Curriculum Sample Template

Max. 8 Pages

Grade Level	8th	**Content Area**	Math
Course Title (grades 9-12 Only)			
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Independent and dependent variables. Cartesian coordinates. How to read associations in charts. Linear relationships in mathematics and science. How to take scientific measurements with a ruler.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	Analyzing data and relationships between variables are cornerstones of STEM curriculum. Kagan cooperative group strategies (homogenous groups individual white boards, gallery walks) are used and each lesson includes Marzano high yield strategies (objective driven vocabulary)		
Standard Number and Description *List the Number* and the full description for the Required Standard or Science Performance Objective listed in section A.6.*	8.SP.2 Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.		
Materials/Resources Needed	Mimeo board. Individual whiteboard. Students will need access to the internet for blended learning lessons.		

* ***Standard Number****: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

Lesson (add as needed)	**Instructional Strategies**	**Student Activities**

1	**Objective**: Students will ("SW") plot the data set of two variables on a scatter plot and determine if the data is correlated **Key Points**: • y-axis is the dependent variable • x-axis is the independent variable • correlation: A mutual relationship or connection between two or more things. **Activation of Prior Knowledge:** Teacher will ("TW") ask student to draw a coordinate plane in their interactive notebooks. TW ask students to label each axis. **Blended Lesson**: http://www.youtube.com/watch?v=9Iw3a_LtJVE **Introduction to New Material ("INM")/Modeling**: TW introduce key points and provide scatter plot questions on the Mimeo board. Teacher will use a "think out loud" exercise to introduce scatter plots and correlated data. **Guided Practice:** SW participate in a centers exercise. TW set up each center with a different example of a large data points. SW work in homogenous groups, changing from center to center, creating scatter plots that fit the data and determine if the data is correlated. TW ask multiple checks for understanding ("CFUs"; call on non-volunteer to restate instructions, ask students to define key points in their own definitions, ask student to reteach their neighbor) to ensure sufficient progress. **Independent Practice**: TW provide students with multiple scatter plot charts and SW determine if the data is correlated. **Assessment**: TW put an exit ticket question on the Mimeo board with unorganized data. SW organize the data, plot on a scatter plot, and determine if the data is correlated. SW turn in the exit ticket on the way out of class.	SW open their interactive notebooks to a new page and write the objectives and key points on top. SW highlight new vocabulary, write the definitions from their math glossary, and rewrite the definitions in their own words. SW quietly draw a coordinate plane, similar to last lesson. SW watch the blended learning video and write down the example chart from the video. SW open their interactive notebooks and write down teacher examples and any questions left unanswered. SW write the results of the think out loud and any scatter plots also introduced. SW work quietly in homogenous groups. SW quietly change from center to center, creating scatter plots that fit the data, and ask clarifying questions when necessary. SW complete the independent practice section about correlated data on scatter plots and ask clarifying questions when necessary SW complete the assessment exit ticket exercise.
2	**Objective**: SW draw a line of best fit (trend line) on correlated data **Key Points**: • A line of best fit helps you make predictions about future events and identifies potential relationships between variables. **Activation of Prior Knowledge:** TW ask student to draw a scatter plot of correlated data in their interactive notebooks. TW ask students	SW open their interactive notebooks to a new page and write the objectives and key points on top. SW highlight new vocabulary, write the definitions from their math glossary, and rewrite the definitions in their own words. SW quietly draw a scatter plot, similar to last lesson.

	to label each axis as independent or dependent. **Blended Lesson**: http://www.youtube.com/watch?v=9Iw3a_LtJVE **INM/Modeling**: TW introduce key points and provide trend line questions on the Mimeo board. Teacher will use a "think out loud" exercise to introduce trend lines on correlated data and what to do when data is not correlated. **Guided Practice:** SW participate in a whiteboard exercise. TW pass our whiteboards to each student. SW use the whiteboard to either draw a trend line for correlated data of write "no relationship" on their whiteboards if no relationship exists. TW ask multiple CFU's (call on non-volunteer to restate instructions, ask students to define key points in their own definitions, ask student to reteach their neighbor) to ensure sufficient progress. **Independent Practice**: TW provide students with scatter plots used in yesterday's independent practice. SW write in the trend lines/lines of best fit. **Assessment**: SW look at their trend lines and the scatter plots completed in previous classes and write a journal entry detailing why the data is correlated and why the trend line identifies this correlation.	SW watch the same blended learning video as last class, yet this time will take special note of the lines of best fit introduced. SW open their interactive notebooks and write down teacher examples and any questions left unanswered. SW work quietly during the whiteboard exercise. SW also label each side of their axis as independent and dependent to retain knowledge from last lesson SW complete the independent practice section and ask clarifying questions when necessary SW complete the assessment exit ticket exercise. SW journal about trend lines and correlated data.
3	**Objective:** SW judge the closeness of data points to a line and determine which data set has higher correlation value **Key Points**: • The "line" is a trend line representing a linear association • Correlation value means an implied close relationship between two variables. **Activation of Prior Knowledge:** TW ask student to draw a trend line of correlated in their interactive notebooks. TW ask students to label each axis as independent or dependent. **INM/Modeling**: TW introduce key points and provide trend line and correlation questions on the Mimeo board. Teacher will introduce the concept of "closeness" as proximity from the data points to the trend line. **Guided Practice:** SW participate in a "gallery walk" exercise. SW walk around the classroom, noting multiple examples of correlated data, and measure which data points are closer to the trend line using a ruler. TW ask multiple CFU's (call on non-volunteer to restate instructions, ask students to define key points in their own definitions,	SW open their interactive notebooks to a new page and write the objectives and key points on top. SW highlight new vocabulary, write the definitions from their math glossary, and rewrite the definitions in their own words. SW quietly draw a line of correlated data, similar to last lesson. SW identify the independent and dependent axis. SW open their interactive notebooks and write down teacher examples, draw charts and trend lines. SW work quietly during the gallery walk exercise. SW manage their rulers appropriately and take accurate scientific measurements

	ask student to reteach their neighbor) to ensure sufficient progress. **Independent Practice**: TW provide students with a large piece of paper containing a chart. SW measure the closeness to the line and journal about which variables are more closely related based on their measurements. **Assessment**: SW take a quiz, each question will ask students to determine which data set has a closer relationship. 10 questions, 1 point each. Must achieve 80% or better to master the objective.	SW complete the independent practice section, show proper ruler etiquette, and journal appropriately. SW complete the assessment quiz to the best of their ability.
4	TW instruct students to complete the summative assessment.	SW complete the summative assessment.

Summative Assessment Items: *Attach here.* For each summative assessment item, include an answer key or scoring rubric describing how points are to be awarded.

Two points each.

Graph the data and determine if the data is correlated (yes/no)

1.

Dogs (#)	Complaints
2	2
3	5
4	10
5	17
6	27

2.

Presents (#)	Smiles (#)
1	5
2	15
3	20
4	28
5	35

3.

Accidents (#)	Quality of Life
1	80
2	75
3	65
4	54
5	44
6	32

If the data is correlated, draw a line of best fit to show the relationship between the two variables.

4.

Taxes	Smiles (#)
10	35
20	20
30	10
40	5
50	2

5.

Children	Disposable Income
1	80
2	75
3	65
4	54
5	44
6	32

6.

Crime	Shoes
4	13
6	8
7	11
9	14
10	5

Plot the data set. Choose the data set that is more correlated.

7.

Hours Studying	High Grades		Recess Time	Kids in Detention
1	1.8		15	1
1.5	2.2		30	3
2	3.5		45	6
2.5	4.5		60	9
3	7		75	12
3.5	8		90	20
4	10			

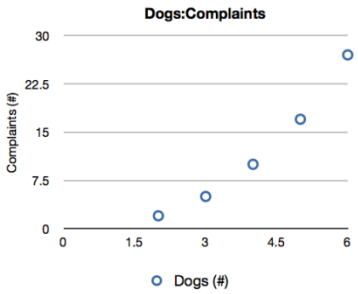
8.

Hit Singles	Income		News Read	Depression
1	100		2	5
2	130		4	9
3	140		6	12
4	145		8	17
5	150		10	19
6	160		12	25

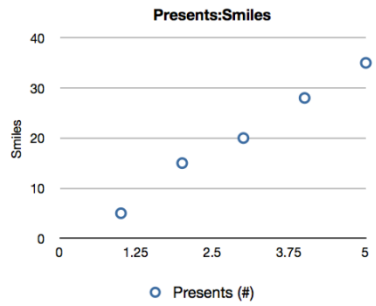
9.

High Grades	Mother's Anger		Books Read	IQ
2	50		12	100
3	35		15	110
4	20		20	125
5	15		25	134
6	12		30	146
			40	167

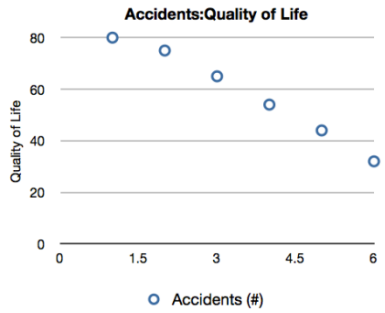
Answer Key:

1. 

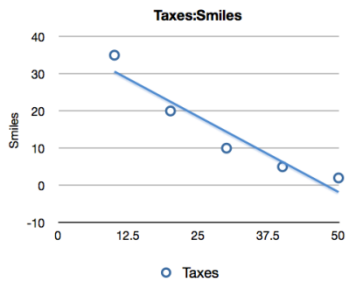
Yes, correlated

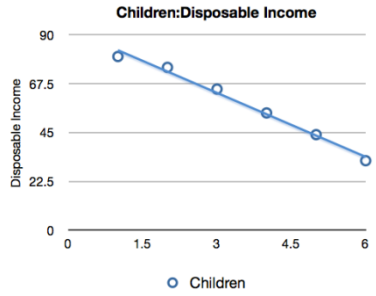
2. 

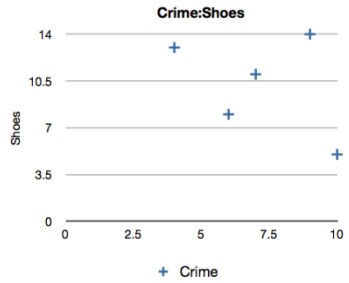
Yes, correlated

3. 

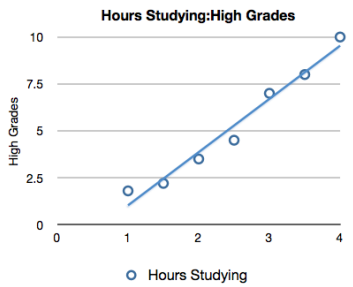
Yes, correlated

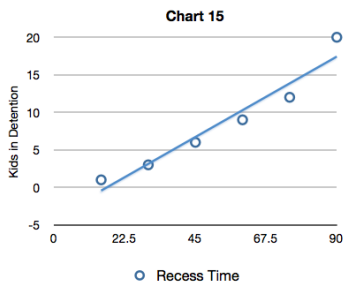
4. 

5. 

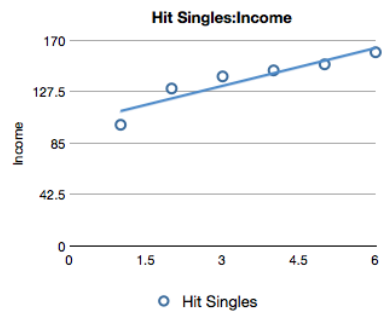
6. 

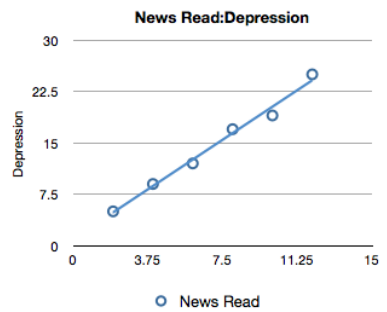
Data not correlated



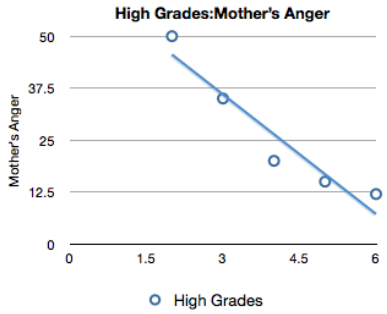


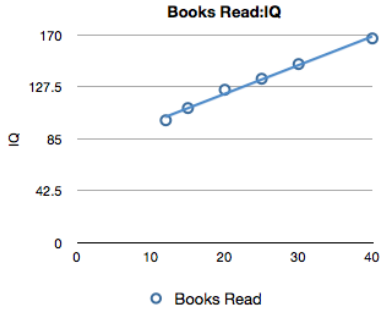
7. Chart 1 is more correlated.





8. Chart 2 is more correlated.





9. Chart 2 is more correlated

Total: _____/18; Grading Scale: 0-13=Incomplete; 14=C; 15-16=B; 17-18=A. 80%=Mastery.