



## Year 8 Pressure and Rocks HW Answers

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35 minutes



46 marks

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M1. (a) any **one** from

- it absorbed water
- its mass **or** weight increased  
*accept 'it soaks up water'*  
*accept 'the mass **or** weight of the granite **or** marble did not increase **or** change'*  
*'granite **or** marble did not change' is insufficient*

1 (L5)

(b) (i) any **one** from

- it would crack
- it would crumble **or** break up  
*accept 'the grains would move apart'*

1 (L5)

- (ii) • weathering  
*accept 'freeze-thaw'*  
*accept 'erosion'*

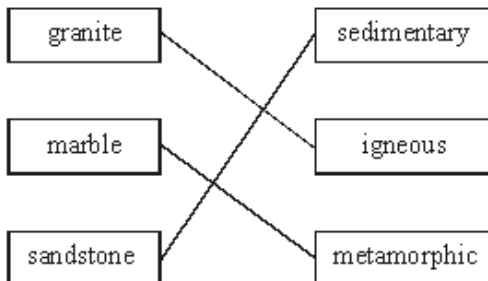
1 (L5)

(c) any **one** from

- granite would not react with acid rain  
*accept 'granite **or** it is not affected by acid rain **or** acid'*  
*accept 'granite would not erode or crumble **or** corrode'*
- marble reacts with acid rain  
*accept 'marble is affected by acid rain **or** rain'*  
*accept 'marble would erode'*  
*accept 'rain **or** pollution might have acid in it'*  
*'granite does not react with air pollution' is insufficient*  
*do **not** accept 'it would erode'*

1 (L6)

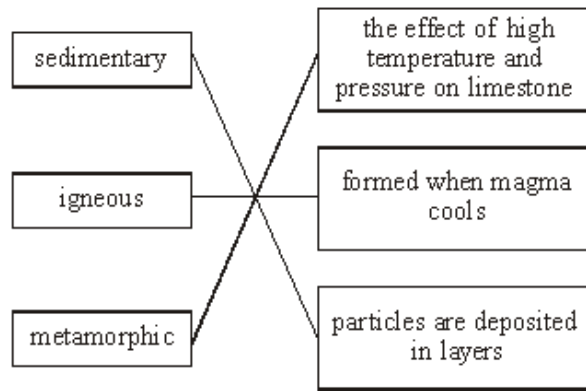
(d) (i) •



*if all three lines are correct, award two marks*  
*if one **or** two lines are correct, award one mark*  
*if more than one line is drawn from a name of a rock, do not credit that line*

2 (L5)

(ii) •



*if all three lines are correct, award two marks*  
*if one **or** two lines are correct, award one mark*  
*if more than one line is drawn from a name of a rock, do not credit that line*

2 (L6)

[8]

M2. (a) (i) • metamorphic

1 (L5)

(ii) • igneous

1 (L5)

(b) • when magma cools more quickly the crystals are smaller  
*accept the converse*  
*accept 'in magma which cools faster the crystals are small'*  
*answers must include a comparison*  
*do **not** accept 'crystals are bigger when the rock cools slowly'*

1 (L6)

(c) (i) • oxygen  
*'O<sub>2</sub>' is insufficient*

1 (L5)

(ii) • aluminium oxide  
*accept 'aluminium trioxide'*

1 (L6)

(iii) • 5

1 (L6)

(d) (i) any **one** from  
• at the bottom  
• below copper  
*'less reactive' is insufficient*

1 (L6)

- (ii) • zinc chloride  
*accept 'ZnCl<sub>2</sub>'*  
*answers can be in either order*
- 1 (L6)

- hydrogen  
*accept 'H<sub>2</sub>'*  
*'H' is insufficient*
- 1 (L6)

[9]

**M3.** (a) any **one** from

- it cools more slowly  
*accept 'it cools slowly' or 'it is cooler above ground'*
- large volume of magma  
*accept 'there is a lot of it'*
- magma is insulated by rock  
*accept 'magma is surrounded by rock'*
- heat is transferred more slowly to rock than to air  
*accept 'it is hotter underground'*
- lava cools more quickly

1 (L7)

- (b) (i) crystals formed underground will be larger  
*accept the converse*  
*accept 'they will be larger'*

1 (L7)

(ii) any **one** from

- magma cools more slowly than lava  
*accept 'magma cools slowly'*  
*do **not** accept 'bigger crystals cool more slowly'*
- lava cools more quickly than magma  
*accept 'lava cools quickly'*  
*accept 'there is no rock above the lava'*

1 (L7)

- (c) (i) any **one** from
- high temperatures  
*accept 'heat' or 'hot'*
  - high pressure  
*accept 'pressure'*
- 1 (L7)
- (ii) marble
- 1 (L7)

[5]

- M4.** (a) From liquid to solid  
*both parts are required for the mark*
- 1 (L7)
- (b) they are smaller
- 1 (L7)
- (c) any **one** from
- more energy has been transferred to it  
*accept 'more heat' was passed to it'*
  - it is next to the larger volume of cooling magma **or** igneous rock  
*accept 'heat was passed to it from more magma'  
or 'it is closer to the main amount of magma'  
or 'only a small amount of magma got near to B'  
do **not** accept it cooled more slowly'*
- 1 (L7)

[3]

- M5.** (a) (i) • (molecules) are far apart **or** not touching each other  
*accept 'only gases can be compressed'  
'the gas can be compressed' is insufficient  
as it is given in the question  
accept 'they are randomly arranged'*
- 1 (L7)
- (ii) • there is only one type of molecule  
**or** compound **or** substance  
*accept 'there is one type of particle'  
do **not** accept 'there is only one type of atom **or** element'*
- 1 (L7)

(b) any **one** from

- the space **or** distance between the molecules **or** particles is smaller  
*accept 'the volume is less'*  
*accept 'atoms' for 'particles'*
- the particles **or** they are closer together
- more particles are touching the sides  
*accept 'particles hit the sides more often'*  
*'the particles are hitting the sides' is insufficient*  
*'if the gas is compressed the pressure rises' is insufficient*

1 (L7)

(c) (i) any **one** from

- new **or** different compounds have formed  
*accept 'they are now joined in threes'*  
*accept 'new combinations of particles **or** atoms'*
- there is more than one compound  
*accept 'the compounds are different'*  
*accept 'there is no longer a pure substance'*




1 (L7)

(ii) any **one** from

- the same number of atoms are present  
*accept 'mass is conserved'*  
*'the mass stays the same' is insufficient*
- nothing has been added to **or** lost  
*'the same atoms are present' is insufficient*  
*'nothing changed' is insufficient*  
*'the amount of gas stays the same' is insufficient*

1 (L7)

(iii) •

	NO
	NO <sub>2</sub>
	N <sub>2</sub> O

*accept 'ON'*

*accept 'ON<sub>2</sub>'*

*accept 'O<sub>2</sub>N'*

**all three** answers are required for the mark

1 (L7)

- (iv) • nitrogen oxide  
*accept 'nitrogen monoxide'*  
*accept 'nitric oxide'*

1 (L7)

[7]

M6. (a) 25

*accept '175 ÷ 7'*

1 (L7)

(b) any **one** from

- greater than 27 N/cm<sup>2</sup>  
*the unit is required for the mark*  
*do **not** accept '27 N/cm<sup>2</sup>'*
- greater than the pressure in the tyre  
*accept any answer greater than 27 N/cm<sup>2</sup>*

1 (L7)

(c) 2850

1 (L7)

[3]

##

(a) • 10

*accept ' $\frac{5}{0.5}$ ' if the answer is not evaluated*

1 (L7)

- N/mm<sup>2</sup>

*accept, for two marks, '10<sup>7</sup> Pa'*

*'10<sup>7</sup>' is insufficient*

*accept 'Nmm<sup>-2</sup>'*

*do **not** accept 'n' for 'N'*

1 (L7)

(b) • 5

*accept '10 × 0.5' if the answer is not evaluated*

1 (L7)

- N cm

*accept 'cm N'*

*do **not** accept 'n' for 'N'*

*accept, for two marks, '0.05 Nm'*

*'0.05' is insufficient*

1 (L7)

- (c) • (weight =  $200 \times 0.05 =$ ) 10  
 accept '(force = area  $\times$  pressure =) 10'  
 accept, for one mark, '0.05  $\times$  200' if not evaluated **or** evaluated incorrectly  
 award two marks for the correct numerical answer, whether or not correct working has been shown  
 if the answer is incorrect, award one mark for a rearranged equation showing explicitly how to calculate weight or force e.g. 'force **or** weight = area  $\times$  pressure'

2 (L7)

[6]

- M8.** (a) (i) • 100  
 accept '200  $\div$  2.0'

1 (L7)

- N/cm<sup>2</sup>  
 accept ' $10^6$  N/m<sup>2</sup>' **or** ' $10^6$  Pa' for two marks

1 (L7)

- (ii) 800  
 accept '100  $\times$  8'  
 accept the numerical answer to **a i**  $\times$  8  
 the unit is not required for the mark

1 (L7)

- (b) (i) any **one** from
- air **or** gas can be compressed  
 accept 'gases are easier to compress'  
 'air **or** gas provides less resistance' is insufficient
  - water **or** liquids cannot be compressed
  - gaps between particles of  
 accept 'atoms can be compressed together'  
 air **or** gas can be reduced

1 (L6)



(ii) any **one** from

- less force would be transmitted to the brakes  
*accept 'the brakes have less effect'*  
*'the brakes are spongy' is insufficient*
- less pressure at B  
*accept 'less pressure could be produced'*  
*accept 'less **or** no resistance to the brakes'*
- piston B would not move  
*accept 'the air bubbles could be compressed'*

1 (L7)

[5]

