

# ISEB Assessments

## Year 7 and 8 Science Test 7

### Classifying Materials 1

Author: ISEB



This test contains a selected set of 5 questions in a particular topic order.

- 40 marks are available in total.
- You should take no more than 30 minutes to complete the test.
- Write your answers in the spaces provided.
- Always write down your working, except when you are told not to.
- Calculators are allowed.

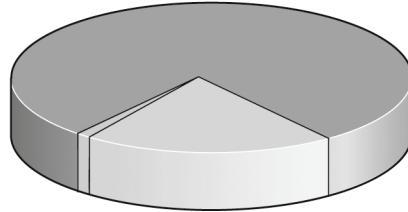
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#### **NOTE TO TEACHERS**

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**Year 7 and 8 Science Test 7**

1. (a) Complete the labelling on the pie chart below with the names of the gases to show the proportion of each gas in the air. (2)



(b) Complete the following:

(i) The gas which is required for burning is ..... (1)

(ii) The gas which turns limewater milky is ..... (1)

(iii) The gas which is necessary for rusting to occur is ..... (1)

(iv) The gas which is given off when fossil fuels are burnt  
is ..... (1)

(v) The gas which is a raw material for photosynthesis is .....  
..... (1)

(vi) The gas which is the product of photosynthesis is .....  
..... (1)

2. (a) Complete the following passage using the words below.

**crystals      grains      granite**  
**igneous      magma      sandstone**

When hot liquid rock, called ....., cools and hardens, it usually forms ..... rocks. Rocks formed in this way usually contain ..... An example of this type of rock is ..... Sedimentary rocks are made up of ..... which can be rubbed off quite easily. Two examples of sedimentary rock are limestone and ..... (2)

(b) Limestone and other raw materials are made into glass. Is this change physical or chemical?

Answer: ..... (1)

Give a reason for your answer.

Answer: ..... (1)

**Year 7 and 8 Science Test 7**

(c) Iron and aluminium are both extracted from rocks.

(i) Complete the table below by writing **yes** or **no** in the spaces. (2)

property	iron	aluminium
is it metallic?		
does it conduct electricity?		
is it magnetic?		

(ii) Suggest and explain a use for aluminium.

use: ..... (1)

reason: ..... (1)

(iii) Match the materials in the left-hand column to the descriptions in the right-hand column, using a ruler. (One has been done for you.) (3)

ceramic	a liquid fossil fuel
iron	a material used for tombstones in graveyards
marble	a material used for tiles, cups and saucers
oil	a material used for galvanizing steel
polythene	a magnetic material
wood	the material used for a plastic bag
zinc	a naturally occurring material which was once living



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4. (a) Different materials are classified as metals or non-metals depending on certain properties. Which of the following properties would identify a material as a metal? Tick the appropriate boxes. (4)

property	
some are shiny, especially when polished	
they conduct electricity	
they are excellent thermal insulators	
they are usually solid at room temperature	
they have a low density	
they have high melting points	
they tend to be brittle	

- (b) Metals can be used to make alloys which are mixtures of elements.

This table shows the mass of each element present in 50 g of five different alloys. Some of the data are missing.

mass of element in g	alloy				
	brass	bronze	solder	stainless steel	steel
carbon					
chromium				10.5	
copper	33	48			
iron				34	49
lead			30		
nickel				5.5	
tin		1.5	20		
zinc	17	0.5			

- (i) Which **two** alloys in the table contain only two metals?

Answer: ..... (1)

- (ii) Steel contains only iron and a non-metallic element. Which element is this and how much would be present in 100 g of steel? Show your working.

Element: ..... (1)

Mass in 100 g steel: ..... g (1)

- (iii) Motorcycle wheels are made from an alloy containing iron, chromium and magnesium. Suggest **two** advantages of this alloy, compared with steel, for this job.

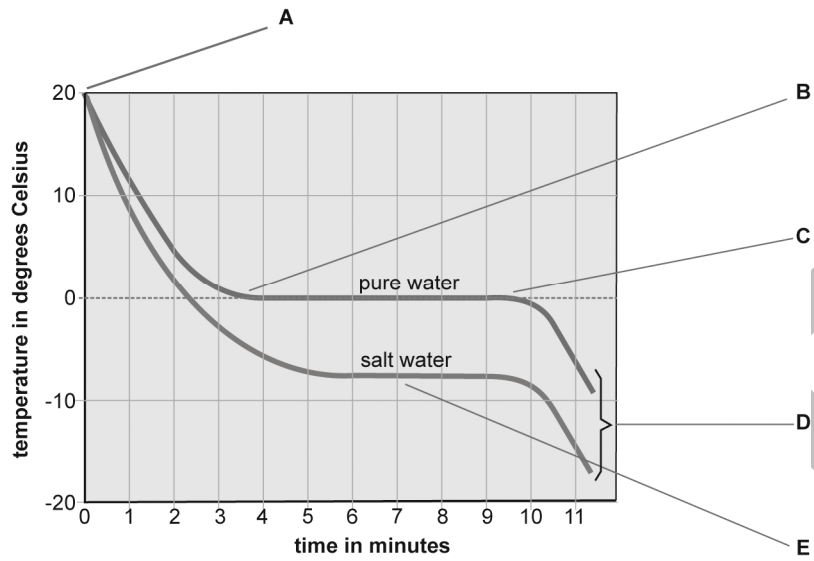
1: ..... (1)

2: ..... (1)

Turn over to the next page for question 5

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5. This diagram shows cooling curves for pure water and for seawater.



(a) Why does the temperature stay constant between points B and C?

Answer: .....

..... (2)

(b) Why does the temperature fall after 9.5 minutes?

Answer: .....

..... (2)

(c) At what temperature does seawater freeze?

Answer: ..... (1)

(d) Explain why there is a difference in temperatures at point D?

Answer: .....  
..... (2)

(e) Is pure water a compound, a mixture or an element?

Answer: ..... (1)

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# ISEB Assessments

## Year 7 and 8 Science Test 7

### Classifying Materials 1

### Answers

Author: ISEB



This document consists of a full set of answers to the questions in Year 7 and 8 Science Test 7.

Total marks: 40

These answers are part of *Year 7 and 8 Science Test 7.zip*, which also contains:

*Year 7 and 8 Science Test 7.pdf*

(the test)

*Year 7 and 8 Science Test 7 Teacher's Document.pdf*

(the teacher's document)

#### **REQUIRED PRINT SETTINGS**

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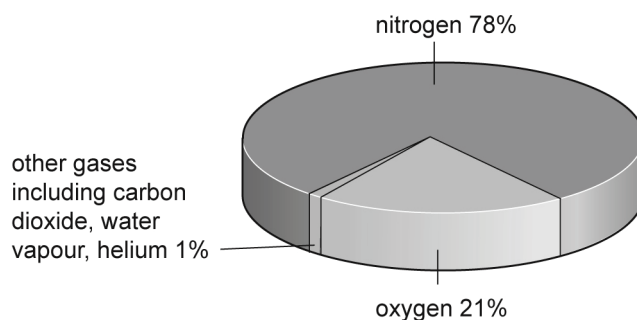
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Year 7 and 8 Science Test 7 Answers

1. (a) (2)



- (b) (i) oxygen (1)
- (ii) carbon dioxide (1)
- (iii) oxygen (1)
- (iv) carbon dioxide (1)
- (v) carbon dioxide (1)
- (vi) oxygen (1)

2. (a) magma – igneous – crystals – granite – grains – sandstone (2)

(b) chemical – it is not reversible (2)

(c) (i) iron (yes – yes – yes); aluminium (yes – yes – no) (2)

(ii) pans and cooking equipment / light – good conductor of heat – very malleable (2)

(iii) iron – a magnetic material  
marble – a material used for tombstones in graveyards  
oil – a liquid fossil fuel  
polythene – the material used for a plastic bag  
wood – a naturally occurring material which was once living  
zinc – a metal used for galvanising steel  
(mark in pairs, so total of 3 marks for six correct answers) (3)

3. (a) (i) magnesium hydroxide (1)

(ii) greeny-blue (1)

(b) (i) it is not an element, it is a compound (1)

(ii)  $\text{NH}_4\text{NO}_3$  (1)

4. (a) some are shiny, especially when polished  
they conduct electricity  
they are usually solid at room temperature  
they have high melting points (4)
- (b) (i) brass and solder (1)
- (ii) carbon (1)  
there would be 1 g (50 – 49) in 50 g so 2 g in 100 g (1)
- (iii) does not rust / very tough / very light (2)
5. (a) the molecules of water are being rearranged / as water changes to ice (2)
- (b) the ice crystals consume energy / as they are rearranged into their final structure (also accept the temperature will continue to fall after all the water has frozen) (2)
- (c) -8 °C (1)
- (d) the presence of dissolved substances (solutes) in seawater / interferes with the way particles rearrange themselves / impurities lower the freezing point (2)
- (e) a compound (1)

# ISEB Assessments

## Year 7 and 8 Science Test 7

### Teacher's Document

Author: ISEB



This test contains a selected set of 5 questions aimed at Year 7 and 8 pupils. The questions are arranged in a particular topic order as follows:

Topic	Question	NC level
Classifying gases/gases in the air	1	5
Materials/rocks and metals	2	6
Materials/periodic table	3	7
Materials/alloys and metals	4	6
Changes of state/particles	5	7

Total marks: 40

Total time allocated: 30 minutes

Calculators are allowed.

Teachers should feel free to use this resource in whatever way is most appropriate for their scheme of work. The test can be attempted all at once and is designed to take a Year 7 or 8 pupil approximately thirty minutes to complete.

All tests in this range are designed to be used alongside the Science textbooks available from Galore Park Publishing. This test relates specifically to:

- Chapters 12 and 15 of So you really want to learn Science Book 2

Details of these and other Galore Park publications are available at [www.galorepark.co.uk](http://www.galorepark.co.uk)

Please refer to the printing instructions provided on the next page of this teacher's document before printing copies of the test or the accompanying answers.

This teacher's document is part of *Year 7 and 8 Science Test 7.zip*, which also contains:

*Year 7 and 8 Science Test 7.pdf*

(the test)

*Year 7 and 8 Science Test 7 Answers.pdf*

(the answers)

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