Sweaty Maths

Name:

Introduction

Technology allows scientists to collect more data than ever on athletes. In order to best communicate the trends to athletes, scientists display the data on graphs. This activity demonstrates how a scientist uses graphs to display the trends in a data set so it is easier for athletes and coaches to understand.

Sweat lost

The following table shows the amount of sweat lost by an athlete during a one hour training session:

Time (min)	10	20	30	40	50	60
Sweat lost in previous ten minutes (ml)	83	185	354	294	222	147
Cumulative total (ml)	83	268				

1. Complete the cumulative total row of the table.

2. Display the data in the table by creating the following graphs in excel:
   a. Column graph to display the sweat lost in previous ten minutes of exercise. 'Column Graph Link'
      This QR code takes you to a how to create a column graph using excel video.

   b. Line graph to display the cumulative total of sweat lost during exercise. 'Line Graph Link'
      This QR code takes you to a how to create a line graph using excel video.

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3. Which of the graphs:
   a. Best displays when the highest rate of sweat was being lost?

   b. Would be most useful in informing the athlete how much fluid they should drink at any given time during the workout?

4. Use the graphs to describe the trend in the data (tell the story of the graphs).

5. What are two conclusions someone could make in relation to the intensity of the athletes workout by looking at the sweat graphs.

6. Explain why a scientist would choose to display data on a graph rather than in a table.

Further task

Another scientist suggested that the data from this test would be better displayed as a histogram. Research how to display the data in the table as a histogram on excel and comment on why you think that the scientist thought it was a better way to display this data.