90944MR

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QUALIFY FOR THE FUTURE WORLD KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

### Pūtaiao, Kaupae 1, 2019

90944M Te whakaatu māramatanga ki ngā āhuatanga o te waikawa me te pāpāhua<sup>1</sup>

9.30 i te ata Rāpare 14 Whiringa-ā-rangi 2019 Whiwhinga: Whā

#### **PUKAPUKA RAUEMI**

Tirohia tēnei pukapuka hei whakatutuki i ngā tūmahi mō 90944M.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–3 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

KA TAEA TĒNEI PUKAPUKA TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

<sup>&</sup>lt;sup>1</sup> kawakore

Taka Katote Table of Ions

+1	+2	+3	-3	-2	-1
NH <sub>4</sub> <sup>+</sup>	Ca <sup>2+</sup>	A1 <sup>3+</sup>		O <sup>2-</sup>	OH <sup>-</sup>
Na <sup>+</sup>	Mg <sup>2+</sup>	Fe <sup>3+</sup>		S <sup>2-</sup>	Cl <sup>-</sup>
K <sup>+</sup>	Cu <sup>2+</sup>			CO <sub>3</sub> <sup>2-</sup>	NO <sub>3</sub>
Ag <sup>+</sup>	Pb <sup>2+</sup>			SO <sub>4</sub> <sup>2-</sup>	HCO <sub>3</sub>
$\mathrm{H}^{+}$	Fe <sup>2+</sup>				F
	Ba <sup>2+</sup>				
	Zn <sup>2+</sup>				

# TAKA PŪMOTU PERIODIC TABLE OF THE ELEMENTS

18 2 He	10 Ne	18 Ar	36 <b>Kr</b>	54 Xe	86 <b>Rn</b>	0 og
17	9 F	17 CI	35 <b>Br</b>	53 I	85 At	117 <b>Ts</b>
16	<b>o</b> ∞	16 S	34 <b>Se</b>	52 Te	84 <b>Po</b>	116 Lv
15	Z	15 <b>P</b>	33 As	51 <b>Sb</b>	83 <b>Bi</b>	115 Me
4	9 C	14 <b>Si</b>	32 Ge	50 <b>Sn</b>	82 <b>Pb</b>	FI
13	5 <b>B</b>	13 <b>Al</b>	31 <b>Ga</b>	49 In	81 TI	Nh
		12	30 <b>Zn</b>	48 C <b>d</b>	80 <b>Hg</b>	112 C <b>n</b>
		11	29 Cu	47 <b>Ag</b>	79 <b>Au</b>	<b>Rg</b>
		10	28 <b>Z</b>	46 <b>Pd</b>	78 <b>Pt</b>	110 <b>Ds</b>
		O	27 C0	45 <b>Rh</b>	77 Ir	109 Mt
	1	80	26 Fe	44 <b>Ru</b>	92 Os	108 <b>Hs</b>
1 H		_	25 Mn	43 Tc	75 <b>Re</b>	107 <b>Bh</b>
ho Number		9	24 C <b>r</b>	42 Mo	74 <b>W</b>	<b>Sg</b>
Tau iraoho Atomic Number		Ŋ	23 V	41 Nb	73 <b>Ta</b>	105 <b>Db</b>
		4	22 <b>Ti</b>	40 <b>Zr</b>	72 Hf	104 <b>Rf</b>
		ო	21 Sc	39 Y	71 <b>Lu</b>	103 <b>Lr</b>
2	4 <b>Be</b>	12 <b>Mg</b>	20 Ca	38 <b>Sr</b>	56 <b>Ba</b>	88 <b>Ra</b>
1	3 Li	11 <b>Na</b>	19 <b>K</b>	37 <b>Rb</b>	55 Cs	87 Fr

	1
70	102
<b>Yb</b>	<b>No</b>
69	101
<b>Tm</b>	<b>Md</b>
58 Er	100 101 <b>Fm Md</b>
67	99
<b>Ho</b>	Es
65 66 67   0	98 99
<b>Tb Dy Ho</b>	Cf Es
65	97
T <b>b</b>	<b>Bk</b>
64	95 96
<b>Gd</b>	Am Cm
63 64	95
<b>Eu Gd</b>	Am
62 <b>Sm</b>	94 95 Pu
) 61	93
<b>Nd Pm</b>	N <b>p</b>
<b>PN</b>	92 U
59	91
<b>Pr</b>	<b>Pa</b>
58	90
Ce	<b>Th</b>
57	89
<b>La</b>	<b>Ac</b>

#### English translation of the wording on the front cover

## Level 1 Science, 2019

# 90944 Demonstrate understanding of aspects of acids and bases

9.30 a.m. Thursday 14 November 2019 Credits: Four

#### RESOURCE BOOKLET

Refer to this booklet to answer the questions for 90944.

Check that this booklet has pages 2–3 in the correct order and that none of these pages is blank.

YOU MAY KEEP THIS BOOKLET AT THE END OF THE EXAMINATION.