

Soalan Subjektif

9.1

Hubung Kait Suhu dengan Haba *Relationship between Temperature and Heat*

Buku Teks: m.s. 206

1. Lengkapkan jadual di bawah tentang perbezaan antara haba dan suhu. 1
Complete the table below with the differences between heat and temperature.

	Haba / Heat	Suhu / Temperature
Definisi <i>Definition</i>	(a) <div style="background-color: yellow; width: 100%; height: 30px;"></div>	(d) <div style="background-color: yellow; width: 100%; height: 30px;"></div>
Unit S.I. <i>S.I. unit</i>	(b) <div style="background-color: yellow; width: 100%; height: 30px;"></div>	(e) <div style="background-color: yellow; width: 100%; height: 30px;"></div>
Bergantung pada <i>Depends on</i>	(c) <div style="background-color: yellow; width: 100%; height: 30px;"></div>	(f) <div style="background-color: yellow; width: 100%; height: 30px;"></div>

degree Celcius (C), kelvin (K)

An energy

joule (j)

Movement of particles in a substance

Type of substance, amount of substance and temperature

Degree of hotness or coldness of an object



Pengaliran Haba
Heat Flow

1. Senaraikan tiga cara pengaliran haba. **TH 1**
List three methods of heat flow.

- (a) _____
- (b) _____
- (c) _____

2. Aminah ingin merebus pasta untuk makan malam. Dia memasukkan air bersuhu bilik ke dalam periuk kaca dan memanaskannya seperti dalam Rajah 1. Selepas 10 minit, air mula mendidih.
Aminah wants to boil pasta for dinner. She puts some water at room temperature into a glass pot and boil it as in Diagram 1. After 10 minutes, the water starts to boil.



Rajah 1 / Diagram 1

(a) Namakan dua cara pengaliran haba yang berlaku dalam rajah tersebut. **TH 3**
Name two methods of heat flow that happen in the diagram.

- (i) _____
- (ii) _____

KBAT Mengaplikasi

(b) Jelaskan bagaimana haba dapat mendidihkan air di dalam periuk. **TH 4**
Explain how the heat can boil the water in the pot.

KBAT Menganalisis

Heat is transferred first by _____ through the bottom of the pot to the water. The hot water at the bottom becomes _____ dense and rises. The water at the top which is cooler and dense moves _____. The water molecules in the pot will continuously move (_____) and eventually the entire water was _____

down convection less boil conduction

3. Nyatakan cara pengaliran haba yang betul bagi setiap situasi berikut. **TH 1**
State the correct method of heat flow for each of the following situation.

KBAT Menganalisis

- (a) Terpegang tungku api yang panas dan jari melepuh.
Accidentally touching a hot burner and being burnt.
- (b) Memanaskan badan di tepi unggun api.
Warming your body next to a camp fire.
- (c) Menggril stik.
Grilling a steak.
- (d) Menyah beku makanan pada suhu bilik.
Thawing food at room temperature.
- (e) Memanaskan makanan dalam ketuhar mikro.
Heating up food in a microwave.

4. Berikut adalah pengaliran haba dalam fenomena alam yang terjadi di sekeliling kita.
The following is the flow of heat in natural phenomena that happens around us.

(a) Jelaskan bagaimana haba daripada Matahari boleh memanaskan Bumi. **TP 4**
Explain how the heat from the Sun can warm up the Earth.

KBAT Menganalisis

Space between the Sun and Earth is . Heat from the Sun travels to the Earth through . Carbon dioxide in the atmosphere absorbs it and the Earth through the method.

convection

warm

vacuum

radiation

(b) Bagaimanakah anda membuktikan bahawa haba boleh bergerak melalui vakum? **TP 3**
How do you prove that heat can travel through vacuum?

KBAT Mengaplikasi

Switch on a bulb in a glass jar that has been using a vacuum pump. After a few minutes, touch the glass jar with the palm of your hand, the jar will feel . This proves that heat can travel through surrounding.

warm

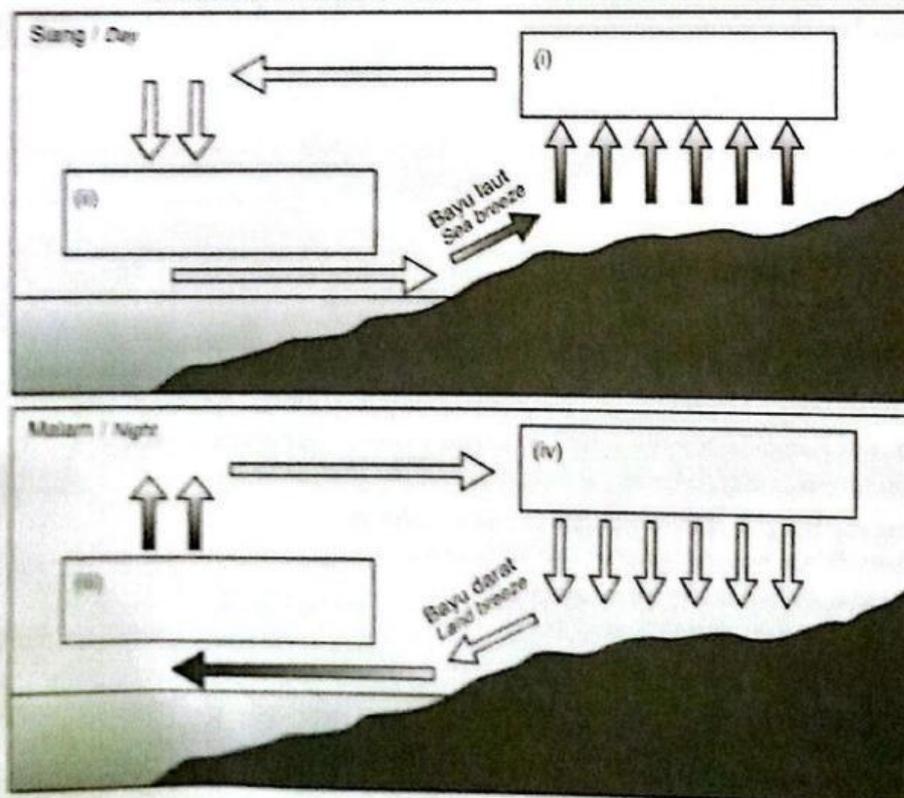
degassed

vacuum

(c) Lengkapkan label dalam Rajah 2 menggunakan pilihan jawapan yang diberi. **TP 2**
Complete the labels in Diagram 2 by using the choices given.

Udara panas naik ke atas
Warm air rises

Udara sejuk turun ke bawah
Cool air descends



Rajah 2 / Diagram 2

Konduktor Haba dan Penebat Haba

Heat Conductors and Heat Insulators

5. Padankan sifat-sifat berikut dengan jawapan yang betul. (10)
- Match the following characteristics with the correct answer.

(a) Membenarkan haba melaluinya dengan perlahan.
Allow heat to go through it slowly.

(b) Diperbuat daripada bahan bukan keluli seperti kaca.
Made of non-metal substances such as glass.

(c) Menjadi sejuk atau panas dengan mudah.
Easily become cold or hot.

(d) Diperbuat daripada keluli seperti besi dan kuprum.
Made of metals such as iron and copper.

(e) Menjadi sejuk atau panas dengan perlahan.
Slowly become cold or hot.

(f) Membenarkan haba melaluinya dengan cepat.
Allow heat to go through it quickly.

(i) Konduktor haba
Heat conductor

(ii) Penebat haba
Heat insulator

6. Berikan dua aplikasi konduktor haba dan penebat haba dalam kehidupan seharian kita. (10)
- Give two applications of heat conductor and heat insulator in our daily life.

(a) Aplikasi konduktor haba
Application of heat conductors

(i) Thermometer contain Aluminium which is used to absorb heat
- mercury

(ii) Aluminium is used for making frying pans because it can absorb heat quickly

(b) Aplikasi penebat haba
Application of heat insulators

(i) The handle of a pot is made from wood or plastic in order for it not to be hot.

(ii) Styrofoam handle Styrofoam

A Styrofoam box is used for storing ice because it can slow down the conduction of heat from outside.