

Statistics Post-Test

Juniors

Bivariate Investigation

Year: (circle) 9 10

Name: _____

Tutor Group: _____

Teacher: _____

Problem

I wonder if there is a relationship between a students' foot length and hair length?

Plan

State what the two variables you are investigating are.

Then write a detailed plan of how you are going to take these measurements.

Measure Variable 1: _____

Plan:

[illegible]

Measure Variable 2: _____

Plan:

[illegible]

[illegible]

Data

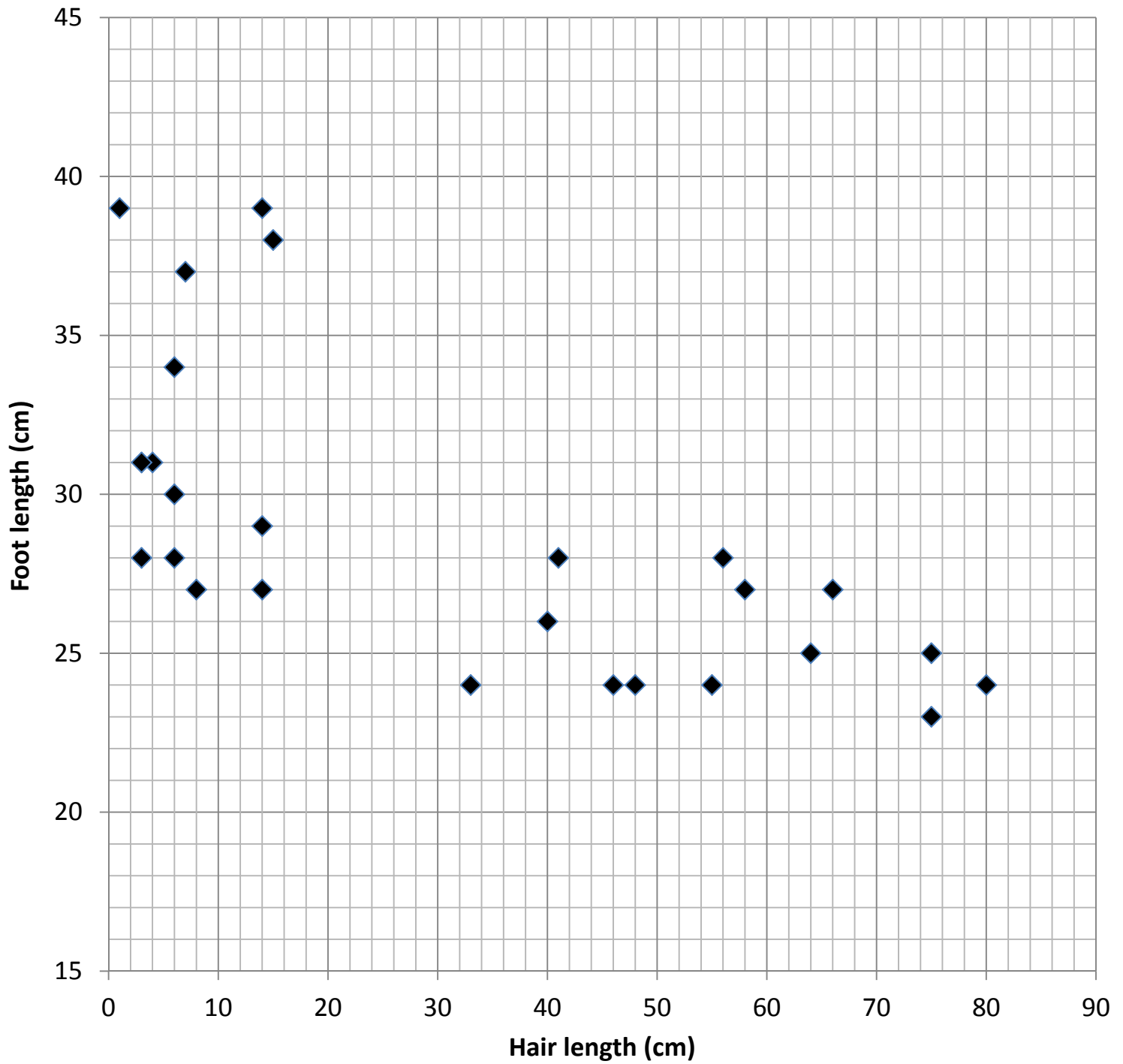
Measure and record data for 4 students in your class.

Sample	Hair length	Foot Length	Sample	Hair Length	Foot Length
1			16	39	17
2			17	56	22
3			18	41	21
4			19	59	17
5	1	24	20	52	20
6	10	29	21	43	15
7	7	24	22	33	21
8	10	30	23	57	21
9	2	27	24	56	20
10	3	23	25	51	21
11	10	30	26	52	21
12	5	29	27	46	15
13	7	25	28	57	22
14	3	30	29	5	30
15	8	28	30	7	27

Analysis

Add your 4 measurements to the scatterplot below.

Add a line of best fit to your data.



Analysis

Describe the relationship. This may include the strength, direction and type of relationship. Justify your description.

[illegible]

Conclusion

Answer the investigation question.

Discussion of sampling variability (taking another sample, changing sample size, etc.)

Bivariate Assessment for: _____

	Level 2	Data		Collect and record several measurements
		Conclusion		Answer the question.
	Level 3	Analysis		Data added correctly to the scatterplot
		Conclusion		Answer question in context
	Level 4	Plan		Variables stated correctly
				A simple plan for collecting measurements
		Analysis		Draw an approximate line of best fit
	Level 5	Plan		Units for both variables stated
				Sources of variation considered in plan
		Analysis		State 2 features
	Level 6	Plan		Justify measures, discuss sample size, or describe sample or population
				Manage variation when measuring
		Analysis		3 features stated in context
				3 features justified
		Conclusion		Population described
				Statistical variability discussed

Comments:

Example answers

	Level 2		Data
There is a relationship between the variables		Collect and record several measurements	Conclusion
		Answer the question.	
There is a relationship between the length of hair and foot length		Data added correctly to the scatterplot	Analysis
		Answer question in context	Conclusion
Measure foot length from heel to toe. Measure hair length from root to tip.		Variables stated correctly	Plan
		A simple plan for collecting measurements	
		Draw an approximate line of best fit	Analysis
Both variables measured in cm or mm		Units for both variables stated	Plan
Get students to take shoe off. Have foot flat on the floor. Pull a piece of hair off our head and lay it flat to measure		Sources of variation considered in plan	Analysis
Strength – strong, moderate, weak. Direction – positive, negative. Type – linear, non-linear		State 2 features	
Sample size of 30. Population includes people from NZ, covering young to older people. Sample includes teenagers.		Justify measures, discuss sample size, or describe sample or population	
Measurements are accurately taken		Manage variation when measuring	Plan
		3 features stated in context	Analysis
		3 features justified	
Discussion on the population which the conclusion applies to		Informal inference	Conclusion
Sampling variability discussion		Statistical insight	