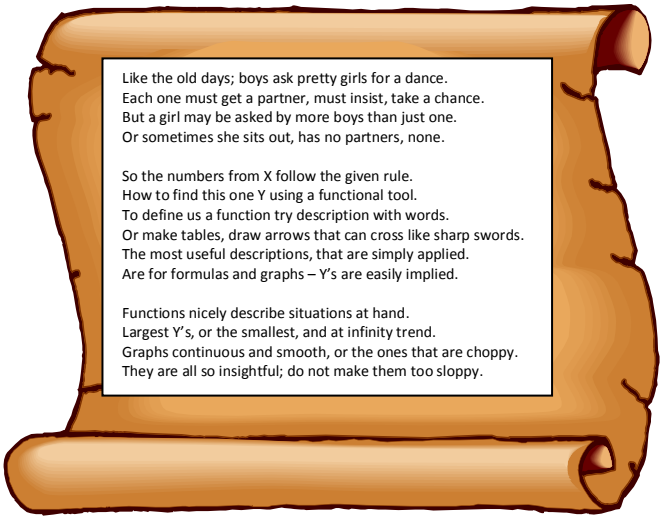
Learning Objective

A hands-on activity with poetry and manipulatives teaching functions. Students will graph functions on a Cartesian plane and identify different function types.

Materials (per student)

- ✓ Worksheet with poem and graphing paper
- ✓ Candy wafers that have been numbered on one side and named (fun idea: use your students' names) on the other side using edible marker.
- ✓ Different color pencils or pens





Like the old days; boys ask pretty girls for a dance.
Each one must get a partner, must insist, take a chance.
But a girl may be asked by more boys than just one.
Or sometimes she sits out, has no partners, none.

So the numbers from X follow the given rule.
How to find this one Y using a functional tool.
To define us a function try description with words.
Or make tables, draw arrows that can cross like sharp swords.
The most useful descriptions, that are simply applied.
Are for formulas and graphs – Y's are easily implied.

Functions nicely describe situations at hand.
Largest Y's, or the smallest, and at infinity trend.
Graphs continuous and smooth, or the ones that are choppy.
They are all so insightful; do not make them too sloppy.

Lesson Plan

1. Give each student a worksheet. Have students read the poem above. Have the students graph the different types of functions represented in the poem using the candy wafers on the Cartesian plane. Have the students use different color pencils or pens to trace each of those functions.
2. Have each student graph an increasing function using the candy wafers on the Cartesian plane.
3. Have each student graph a decreasing function using the candy wafers on the Cartesian plane.

Challenge

Ask students to graph these four graphs $y = x - 3$, $2x + 2y = 4$, $2x^2 + 5x - 3 = y$ and $4x^3 + 2 = y$. Similar questions are the challenge part of the test.

Activity

DANCING POEM – USING POETRY TO TEACH FUNCTIONS

Materials you should have

- ✓ Worksheet with poem and graphing paper
- ✓ 20 Candy wafers
- ✓ Different color pencils or pens

Like the old days; boys ask pretty girls for a dance.
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But a girl may be asked by more boys than just one.
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Activity

Set A:

Read the poem above. Using the candy wafers, graph the functions described (i.e., continuous function, smooth function, choppy function) on the graphing paper. Using the color pencils, draw those functions onto the paper.

Set B:

Using the candy wafers, graph an increasing function. Using the color pencils, draw that function onto the paper.

Set C:

Using the candy wafers, graph a decreasing function. Using the color pencils, draw that function onto the paper.

Challenge

Graph $y= x- 3$, $2x + y = 4$, $2x^2 + x – 3 = y$ and $4x^3 + 2 = y$. Which graphs are functions, which aren't?