

**Tugasan
PEKA****1**

Kaji situasi di bawah.
Study the situation below.

Pada suatu hari, Adam Adwan telah mengambil bacaan denyutan nadinya selepas berjalan dari bilik guru ke bilik darjah. Selepas menyedari kotak penselnya tertinggal, dia berlari semula ke bilik guru lalu mengambil lagi bacaan nadinya. Adam Adwan mendapati bahawa bacaan nadinya ketika rehat, berjalan dan berlari adalah berbeza.

One day, Adam Adwan took a reading of his pulse after walking from the teachers' room to the classroom. After realising his pencil box was left behind, he ran back to the teachers' room and took another pulse reading. Adam Adwan found that his pulse readings during rest, walking and running were different.

- (a) Berdasarkan maklumat di atas, rangka dan jalankan satu eksperimen untuk mengkaji kesan aktiviti fizikal ke atas kadar denyutan nadi manusia.

Based on the above information, design and conduct an experiment to study the effects of physical activity on human pulse rate.

- (b) Anda diminta menulis satu laporan bagi eksperimen tersebut.

You have to write a report for the experiment.

Laporan amali anda hendaklah mengandungi:

Your experiment report should contain:

- | | |
|--|---|
| (i) Pernyataan masalah
<i>Problem statement</i> | (vi) Prosedur
<i>Procedure</i> |
| (ii) Tujuan
<i>Aim</i> | (vii) Pemerhatian
<i>Observation</i> |
| (iii) Hipotesis
<i>Hypothesis</i> | (viii) Mentafsir data
<i>Interpret data</i> |
| (iv) Pemboleh ubah
<i>Variables</i> | (ix) Membuat kesimpulan
<i>Make conclusion</i> |
| (v) Radas dan bahan
<i>Apparatus and material</i> | |

- (c) Anda juga dikehendaki menjawab soalan-soalan berikut:

You are also required to answer the following questions:

- Nyatakan inferens bagi dapatan eksperimen tersebut.
State the inference for the experimental findings.
- Berdasarkan dapatan eksperimen, tuliskan satu hubungan antara pemboleh ubah dimanipulasi dan pemboleh ubah bergerak balas.
Based on the experimental findings, write a relationship between the manipulated variable and the responding variable.
- Nyatakan definisi secara operasi bagi kadar denyutan nadi.
State the operational definition of pulse rate.
- Terangkan mengapa kadar denyutan nadi seseorang berubah mengikut jenis aktiviti fizikal.
Explain why a person's pulse rate changes based on the type of physical activity.
- Bincangkan kesahan data yang anda perolehi jika eksperimen ini dilakukan di rumah.
Discuss the validity of the data you obtained if the experiment is conducted at home.
- Apakah kesan lain terhadap manusia akibat aktiviti fizikal yang lasak?
What are the other effects on humans as a result of vigorous physical activity?
- Cadangkan satu langkah yang boleh mengelakkan pengaruh faktor selain aktiviti fizikal dan terangkan langkah yang dipilih.
Suggest a step that can avoid the influence of factors other than physical activity and explain the chosen step.

Semasa anda menjalankan eksperimen, kemahiran manipulatif dan amalan sikap saintifik dan nilai murni akan dinilai.

As you conduct the experiment, manipulative skills and the practice of scientific attitudes and noble values will be assessed.



Laporan Amali Laboratory Report

Nama : _____
Name

Tarikh : _____
Date

Tingkatan : _____
Form

Pernyataan Masalah Problem Statement

Adakah kadar denyutan nadi manusia berbeza mengikut jenis aktiviti fizikal?

Does the human pulse rate differ according to the type of physical activity?

K1P1

Tujuan Aim

Menyiasat kadar denyutan nadi manusia berdasarkan aktiviti fizikal.

To investigate human pulse rate based on physical activity.

K1P2

Hipotesis Hypothesis

Semakin lasak aktiviti senaman yang dilakukan, semakin tinggi kadar denyutan nadi.

The higher the intensity of the exercise, the higher the pulse rate.

K1P3

Pemboleh Ubah Variables

(a) Dimanipulasikan : Jenis aktiviti fizikal

Manipulated Physical activity

(b) Bergerak balas : Kadar denyutan nadi

Responding Pulse rate

(c) Dimalarkan : Tempoh masa, umur dan jantina

Constant Duration, age and gender

K1P4

Radas Apparatus

Jam randik

Stopwatch

K1P5

Prosedur Procedure

(Langkah mesti ditulis dalam ayat pasif. / *Steps must be written in passive voice.*)

1. Aktiviti ini dijalankan dalam kumpulan kecil.

The activity was conducted in small groups.

2. Seorang ahli kumpulan diminta menjalankan aktiviti fizikal berikut:

One of the group members was asked to perform the following physical activities:

(a) Berehat selama 2 minit / *Rest for 2 minutes*

(b) Berjalan selama 2 minit / *Walk for 2 minutes*

(c) Berlari selama 2 minit / *Run for 2 minutes*

3. Bacaan kadar denyutan nadi diambil dan direkod sebaik sahaja habis setiap aktiviti.

The reading of the pulse rate was taken and recorded right after each activity.

4. Setiap ahli dipastikan mendapat rehat 5 minit sebelum meneruskan aktiviti yang seterusnya.

Each member was made sure to have a 5 minutes rest before continuing with another activity.

K1P6

Prosedur –
boleh rujuk
buku teks
(muka surat 39)
*Procedure – can
refer to textbook
(page 39)*


Keputusan
Results

Aktiviti fizikal <i>Physical activity</i>	Kadar denyutan nadi (bpm) <i>Pulse rate (bpm)</i>					Bacaan purata <i>Average reading</i>
	Ahli A <i>Member A</i>	Ahli B <i>Member B</i>	Ahli C <i>Member C</i>	Ahli D <i>Member D</i>	Ahli E <i>Member E</i>	
Berehat <i>Rest</i>						
Berjalan <i>Walking</i>		(Jawapan murid / <i>Student's answer</i>)				
Berlari <i>Running</i>						

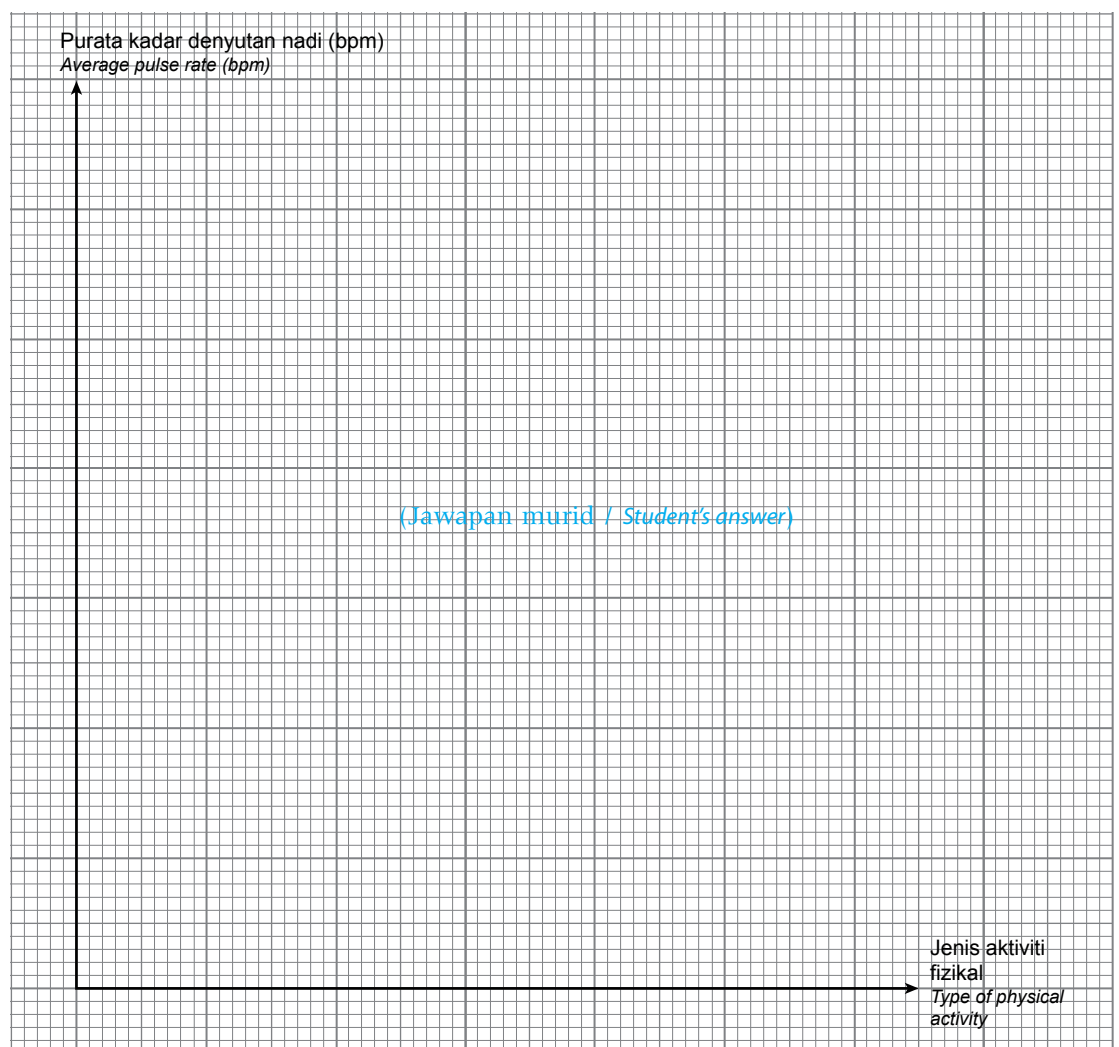
K3P1

K3P2

Analisis Data
Data Analysis

Plotkan graf purata kadar denyutan nadi melawan jenis aktiviti fizikal.

Plot a graph of average pulse rate against the type of physical activity.



K4P1

Perbincangan
Discussion

1. Nyatakan inferens bagi dapatan eksperimen ini.

State the inference for the findings of this experiment.

K4P2a

Ketika berlari, kadar denyutan nadi adalah paling tinggi kerana jenis aktiviti fizikal tersebut paling lasak.

When running, the pulse rate is the highest because the type of physical activity is the most vigorous.

2. Berdasarkan dapatan eksperimen, nyatakan hubungan antara pemboleh ubah dimanipulasi dengan pemboleh ubah bergerak balas.

Based on the experimental findings, state the relationship between the manipulated variable and the responding variable.

K4P2b

Semakin lasak aktiviti fizikal yang dilakukan, semakin tinggi kadar denyutan nadi.

The higher the intensity of the exercise, the higher the pulse rate.

3. Nyatakan definisi secara operasi bagi kadar denyutan nadi.

State the operational definition of pulse rate.

K4P2c

Kadar denyutan nadi adalah kiraan nadi murid selama satu minit selepas selesai melakukan setiap aktiviti fizikal.

Pulse rate is the student's pulse count for one minute after completing each physical activity.

4. Terangkan mengapa kadar denyutan nadi seseorang berubah mengikut jenis aktiviti fizikal.

Explain why the pulse rate of an individual change depending on the type of physical activity.

K5P1

Semasa melakukan aktiviti cergas seperti berlari, aktiviti sel menjadi sangat aktif dan oksigen yang banyak diperlukan oleh sel. Justeru, jantung akan mengepam darah dengan kadar yang lebih tinggi untuk membekalkan oksigen yang mencukupi ke sel-sel badan.

During vigorous activities such as running, cellular activities become very active and large amounts of oxygen are needed by cells. Hence, the heart will pump blood at a higher rate to supply adequate oxygen to body cells.

5. Bincangkan kesahan data yang anda perolehi jika eksperimen ini dilakukan di rumah.

Discuss the validity of the data you obtained if the experiment is conducted at home.

K5P3

K5P4

Kadar denyutan nadi untuk jenis aktiviti fizikal adalah sama seperti yang dilakukan di sekolah jika kajian ini dilakukan di rumah.

The pulse rate for this type of physical activity is the same as that done in school if the study is done at home.

6. Apakah kesan lain terhadap manusia akibat aktiviti fizikal yang lasak?

What are the other effects on humans as a result of vigorous physical activity?

K5P3

Kesan lain terhadap manusia akibat aktiviti fizikal yang lasak ialah kadar pernafasan yang lebih tinggi / bernafas dengan lebih laju.

Another effect on humans as a result of vigorous activity is a higher respiratory rate / breathing faster.

7. Cadangkan satu langkah yang boleh mengelakkan pengaruh faktor selain aktiviti fizikal dan terangkan langkah yang dipilih.

Suggest a step that can avoid the influence of factors other than physical activity and explain the chosen step.

K5P2

Jantina murid perlu ditetapkan sama kerana perempuan mempunyai kadar denyutan nadi yang lebih tinggi berbanding dengan lelaki.

The gender of the students should be set the same as females have a higher pulse rate than males.

Kesimpulan
Conclusion

1. Hipotesis diterima.

The hypothesis is accepted.

2. Semakin lasak aktiviti senaman yang dilakukan, semakin tinggi kadar denyutan nadi.

The higher the intensity of the exercise, the higher the pulse rate.

K4P3