Grade 8 Math C1 TJ

Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.	
Content Domain: **Statistics and Probability**	
Target J [s]: Investigate patterns of association in bivariate data. (DOK 1, 2) Tasks for this target will often be paired with 8.F Target F and ask students to determine the rate of change and initial value of a line suggested by examining bivariate data. Interpretations related to clustering, outliers, positive or negative association, linear and nonlinear association will primarily be presented in context by pairing this target with those from Claims #2 and #4.	
Standards:	8.SP.1, 8.SP.2, 8.SP.3, 8.SP.4
DOK Target(s):	1, 2
Evidence Required:	1. The student constructs and interprets scatter plots for bivariate measurement data to investigate patterns of association between two quantities. 2. The student describes patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. 3. The student informally fits a straight line to data in scatter plots that suggest a linear association. 4. The student informally assesses the fits of linear models to data in scatter plots by judging the closeness of the data points to the lines. 5. The student determines and interprets the rate of change and initial value of a line suggested by examining bivariate measurement data. 6. The student constructs and interprets a two-way table summarizing data on two categorical variables collected from the same subjects. 7. The student describes a possible association between the two variables in a two-way frequency table by using relative frequencies calculated for rows or columns in the table.
Allowable Item Types*:	SR, CR, TE
Task Models:	1. SR (DOK 2) **Prompt Features:** The student is prompted to identify correct interpretations of scatter plots of bivariate measurement data. **Stimulus:** The student is presented with a scatter plot of bivariate measurement data. 1. CR (DOK 2) **Prompt Features:** The student is prompted to interpret scatter plots of bivariate measurement data.

	Stimulus: The student is presented with a scatter plot of bivariate measurement data. 1. TE (DOK 2) **Prompt Features:** The student is prompted to construct scatter plots of bivariate measurement data. **Stimulus:** The student is presented with bivariate data. **Interaction:** The student uses a graphing tool to plot points on a coordinate plane. 2. SR (DOK 2) **Prompt Features:** The student is prompted to identify correct descriptions of patterns in data. Or the student is prompted to identify scatter plots that demonstrate given descriptions of patterns in data. **Stimulus 1:** The student is presented with data displayed in a scatter plot. **Stimulus 2:** The student is presented with descriptions of patterns in data. 2. CR (DOK 2) **Prompt Features:** The student is prompted to describe patterns in data. **Stimulus:** The student is presented with data displayed in a scatter plot. 2. TE (DOK 2) **Prompt Features:** The student is prompted to construct scatter plots that demonstrate given patterns. **Stimulus:** The student is presented with descriptions of patterns in data. **Interaction:** The student uses a graphing tool to plot points on a coordinate plane. 3. SR (DOK 2) **Prompt Features:** The student is prompted to identify a straight line which is the best fit to data in a scatter plot that suggest a linear association. Or the student is prompted to identify sets of data that suggest linear associations. **Stimulus 1:** The student is presented with a set of data with different lines of best fit drawn through the data. **Stimulus 2:** The student is presented with different sets of data, not all of which suggest linear associations. 3. TE (DOK 2) **Prompt Features:** The student is prompted to informally fit a straight line to data in a scatter plot that suggest a linear association. **Stimulus:** The student is presented with data in a scatter plot that suggest a linear association. **Interaction:** The student uses a tool that draws a line through

	the data, possibly by drawing the line through two selected points. The line could have a set slope, a set *y*-intercept of 0, or both could be allowed to fluctuate. 4. CR (DOK 2) **Prompt Features:** The student is prompted to informally assess the fit of a straight line to data in a scatter plot. **Stimulus:** The student is presented with a set of data in a scatter plot with a straight line drawn through the data. 5. SR (DOK 2) **Prompt Features:** The student is prompted to identify the rate of change and/or initial value of a line demonstrated by a set of bivariate measurement data. Or the student is prompted to identify data with a linear model that demonstrates a given slope and/or intercept. Or the student is prompted to identify correct interpretations of the slope and/or the intercept of a linear model in the context of bivariate measurement data. **Stimulus 1:** The student is presented with a set of bivariate measurement data. **Stimulus 2:** The student is presented with a given slope and/or intercept and then asked to determine the data that matches the information given. **Stimulus 3:** The student is presented with a linear model in the context of bivariate measurement data. 5. CR (DOK 2) **Prompt Features:** The student is prompted to determine the rate of change and/or initial value of a line demonstrated by a set of bivariate measurement data. Or the student is prompted to interpret the slope and/or the *y*-intercept of a linear model in the context of bivariate measurement data. **Stimulus 1:** The student is presented with a set of bivariate measurement data. **Stimulus 2:** The student is presented with a linear model in the context of bivariate measurement data. 6. SR (DOK 1, 2) **Prompt Features:** The student is prompted to identify or complete a two-way table that correctly summarizes given information. Or the student is prompted to identify correct interpretations of two-way tables. **Stimulus 1:** The student is presented with data on two categorical variables. **Stimulus 2:** The student is presented with a two-way table. 6. CR (DOK 2) **Prompt Features:** The student is prompted to create or complete a two-way table that correctly summarizes given data. Or the student is prompted to interpret two-way tables. **Stimulus 1:** The student is presented with data on two

	categorical variables. **Stimulus 2:** The student is presented with a two-way table. 7. SR (DOK 2) **Prompt Features:** The student is prompted to identify a correct description of the association between the two variables in a two-way table. Or the student is prompted to identify a two-way table that matches a given description of the association between the two variables represented in the table. **Stimulus 1:** The student is presented with a two-way table. **Stimulus 2:** The student is presented with a description of the association between the two variables represented in a two-way table. 7. CR (DOK 2) **Prompt Features:** The student is prompted to describe the association between the two variables in a two-way table. **Stimulus:** The student is presented with a two-way table.
Allowable Stimulus Materials:	Data, scatter plots, two-way tables, interpretations of data, information about the patterns of data
Allowable Disciplinary Vocabulary:	Scatter plot, two-way table, bivariate measurement data, clustering, outliers, positive association, negative association, linear association, nonlinear association, line of best fit, slope, *y*-intercept, frequency, relative frequency, categorical variables
Allowable Tools:	Calculator, graphing software
Target-Specific Attributes	
Key Nontargeted Constructs:	
Accessibility Concerns:	
Sample Items:	

*SR = selected-response item; CR = constructed-response item; TE = technology-enhanced item; ER = extended-response item; PT = performance task