Activity Name:	Forth Bridge
Picture:	Forth Road Bridge edited
Settings:	[0, 20] by [0, 10]

List as Points:

Points $(0, 7.3)$ $(2, 6.4)$ $(4, 5.6)$ $(6, 4.8)$ $(8, 4.1)$

$(10, 3.4)$ $(12, 2.8)$ $(14, 2.3)$ $(16, 1.8)$ $(18, 1.4)$ $(20, 1.1)$

Students Contribute: Exponential function that "matches" the points between the cables.

Activity File: Forth Bridge.act

Solution:

Exponential $\quad y = 7.5(0.92)^x$

Quadratic $\quad y = 0.011(x-24)^2 + 1$

Activity Name:	PJHS Stairs 1
Picture:	PJHS Staris 1
Settings:	[-10,10] by [-2, 7]
List as Points:	Points $(0, 4)$ $(0, 6)$ $(6, 1)$ $(6, 3)$
Students Contribute:	Linear functions that match the two mortar rows.
Activity File:	PJHS Stairs 1.act

Solutions:

$$f(x) = -\frac{1}{2}x + 4$$

$$g(x) = -\frac{1}{2}x + 6$$

Activity Name:	Treadmill
Picture:	Heart Rate edited
Settings:	[-37,140,10] by [-1,215,23]

List as Points:

Points $(10, 189)$ $(10, 116)$ $(10, 152.5)$

$(20, 180)$ $(20, 110)$ $(20, 145)$

Students Contribute: Three Linear Functions

Activity File: Trendmill.act

Solutions: $\quad y = -\dfrac{9}{10}x + 198 \quad y = -\dfrac{6}{10}x + 122 \quad y = -\dfrac{7.5}{10}x + 160$

Comments: These equations are based on the data. They don't fit nicely.

Activity Name:	PJHS Stairs 4
Picture:	PJHS Stairs 4
Settings:	[-4,13.5] by [-4, 5]
List as Points:	Points $(-2, -3)$ $(-4, 5)$
Students Contribute:	Linear function that match the top of bricks.
Activity File:	PJHS Stairs 4.act
Solutions:	$y = \dfrac{1}{2}x - 2$

Activity Name:	Double Gable Dormers
Picture:	Double Gable Dormers
Settings:	[-8,8.3] by [-2.5, 7]
List as Points:	Points $(3, 5)$ $(1, 3)$ $(5, 3)$ $(-4, 5)$ $(-2, 3)$ $(-6, 3)$
Students Contribute:	Absolute Value functions that match the gable dormers.
Activity File:	Double Gable Dormers.act
Solutions:	$y = -|x-3| + 5$ $y = -|x+4| + 5$

Activity Name:	U of M Logo
Picture:	U of M Logo
Settings:	[-4,15] by [-4.2,4.2]
List as Points:	Points $(5, 1)$ $(8, 4)$ $(2, 4)$ $(5, -2.5)$ $(8, 0.5)$ $(2, 0.5)$
Students Contribute:	Absolute Value functions that mirror U of M Logo
Activity File:	UofMLogo.act
Solutions:	$y = |x-5| + 1$ $y = |x-5| - 2.5$

Activity Name:	U of W Logo
Picture:	U of W Logo
Settings:	[-10,10] by [-5,5]
List as Points:	Points $(0, 0)$ $(-1, -3)$ $(1, -2)$ $(-2.3, -2)$ $(3.6, -2)$ $(-6, 0)$ $(-5, -3)$ $(6, 0)$ $(5, -3)$
Students Contribute:	Absolute Value functions that mirror U of M Logo
Activity File:	U of Wash Logo.act
Solutions:	$y = -3|x|$ $y = 3|x+2.3| - 2$ $y = 3|x-3.6| - 2$
Extension:	Write equations of lines for outside. Find the intersection

Activity Name:	McDonalds Arch
Picture:	McDonalds Double Arch
Settings:	[-12, 20] by [-10, 10]
List as Points:	Points $(0, 5)$ $(-1, 7)$ $(-10, 0)$ $(10, 0)$ $(1, 7)$
Students Contribute:	Two quadratic functions
Activity File:	McDonalds Arch.act
Solutions:	$$y = -\frac{5}{18}\left(x+\frac{41}{10}\right)^2 + 10$$ $$y = \frac{5}{18}\left(x+\frac{41}{10}\right)^2 + 10$$

Activity Name:	Golden Gate 1
Picture:	Golden Gate 1
Settings:	[-16, 16] by [-10, 10]
List as Points:	Points $(8.5, 0)$ $(0, 3)$ $(-8, 7)$ $(14, -1)$
Students Contribute:	One quadratic function that places a parabola between the cables of the Golden Gate Bridge
Activity File:	Golden Gate 1.act
Solutions:	$y = 0.013(x-17)^2 - 1$

Activity Name:	World Sunlight 1
Picture:	World Sunlight 1
Settings:	[-10,10.1] by [-5.5, 1]
List as Points:	Points $(0, -2)$ $(9, 3)$ $(10, 2)$ $(-4, -4)$ $(-8, -1)$ $(6, 4)$
Students Contribute:	Equation to fit sunlight pattern
Activity File:	World Sunlight 1.act
Solutions:	$$y = 4\sin\left(\frac{\pi}{10}(x-1)\right)$$