Footprints on the Road Level 1, Sample 1

A

Table of Values

Foot size	Stride length
25	54
28	73
22	67
23	50
21	48
27	64
23	43
27	45
22	43
27	38
28	46
26	50
28	49
26	65
27	40
24	54
28	73
23	52
32	77
27	54
27	49
26	65

B

The relationship between foot length and stride length

b) My hypothesis is that if you have big feet you will have a big stride length.

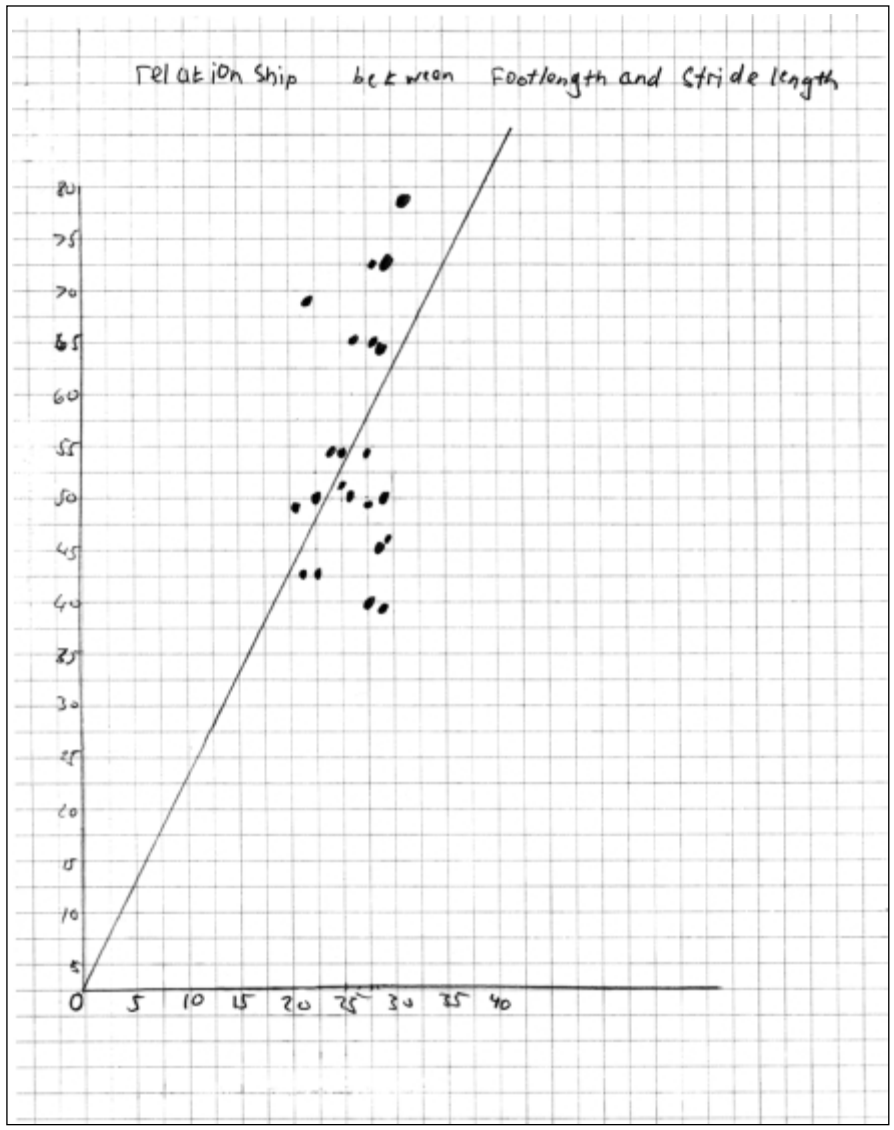
Something that would affect it would be a short person, male or female, and size of shoes.

2b)
- all the information is close together.
- most of the kids in the class are close together in foot length but some people are taller than others.

My hypothesis was correct. Someone with big feet will have a big stride length.

Another relationship would be height depending on footsize. Tall people are gonna have big feet.

C



Teacher's Notes

Knowledge/Understanding

- The student provides a hypothesis that demonstrates a limited understanding of the spectrum of the relationship (e.g., hypothesizes that "if you have big feet you will have a big stride length", with no mention of the range "bigger" or its opposite "smaller").
- The student states factors with limited explanation (e.g., uses "size of shoes" to imply the size of the feet and "male or female" to imply the difference between genders in overall size that results in different stride lengths).

Thinking/Inquiry/Problem Solving

- The student describes the dispersion of the data with limited accuracy (e.g., uses "close together" as a description of the trend).
- The student provides limited detail in the argument for the pieces of data that do not fit the trend (e.g., "some people are taller than others" addresses one type of outlier but does not describe the effect of outliers in the relationship).
- The student's explanation of the relationship in the conclusion restates the hypothesis with limited detail, and omits any reference to the data (i.e., the table of values or the graph), any mention of a spectrum, and any provision for predictability.

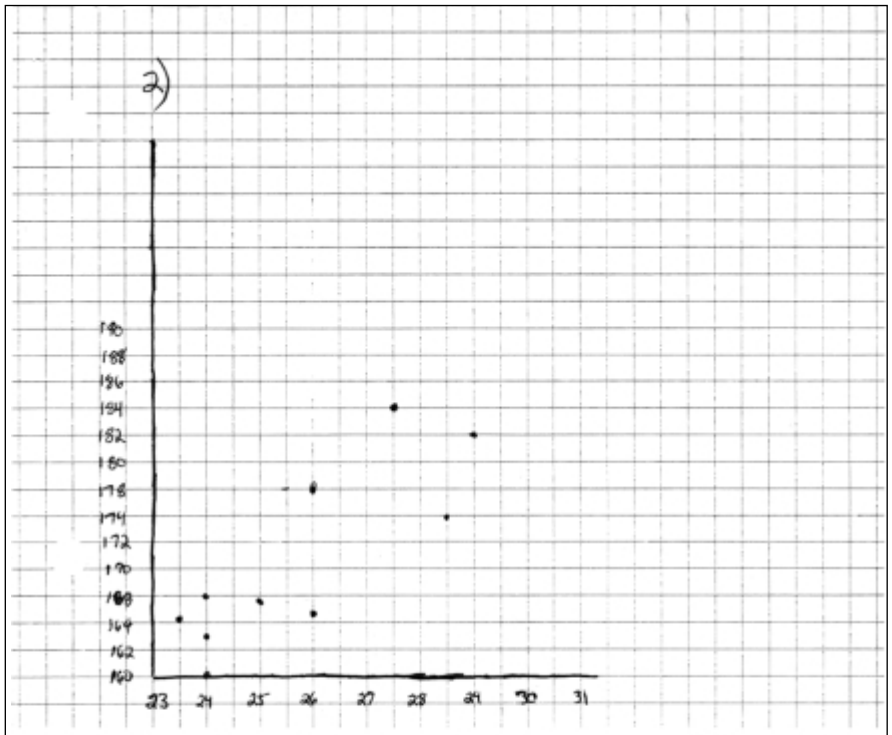
Communication

- The student demonstrates limited organization and clarity in reasoning (e.g., the lack of logical sequence and layout contributes to a lack of flow; the graph is not with the table of values; the steps are not numbered in sequence).
- The student demonstrates limited skill in the use of proper form when communicating graphically (e.g., shows limited accuracy in the plotting of points; constructs an inaccurate *y*-axis; omits the scale and the labels or units).

Application

- The student identifies a realistic relationship but provides limited detail in explaining the importance of studying the relationship (e.g., "Tall people are gonna have big feet").

A



b) The data is all over the place.

B

The Ontario Curriculum
Exemplars Project

Problem:
What affect does footsize have on height?

Hypothesis:
If your foot size is big then your height will be high.

2b) As the height goes up, so does the footlength

3. My conclusion is in 2b. If they have big feet then they could guess there height.

4. One relationship is age and weight because if you were born short and overweight you have a chance of becoming old and fat.

C

Exemplars Project - Grade 9

DATA COLLECTION:

Relationship:

Student	Foot Length	Height
Tori	25 cm	167 cm
Tiff	24 cm	163 cm
Phil	27.5 cm	184 cm
Mike	28.5 cm	174 cm
Mel	23.5 cm	165 cm
Jenn	24 cm	153.5 cm
Riley	26 cm	165 cm
Cody	29 cm	182 cm
Tim	26.5 cm	178.5 cm
Erin	24 cm	168.5 cm

When collecting data, we need to:

be consistent
be precise

Teacher's Notes

Knowledge/Understanding

- The student makes a hypothesis about the investigation but demonstrates a limited understanding of a relationship (e.g., gives no indication of exceptions to the rule "If your foot size is big then your height will be high").
- The student refers to factors that might affect the validity of the data (e.g., "be consistent", "be precise") but provides limited explanation of their importance.

Thinking/Inquiry/Problem Solving

- The student describes, with limited accuracy and detail, the dispersion of the data collected.
- The student states the trend and the conclusion, providing only limited detail in his or her argument.

Communication

- The student demonstrates limited reasoning in reporting (e.g., presents the graph first and the data table at the end).
- The student communicates graphically, demonstrating limited skill in the use of proper form (e.g., does not present one of the data points, because of the range chosen).

Application

- The student states a realistic relationship with limited and unclear detail as to its importance.

Comments/Next Steps

- The student should include labels, titles, and units when constructing graphs.
- The student could reorder various parts of the report to reflect improved reasoning.
- Throughout the report, the student must provide more explanation and detail.