

# Discussion Problems

## Step 1: Read and Interpret Line Graphs

### National Curriculum Objectives:

Mathematics Year 5: (5S2) [Solve comparison, sum and difference problems using information presented in a line graph](#)

### About this resource:

This resource has been designed for pupils who understand the concepts within [this step](#). It provides pupils with more opportunities to enhance their reasoning and problem solving skills through more challenging problems. Pupils can work in pairs or small groups to discuss with each other about how best to tackle the problem, as there is often more than one answer or more than one way to work through the problem.

There may be various answers for each problem. Where this is the case, we have provided one example answer to guide discussion.

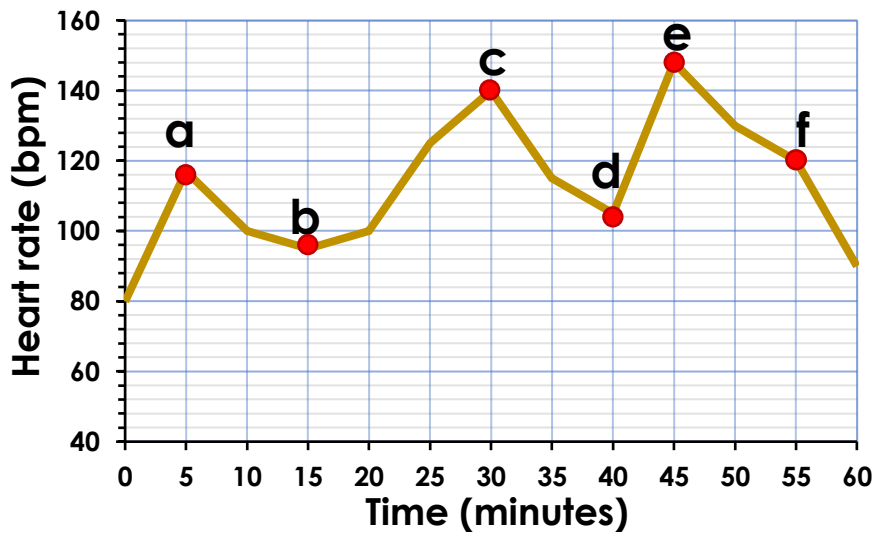
We recommend self or peer marking using the answer page provided to promote discussion and self-correction.


More [Year 5 Statistics](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.


# Read and Interpret Line Graphs

1. The line graph below shows Jackie's heart rate during an hour of exercise. She measured her heart rate every five minutes and completed six different exercises. Match the exercises below to the points on the graph. There may be more than one possible answer.







**Sprinting heart rate:**  
140-160bpm




**Stretching heart rate:**  
80-100bpm




**Push ups heart rate:**  
110-130bpm



**Star jumps heart rate:**  
90-120bpm



**Skipping heart rate:**  
130-170bpm



**Leg raises heart rate:**  
90-120bpm

2. This line graph shows the average amount of electricity being used each hour by a household during term time and in the holidays. Use the line graph to investigate the different activities which could be taking place at the different times.

**AVERAGE ELECTRICITY USE  
(TERM TIME)**

Time	Electricity (kWh)
7am	10
10am	26
1pm	8
4pm	28
7pm	20

**AVERAGE ELECTRICITY USE  
(HOLIDAYS)**

Time	Electricity (kWh)
7am	9
10am	21
1pm	25
4pm	17
7pm	29

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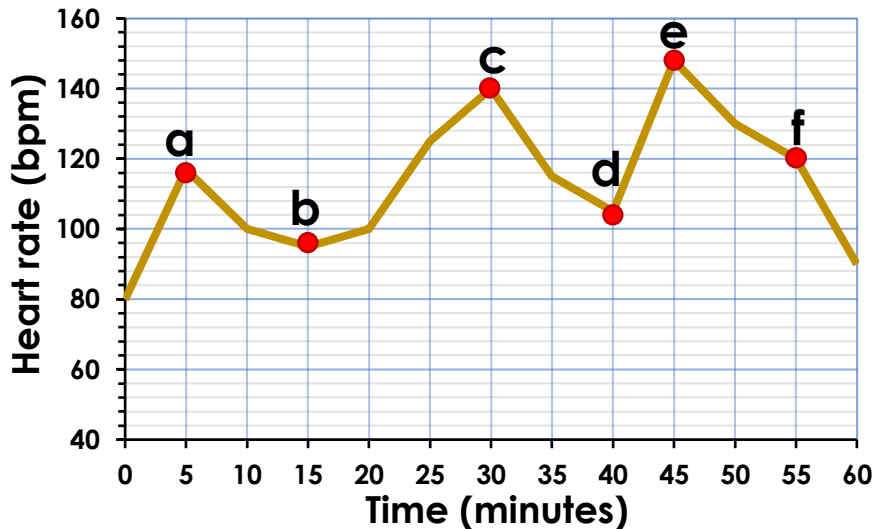
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Discussion Problems – Read and Interpret Line Graphs – Year 5

# Read and Interpret Line Graphs

1. The line graph below shows Jackie's heart rate during an hour of exercise. She measured her heart rate every five minutes and completed six different exercises. Match the exercises below to the points on the graph. There may be more than one possible answer. **Various answers, for example:**



- a) 116bpm
- b) 96bpm
- c) 140bpm
- d) 104bpm
- e) 148bpm
- f) 120 bpm

Sprinting heart rate:  
140-160bpm - **c**

Stretching heart rate:  
80-100bpm - **b**

Push ups heart rate:  
110-130bpm - **f**



Star jumps heart rate:  
90-120bpm - **d**

Skipping heart rate:  
130-170bpm - **e**

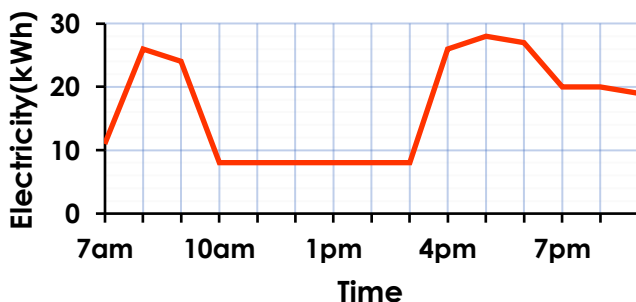
Leg raises heart rate:  
90-120bpm - **a**

DP

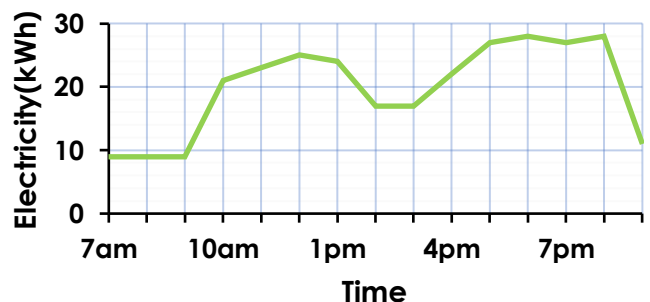
2. This line graph shows the average amount of electricity being used each hour by a household during term time and in the holidays. Use the line graph to investigate the different activities which could be taking place at the different times.



AVERAGE ELECTRICITY USE  
(TERM TIME)



AVERAGE ELECTRICITY USE  
(HOLIDAYS)



**Various answers, for example:** Between 9am and 3pm during term time, the amount being used is low because everyone is out of the house, but isn't zero because things like the fridge will still be plugged in. More electricity is used during the holidays because more people are at home.

DP