

See back cover for an English  
translation of this cover

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90944MR



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

## Pūtaiao, Kaupae 1, 2011

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

9.30 i te ata Rāhina 21 Whiringa-ā-rangi 2011  
Whiwhinga: Rima

**PUKAITI RAUEMI**

Tirohia tēnei pukaiti hei whakautu i ngā pātai mō 90944M.

Tirohia mehemea kei roto nei ngā whārangi 2–5 e raupapa tika ana, ā, kāore hoki he whārangi wātea.

**KA TAEA TĒNEI PUKAITI TE PUPURI HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.**

<sup>1</sup>kawakore

**Taka Katote**

<b>+1</b>	<b>+2</b>	<b>+3</b>	<b>-3</b>	<b>-2</b>	<b>-1</b>
$\text{NH}_4^+$	$\text{Ca}^{2+}$	$\text{Al}^{3+}$		$\text{O}^{2-}$	$\text{OH}^-$
$\text{Na}^+$	$\text{Mg}^{2+}$	$\text{Fe}^{3+}$		$\text{S}^{2-}$	$\text{Cl}^-$
$\text{K}^+$	$\text{Cu}^{2+}$			$\text{CO}_3^{2-}$	$\text{NO}_3^-$
$\text{Ag}^+$	$\text{Pb}^{2+}$			$\text{SO}_4^{2-}$	$\text{HCO}_3^-$
$\text{H}^+$	$\text{Fe}^{2+}$				
	$\text{Ba}^{2+}$				
	$\text{Zn}^{2+}$				

**Table of Ions**

<b>+1</b>	<b>+2</b>	<b>+3</b>	<b>-3</b>	<b>-2</b>	<b>-1</b>
$\text{NH}_4^+$	$\text{Ca}^{2+}$	$\text{Al}^{3+}$		$\text{O}^{2-}$	$\text{OH}^-$
$\text{Na}^+$	$\text{Mg}^{2+}$	$\text{Fe}^{3+}$		$\text{S}^{2-}$	$\text{Cl}^-$
$\text{K}^+$	$\text{Cu}^{2+}$			$\text{CO}_3^{2-}$	$\text{NO}_3^-$
$\text{Ag}^+$	$\text{Pb}^{2+}$			$\text{SO}_4^{2-}$	$\text{HCO}_3^-$
$\text{H}^+$	$\text{Fe}^{2+}$				
	$\text{Ba}^{2+}$				
	$\text{Zn}^{2+}$				

# TAKA PŪMOTU

Tau Iraoho																																			
																	1	H																	
																	2	He																	
1	2																																		
3	4	Li	Be															13	5	B	6	C	7	N	8	O	9	F	10	Ne					
11	12	Na	Mg															13	13	Al	14	Si	15	P	16	S	17	Cl	18	Ar					
19	20	K	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga	32	Ge	33	As	34	Se	35	Br	36	Kr
37	38	Rb	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te	53	I	54	Xe
55	56	Cs	Ba	71	Lu	72	Hf	73	Ta	74	W	75	Re	76	Os	77	Ir	78	Pt	79	Au	80	Hg	81	Tl	82	Pb	83	Bi	84	Po	85	At	86	Rn
87	88	Fr	Ra	103	Lr	104	Rf	105	Db	106	Sg	107	Bh	108	Hs	109	Mt	110	Ds	111	Rg														

57	58	59	60	61	62	63	64	65	66	67	68	69	70
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb
89	90	91	92	93	94	95	96	97	98	99	100	101	102
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No

# PERIODIC TABLE OF THE ELEMENTS

18

Atomic Number		1 <b>H</b>																							
1	2																	2	<b>He</b>						
		3	4													9	10	11	12	13	14	15	16	17	18
		<b>Li</b>	<b>Be</b>													<b>B</b>	<b>C</b>	<b>N</b>	<b>O</b>	<b>F</b>	<b>Ne</b>				
		11	12													13	14	15	16	17	18				
		<b>Na</b>	<b>Mg</b>													<b>Al</b>	<b>Si</b>	<b>P</b>	<b>S</b>	<b>Cl</b>	<b>Ar</b>				
		19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36						
		<b>K</b>	<b>Ca</b>	<b>Sc</b>	<b>Ti</b>	<b>V</b>	<b>Cr</b>	<b>Mn</b>	<b>Fe</b>	<b>Co</b>	<b>Ni</b>	<b>Cu</b>	<b>Zn</b>	<b>Ga</b>	<b>Ge</b>	<b>As</b>	<b>Se</b>	<b>Br</b>	<b>Kr</b>						
		37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
		<b>Rb</b>	<b>Sr</b>	<b>Y</b>	<b>Zr</b>	<b>Nb</b>	<b>Mo</b>	<b>Tc</b>	<b>Ru</b>	<b>Rh</b>	<b>Pd</b>	<b>Ag</b>	<b>Cd</b>	<b>In</b>	<b>Sn</b>	<b>Sb</b>	<b>Te</b>	<b>I</b>	<b>Xe</b>						
		55	56	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86						
		<b>Cs</b>	<b>Ba</b>	<b>Lu</b>	<b>Hf</b>	<b>Ta</b>	<b>W</b>	<b>Re</b>	<b>Os</b>	<b>Ir</b>	<b>Pt</b>	<b>Au</b>	<b>Hg</b>	<b>Tl</b>	<b>Pb</b>	<b>Bi</b>	<b>Po</b>	<b>At</b>	<b>Rn</b>						
		87	88	103	104	105	106	107	108	109	110	111													
		<b>Fr</b>	<b>Ra</b>	<b>Lr</b>	<b>Rf</b>	<b>Db</b>	<b>Sg</b>	<b>Bh</b>	<b>Hs</b>	<b>Mt</b>	<b>Ds</b>	<b>Rg</b>													

57	58	59	60	61	62	63	64	65	66	67	68	69	70
<b>La</b>	<b>Ce</b>	<b>Pr</b>	<b>Nd</b>	<b>Pm</b>	<b>Sm</b>	<b>Eu</b>	<b>Gd</b>	<b>Tb</b>	<b>Dy</b>	<b>Ho</b>	<b>Er</b>	<b>Tm</b>	<b>Yb</b>
89	90	91	92	93	94	95	96	97	98	99	100	101	102
<b>Ac</b>	<b>Th</b>	<b>Pa</b>	<b>U</b>	<b>Np</b>	<b>Pu</b>	<b>Am</b>	<b>Cm</b>	<b>Bk</b>	<b>Cf</b>	<b>Es</b>	<b>Fm</b>	<b>Md</b>	<b>No</b>





*English translation of the wording on the front cover*

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## Level 1 Science, 2011

### 90944 Demonstrate understanding of aspects of acids and bases

9.30 am Monday 21 November 2011  
Credits: Four

**RESOURCE BOOKLET**

Refer to this booklet to answer the questions for 90944.

Check that this booklet has pages 2–5 in the correct order and that none of these pages is blank.

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