

4YRaeVc'

EVRIYVcd`W ReYV^ ReZTd

DZ TV eYV eVRIYVc ZITV_ eR] Z TcVReZ XR T]Rdt` ` ^ V_gZ` _ ^ V_e eYRe
 d' aa` ced]Vrc_Z X^ ReYV^ ReZTd 4YRaeVc' acVdV_edZ Wc^ ReZ_ RS` f e
 eYV acVaRcReZ_ R USRT\Xc` f_U` W ReYV^ ReZTd eVRIYVcdZ eYVaRd
 eZTaReZ XT f _ ecZ dZ EYV TYRa eVc SVXZ dh ZY Z Wc^ ReZ_ RS` f e eYV
]ZV_dZ XR_Uz` c TVceZ TreZ_ cVbf ZV^ V_ed Wc eVRIYZ X^ ReYV^ ReZTd
 Re eYV VZY eY R_U Wf ceY XcRUVDZ eYVE: > DDT f _ ecZ dZ EYV? ReZ_R]
 CVdMrcTY 4` ` dZ Re` cdh VcVcVh` _ dS]VWc ac` gZLZ X eYZLZ Wc^ ReZ_
 RdaRce` W^ a]VeZ X eYV 4f ccZf]f ^ Bf Vdz __ RZVZ

EYVcV^ RZ_Z XdMeZ_d` W eYV TYRa eVc Z T]f UVZ Wc^ ReZ_ RS` f e
 eYVUV^ ` XcRaYZ TYRcRIeVc ZTd` W eYV eVRIYZ XWcIVR_ URS` f e eVRIY
 Vcd VUf TRZ_R] SRT\Xc` f _UR_ U acVaRcReZ_ LZ T]f UZ X` aa` cf _ ZVd
 Wc ac` WdZ_R] UVgV] a^ V_e Z` T]]VTeZ Wc^ ReZ_ W^ eVRIYVcd
 E: > DDRU^ Z Z eVcUR h` laRcebf Vdz __ RZVZ h YZY eVRIYVcdh VcV
 RdVUe` ac` gZLVZ Wc^ ReZ_ RS` f e eYVZ SRT\Xc` f _UR_ U ecRZ_Z XR_U
 eYVZ Z dcf TeZ_R] acRIeZTd 4YRaeVc' VdV_eR]j acVdV_ed eVRIYVcd
 cVh` _ dVd eYV} cbaRce` W eYVbf Vdz __ RZVh YZV 4YRaeVc (acVd
 V_edZ Wc^ ReZ_ W^ eYV dMT _ UaRce RS` f e T]Rdt` ` ^ Z dcf TeZ_Z

3VIRf dV eYV dR^ a]Z XWc eYV eVRIYVc bf Vdz __ RZVdh RdSRdMU
 ` _ aRceZTaReZ Xdf UV_ed eVRIYVcd cVh` _ dVdU` _ ` e_VIVdRcZj cVal
 cVd_eR]] VZY eY XcRUV` c R]] Wf ceY XcRUV^ ReYV^ ReZTd eVRIYVcdZ
 VRIY T f _ eJ ZCReYVd eYVj cV acVdV_e eVRIYVcd` W eYV cV acVdV_e ReZV

dR^ a]Vd` Wbf UV_ edRdVdMŹ:eZlZ` a` œR_eè` _` eVeYReh YV_ Z_ Wd
^ ReZ_ W^ eYV eRIYVc bf VdZ__RZVZlSVZ` XcVa` œVULeYV df UV_e
ZlRjh Rj deYVf` Z` WR_Rlj dZŹEYReZLeYVURdY` h_ RcVeYVaVcTV_ d
RXVd` Wbf UV_ ed h Y` dVeRIYVdcVa` œVU` _ gRcZ f dTYRcRTEvcZŹZTd
` c Z_ def TeZ` Rj deReVZVŹF dZ` XeYV df UV_e Rd eYV f` Z` WR_Rlj dZlR_R

Wf ceY XcRUVčZ4` f _ecZdh VcVRd\ VURS` f e} gVcVbf ZV^ V _edLZ T]f UZ X
 cf aVcgZMU adRteZTR] Vi aVcZ\ TV1adRteZTF ^ /LaRdLZ XR_ Vi R^ Z ReZ _L
 `SeRZ_Z XRF _ZgVcdLj UvXcWLT ^ a]VeZ _ `VR ac` SR eZ _Rj aVcZ ULR U
 T ^ a]VeZ _ `VR_ Z Uf TeZ _ ac` XcR^ Ž2 eeYV VZYeY XcRUM(! aVcTV_e
 `VeYVE:> DDT f _ecZd1SS` f e` Wf(/ R_U eYcWSV_TY^ Rc\Z XV_ eZVd
 cVbf ZVURf _ZgVcdLj UvXcW1` c Vbf ZgR]V_ e` R_U [f deRd^ R_j aRceZIZ
 aR_ edcVbf ZMU W}]]^ V_e` Wf ^ V e j aV` V acRteZTF ^ Wc TVceZ TR eZ_
 RdR^ ReYV^ ReZTd eRiYVcZ:_ ^ `cV eYR_ YR]W VeYVT f _ecZd1#) ` f e
 `Wf(/ R_UR]) `VeYVSV_TY^ Rc\Z XaRceZIZaR_ edLTVceZ TR eZ_ cVbf ZVU
 aRdLZ XR_ Vi R^ Z ReZ _Ž2 ac` SR eZ _Rj aVcZ U h Rd cVbf ZVU Z_ #S
 T f _ecZdR_U eh` SV_TY^ Rc\Z XV_ eZVdZ@VeYVE:> DDT f _ecZdL" "
 cVbf ZVUT ^ a]VeZ _ `VR_ Z Uf TeZ _ ac` XcR^ RdUUh` `VeYVSV_TY
 ^ Rc\Z XV_ eZVdZ7 ceYVF_ZMUD eRvdR_U 4R_RURLZ eY` f]USV_` eV
 eYRe cVbf ZV^ V _edWc TVceZ TR eZ_ gRj Ri c` d d eRvdR_U ac` gZ TVdZ

2eeYVWf ceY XcRUM^ ` de` VeYVE:> DDT f _ecZd1"* ` f e` Wf /
 R_UR]) eYcW` VeYVSV_TY^ Rc\Z XaRceZIZaR_ edcVbf ZVU d ^ V e j aV` W
 adRteZTF ^ Wc TVceZ TR eZ_ Ž6ZYeW_ `VeYVT f _ecZdaRceZIZaReZ_XReeYV
 Wf ceY XcRUV_R_UR]) eYcW` VeYVSV_TY^ Rc\Z XaRceZIZaR_ edcVbf ZVU
 eh` `c^ `cV` VeYVW])` h_Z XWc TVceZ TR eZ_ €aRdLZ XR_ Vi R^ Z ReZ _L
 Rf _ZgVcdLj UvXcWLT` cT ^ a]VeZ _ `VR ac` SR eZ _Rj aVcZ UZDZ ZRc
 e` eYV VZYeY XcRUM eYVWh Vde_f ^ SVc` Wwf ceY XcRUV aRceZIZaR_ ed
 cVbf ZVUT ^ a]VeZ _ `VR_ Z Uf TeZ _ ac` XcR^ Ž

Gi YZze' Ž# T _eRZ daRceZIZaR_ ed cVa` cedRS` f e eYV` cXR_ ZkRi
 eZ_ `cRf eY` cZj cVda` _dS]VWc XcR_ eZ_XTVceZ TR eZ_ Wc^ ReYV^ ReZTd

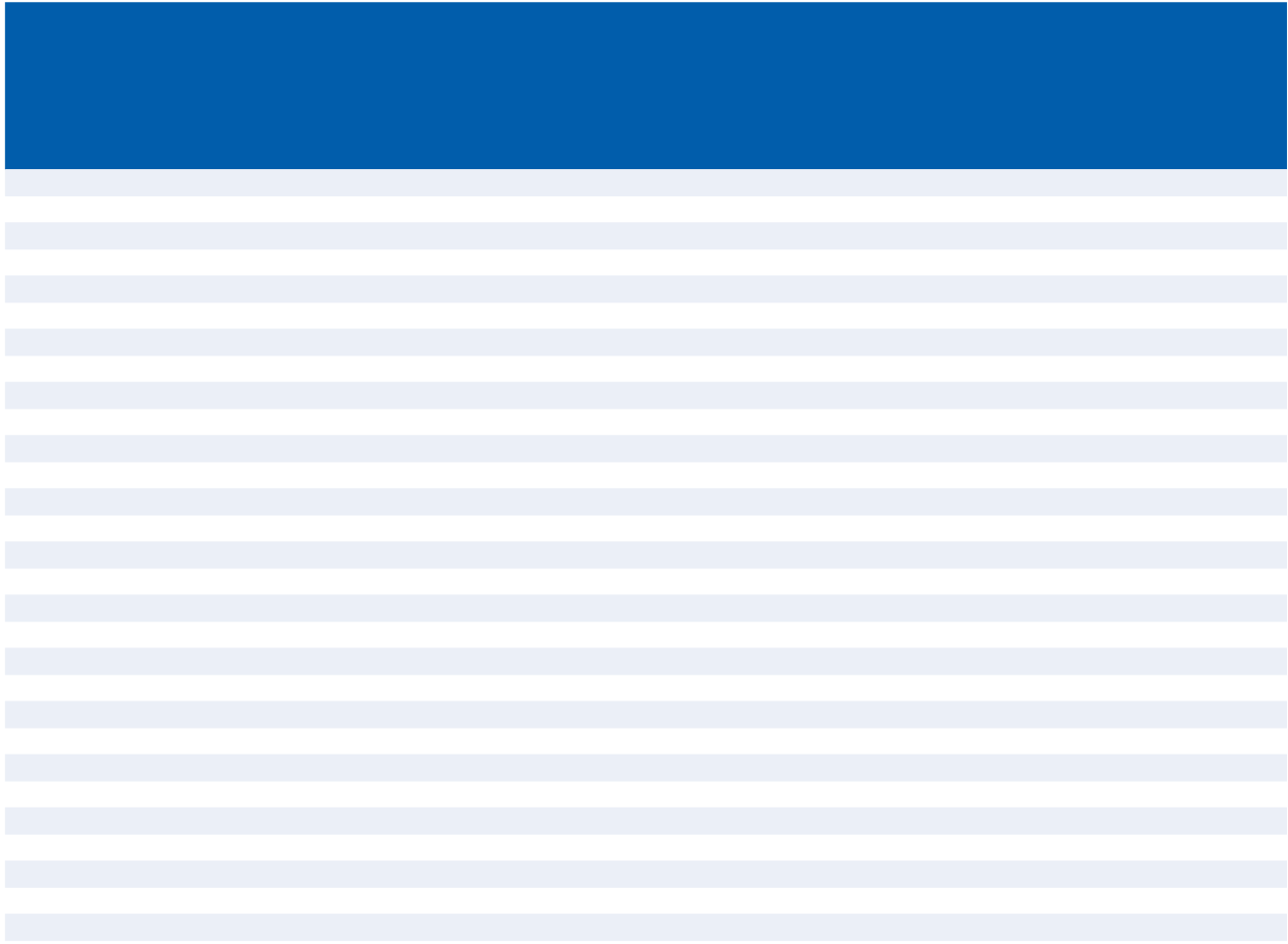
Grade

	MATHEMATICS Grade
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What Are the Background Characteristics of Mathematics Teachers?

Gi YZSE' Š acVdV_ edRT _ dUVcRSjVR^ ` f_e` WZ Wc^ ReZ_ RS` f e eYV
 SRT\Xc` f _ UTYRcRTeVcZēZTd` W ReYV^ ReZTd eRIYVcdRe eYV VZYeY R_ U
 Wf ceY XcRUVdLZ Tj f UZ_ XeYVZ_ XV_ UVdL RXVL TVceZ; TReZ_ deRef dLR_ U
 f ^ Sv` VjVRcd` V eRIYZ XVI aVcZ_ TVZēj aZIRjij LjRcXvc aVcTV_ eRXVd` W
 df UV_ edh VcVerf Xye^ ReYV^ ReZTdSj W RjVeRIYVcd eYR_ ^ RjVeRIYI
 VcdLaRceZf jRcj Re eYV Wf ceY XcRUVZ2 e eYV VZYeY XcRUM` _ RgVcRXML
 Z_ eVc_ ReZ_ Rjij L&) aVcTV_ e` V eYV df UV_ edh VcVerf Xye^ ReYV^ ReZTdSj
 W RjVdR_ U%# aVcTV_ eSj ^ RjVdLR_ UdZ ZRc aVcTV_ eRXVdh VcV Wf _ U
 Z_ R_ f ^ Sv` W f _ ecZdZ9` h VgVdLRe jVRcd) &aVcTV_ e` Wdf UV_ edYRU
 W RjVeRIYVcdZ_ 2c^ V_ ZRL3f jXRcZRL6cd` _ ZRL9f _ XRcj L=RegZRL=Zyf l
 R_ ZRL> ` jU gRL eYV Cf dLR_ 7UVVReZ_ LR_ UDj` gV_ ZRZ3j T_ ecRdL` _ j
 Z_ 6Xj aeR_ U8YR_ Rh VcVRd^ R_j Rd) &aVcTV_ e` V eYV df UV_ ed eYV
 ^ ReYV^ ReZTdSj ^ RjVeRIYVcdZ2 e eYV Wf ceY XcRUM` _ RgVcRXMLZ_ eVd
 _ ReZ_ Rjij L Wf d} WYd` V eYV ^ ReYV^ ReZTd eRIYZ_ XWcIV h Rd W RjVZ
 2Tc` dleYVaRceZTZR_ eLZ_ VRIY T f _ eY Lh ZY eYV Vi TVaeZ_ ` W ` c` TT
 R_ Uef _ ZIRRe jVRcd & aVcTV_ eLR_ U` W W_ R^ f TY YZYVc aVcTV_ eRXML` W
 eYV Wf ceY XcRUV df UV_ edh VcVerf XyeSj W RjVeRIYVcdZ
 =` ` \Z_ Xe` eYV jRcd T jf ^ _ ` V6i YZSE' ŠLZēTR_ SVdW_ eYRdLZ
 XV_ VcRjLe

Exhibit 6.3:



SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Exhibit 6.3:

Armenia	88 (2.6)	12 (2.6)	8 (1.9)	25 (3.2)	38 (3.8)	30 (4.0)	r	92 (2.2)	20 (0.9)
Australia	75 (4.2)	25 (4.2)	21 (3.5)	14 (2.4)	46 (4.4)	19 (3.0)	r	91 (2.4)	17 (0.9)
Belgium (Flemish)	78 (2.7)	22 (2.7)	23 (2.9)	37 (3.1)	27 (2.9)	14 (2.1)		100 (0.0)	16 (0.7)
Chinese Taipei	80 (2.9)	20 (2.9)	26 (3.4)	44 (4.0)	23 (3.0)	7 (2.2)		88 (2.6)	11 (0.7)
Cyprus	79 (3.3)	21 (3.3)	39 (4.3)	50 (4.3)	5 (1.7)	7 (2.2)		--	11 (0.7)
England	r 73 (4.2)	27 (4.2)	r 30 (4.7)	24 (4.4)	25 (3.8)	21 (3.5)		--	r 12 (1.0)
Hong Kong, SAR	73 (4.3)	27 (4.3)	34 (4.5)	34 (4.3)	15 (2.8)	17 (3.9)		89 (2.6)	13 (1.1)
Hungary	94 (1.8)	6 (1.8)	8 (2.1)	33 (3.7)	40 (3.7)	19 (3.2)		--	19 (0.8)
Iran, Islamic Rep. of	51 (4.8)	49 (4.8)	14 (3.4)	39 (4.2)	39 (4.4)	8 (2.6)		33 (4.2)	16 (0.7)
Italy	96 (1.2)	4 (1.2)	3 (1.4)	18 (2.4)	39 (3.6)	39 (3.3)		97 (1.3)	21 (0.6)
Japan	63 (3.8)	37 (3.8)	11 (2.8)	27 (3.3)	39 (4.1)	23 (3.6)		99 (1.0)	19 (0.8)
Latvia	99 (0.6)	1 (0.6)	6 (1.8)	38 (3.9)	31 (4.0)	25 (3.5)		--	20 (0.9)
Lithuania	99 (0.6)	1 (0.6)	12 (2.2)	37 (3.1)	32 (3.1)	19 (2.6)		100 (0.0)	19 (0.7)
MO (CAEP)	C (HA/E) gFA	FK (HA(EA))	E B B	EB(BAM)					

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

What Preparation Do Teachers Have for Teaching Mathematics?

Gi YZSzd' Ž%eYc` f XY' Ž acVdV_e eRIYVcd cVa` cedRS` f eYVZ acVaRcRi eZ_ e` eRIY ^ ReYV^ ReZdLZ Tf UZ XVUF TReZ _Rj Vi aVcZV TVdSWWcV Rlcf Rlj eRIYZ XR_U` aa` cf _ZAdWc UVgV] aZ XeYVZ: Vi aVceZVRWc V_eVcZ XeYVac` WdZ _ i` W_ cWwccUe` RdacMdVcgZIVR_UZ l dVcgZIV eRZ_Z XZ

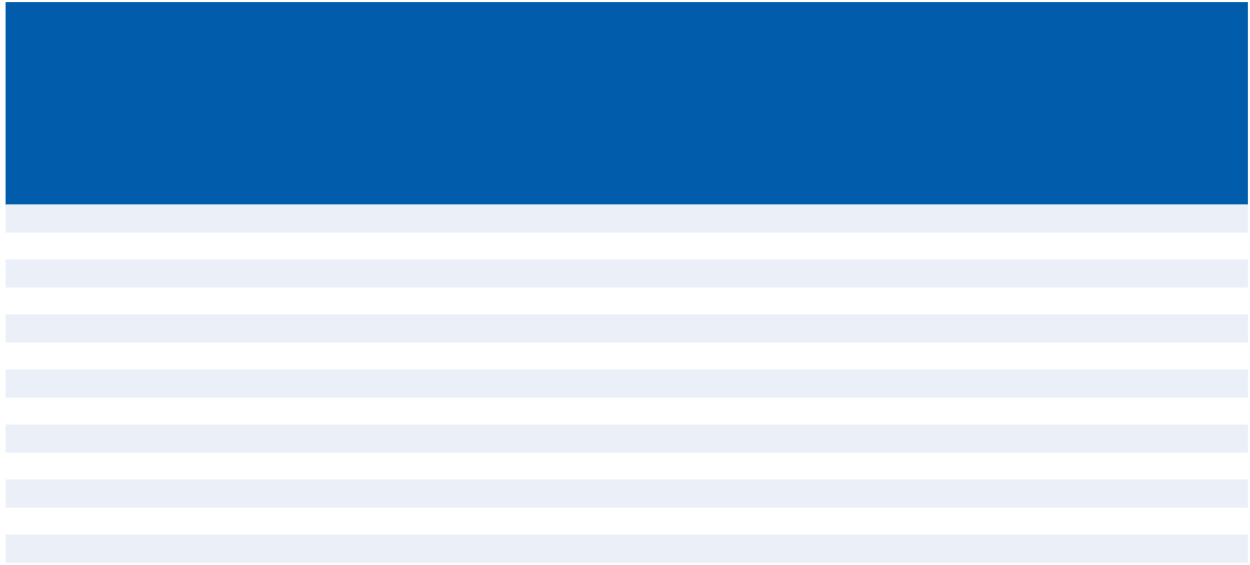
Gi YZSZe' Ž%acVdV_e eRIYVcd YZYVde]VgV]` WWUF TReZ_ Ž6gV_eY` f XY eYV aVcIV_eRXVd h VcV d ^ Vh YRe YZYVc Re eYV VZYeY XcRUV eYR_ eYV Wf ceY XcRUMLaac` i Z ReVlj ch` l eYZud` WeYV VZYeY R_U Wf ceY XcRUV df UV_edh VcV eRf XYe^ ReYV^ ReZdSj eRIYVcd YRgZ XRe]VRdeRf _ZgVcdZj UXcW` c Vbf ZgRjV_eZ e eYVVZYeY XcRUML&* aVcIV_e` WeYV df UV_edh VcV eRf XYeSj eRIYVcd h ZY Rf _ZgVcdZj UXcWR_U R_` eYVc" (aVcIV_eSj eRIYVcd h Y` YRUT f ccMh` c\ Svj` _UeYVZ ZRj f _ZgVcdZj UXcWZ e eYV Wf ceY XcRUML&# aVcIV_e` WeYV df UV_edh VcV eRf XYeSj eRIYVcd h ZY Rf _ZgVcdZj UXcWR_U R_` eYVc" \$ aVcIV_eSj eRIYVcd h ZY T f ccMh` c\ Svj` _UeYReUXcWZ

5VcaZVRcV]ReZgVj h V]j]VUF TReVU eRIYZ_XWcTM` _ RgVcRXM eYVcd f ReZ_gRcZUUCR^ ReZIRlj R^` _XT f _ecZdZ e eYVVZYeY XcRUML Wc Vi R^ a]VLe]VRde YR]WeYV df UV_edh VcV eRf XYeSj eRIYVcd h ZY h` c\ Svj` _UeYVZ ZRj f _ZgVcdZj UXcWZ_ 2c^ V_ZL2f d eRjZL3f]l XRZLeYV Cf dR_ 7UVcReZ_ Lef_ZRLR_UeYVF_ZeU DeRvdZ:_ T_l eRdeL (# aVcIV_e` WeYVVZYeY XcRUV df UV_edZ_ >` c` TT h VcV eRf XYeSj eRIYVcd` _lj YRgZ_XT ^ a]VeUdM_T_URj dIY`]Z

2TT cUZ_Xe` eYV cVdf]ed` WeYV 4f ccZif]f ^ Bf VdeZ__RZVL Rj^` deRj]` WeYV df UV_e daRceZTaReZ_XZ_ E:> DD#!! \$ h VcV df aa` dU e` SV]VRc_Z_X^ ReYV^ ReZdRIT dUZ_Xe` R_ReZ_Rj] iWc^` deT f _ecZd` `c cVXZ_Rj Tf ccZif]f ^ ŽE` XReYVc d ^ VZ_Wc^ ReZ_RS` f eT YVcV_TV SVh W_ eYVZ_eV_UU Tf ccZif]f ^ R_U eRIYVc acVaRcReZ_L eYV 4f d cZif]f ^ Bf VdeZ__RZVRj d RdVURS` f e daVIZ TeRIYVc eRZ_Z_XZ_Y` h e` eRIY eYZl Tf ccZif]f ^ € RdaRce` WZeYVc eRIYVcd acMdVcgZIV` c_Z_l dVgZIVUF TReZ_ ŽGi YZSZe' Ž&YRdeYVcVdf]edŽeYV^ Rj` cZj` `Wf _ecZd R_USV_TY^ Rc\Z_XaRceZTaR_ edcVa` ceMU acVaRcReZ_ Z_Y` h e` eRIY

eYVZ eV_UU Tf ccZif]f ^ RdaRce `VŠ` eY acM R_UZ hMcgZIV ecRZ_Z_XL
 R_U^ ` de cVa` ceVUT gVdRXV_Z Re]VRde ` _V` WēYVdVa]RTVdŽ4` f _ecZd
 cVa` ceZ_X_` daVIZ T ecRZ_Z_XZ_Y` h è eVRIY eYVZ eV_UU Tf ccZif]f ^
 U Za

Exhibit 6.6:



SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Exhibit 6.6:



Armenia
Australia
Belgium (Flemish)
Chinese Taipei
Cyprus
England
Hong Kong, SAR
Hungary
Iran, Islamic Rep. of
Italy
Japan
Latvia
Lithuania
Moldova, Rep. of
Morocco
Netherlands
New Zealand
Norway
Philippines
Russian Federation
Scotland
Singapore
Slovenia
Tunisia
United States
International Avg.
Indiana State, US
Ontario Province, Can.
Quebec Province, Can.

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Exhibit 6.7:



Armenia
Australia
Bahrain
Belgium (Flemish)
Botswana
Bulgaria

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Exhibit 6.8:

MATHEMATICS
Grade



Armenia	## 1\$Z/	' (1\$Z/	"# 1#Z/	" " 1#Z/	' \$ 1%Z/	# 1\$Z/
Australia	# 1"Z/	" \$ 1#Z/)& 1#Z/	& 1#Z/	"' 1\$Z/)! 1\$Z/
Bahrain	# 1"Z/	% 1#Z/	&# 1#Z/	' 1#Z/	\$% 1\$Z/	'! 1\$Z/
Belgium (Flemish)	! 1!Z/	" 1!Z/	** 1!Z/	& 1"Z/	# 1!Z/	*\$ 1#Z/
Botswana	(1#Z/	& 1&Z/	ir-5à • % 1%Z/	î! î!3Fs6WZ%	% 1%Z/	%# 1%Z/
Bulgaria	\$ 1"Z/	") 1\$Z/	(* 1\$Z/	" 1!Z/	"' 1\$Z/)\$ 1\$Z/
Chile	' 1#Z/	(1#Z/)(1#Z/)(' 1		

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Exhibit 6.8:

MATHEMATICS
Grade

Country	2003	2006	2009	2012	2015	2018	2021
Armenia	47 (3.6)	48 (3.7)	5 (1.3)	r 30 (4.1)	55 (4.3)	15 (2.1)	
Australia	51 (4.2)	37 (4.8)	12 (2.7)	54 (4.6)	31 (4.9)	15 (2.9)	
Belgium (Flemish)	52 (3.5)	40 (3.5)	9 (2.0)	41 (3.8)	37 (3.6)	23 (2.6)	
Chinese Taipei	54 (4.1)	44 (4.2)	2 (1.2)	24 (3.4)	52 (4.5)	25 (3.7)	
Cyprus	59 (3.9)	36 (3.7)	5 (1.7)	59 (3.6)	32 (3.2)	9 (2.0)	
England	r 61 (5.2)	28 (5.0)	10 (2.7)	r 62 (4.9)	20 (4.2)	17 (3.5)	
Hong Kong, SAR	41 (4.5)	49 (4.5)	9 (2.3)	17 (3.4)	60 (4.8)	24 (4.1)	
Hungary	55 (4.3)	41 (4.2)	4 (1.2)	57 (4.2)	35 (3.9)	7 (2.3)	
Iran, Islamic Rep. of	62 (4.3)	35 (4.2)	3 (1.7)	64 (4.6)	31 (4.5)	5 (2.0)	
Italy	47 (3.0)	42 (3.0)	11 (2.0)	55 (3.6)	32 (3.3)	13 (2.5)	
Japan	52 (4.3)	37 (4.3)	11 (2.6)	41 (4.0)	45 (4.3)	14 (2.5)	
Latvia	43 (4.1)	45 (4.5)	13 (2.8)	36 (3.9)	56 (4.0)	9 (2.4)	
Lithuania	60 (3.5)	33 (3.4)	7 (1.9)	68 (3.2)	27 (3.0)	5 (1.8)	
Moldova, Rep. of	57 (4.3)	37 (4.2)	6 (2.0)	74 (3.3)	18 (3.1)	8 (2.2)	

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Exhibit 6.8:

MATHEMATICS
Grade 4



SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

> `cV eYR_)! aVcTV_e` WeYV df UV_ edh VcV eRf XYe ^ ReYV^ ReZTdSj
eVRIYVcdYRgZ_XRJMcd ^ Vac` WdZ_ R] UGv]` a^ V_eedRZ_Z_XZ_ eYVdV
RcVRdZ

Gi YZS' Z acVdV_ ed eVRIYVcd cVa` cedRS` f eYVZ ac` WdZ_ R]

Exhibit 6.9: Readiness to Teach Mathematics (Continued...)



Armenia	r	99 (0.7)	r	100 (0.0)	r	98 (1.3)	r	99 (0.1)	100 (0.3)	r	99 (0.5)	r	99 (0.8)	r	98 (1.0)	
Australia		100 (0.0)		99 (1.2)		97 (0.7)		97 (1.5)	100 (0.0)		100 (0.0)		99 (0.8)		98 (1.1)	
Bahrain		96 (2.0)		95 (1.3)		94 (2.3)		93 (1.9)	99 (0.5)		98 (0.5)		x x		96 (1.7)	
Belgium (Flemish)		94 (1.6)		98 (1.0)		83 (2.8)		91 (2.4)	98 (0.8)		98 (1.0)		90 (2.2)		98 (0.9)	
Botswana	r	99 (1.0)	r	98 (1.3)	r	89 (3.1)	r	84 (3.7)	r	97 (1.9)	r	97 (1.7)	r	95 (2.2)	r	96 (2.1)
Bulgaria		99 (0.6)		99 (0.6)		98 (0.9)		97 (1.4)	98 (1.1)		100 (0.0)		100 (0.0)		100 (0.0)	
Chile		99 (0.9)		98 (1.1)		91 (2.6)		93 (2.1)	98 (1.1)		100 (0.0)		96 (1.6)		76 (3.0)	
Chinese Taipei		98 (1.1)		99 (0.9)		99 (0.6)		100 (0.0)	100 (0.0)		100 (0.0)		98 (0.9)		96 (1.6)	
Cyprus		100 (0.0)		98 (0.0)		95 (1.4)		96 (1.1)	100 (0.0)		100 (0.0)		100 (0.0)		90 (1.7)	
Egypt		97 (1.5)		94 (2.4)		93 (2.1)		94 (2.2)	100 (0.0)		100 (0.0)		x x	r	99 (0.9)	
Estonia		100 (0.4)		100 (0.4)		100 (0.4)		99 (0.8)	99 (0.6)		100 (0.4)		100 (0.4)		99 (0.7)	
Ghana		97 (1.3)		89 (3.4)		79 (4.3)	r	94 (2.3)	96 (2.1)		97 (1.6)	r	94 (2.6)		94 (2.4)	
Hong Kong, SAR		100 (0.1)		100 (0.0)		99 (0.9)		99 (1.1)	100 (0.0)		100 (0.0)		100 (0.0)		96 (1.8)	
Hungary		99 (0.5)		100 (0.4)		99 (0.8)		100 (0.4)	100 (0.4)		100 (0.4)		86 (3.1)		100 (0.4)	
Indonesia	s	99 (0.9)	s	99 (1.0)	s	96 (1.9)	s	96 (1.9)	s	95 (1.8)	s	97 (1.9)	s	100 (0.0)	s	87 (3.7)
Iran, Islamic Rep. of		97 (1.4)		93												

SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

Background data provided by teachers

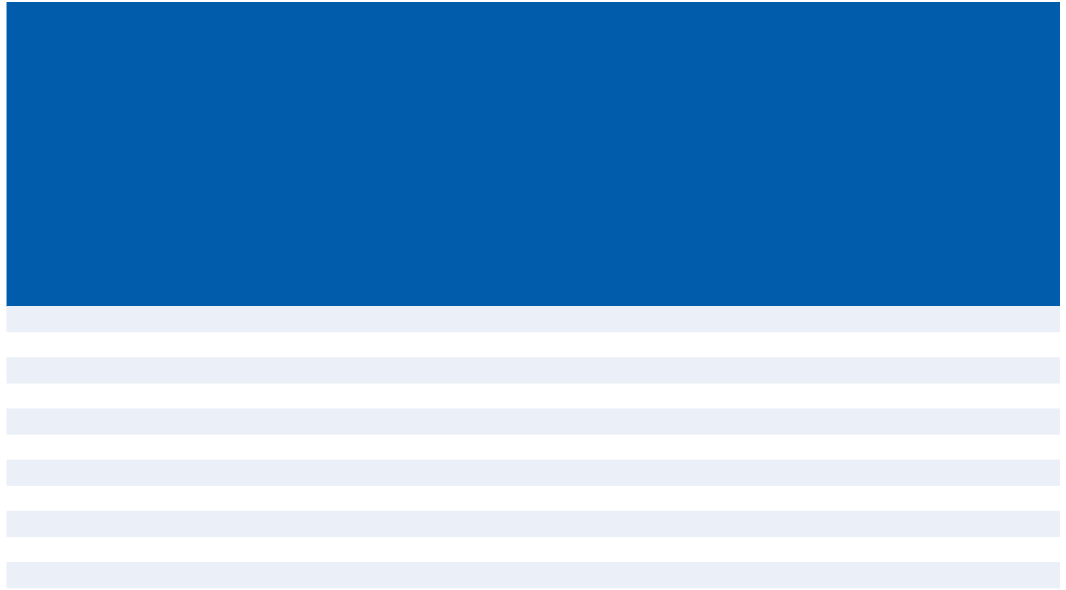
- f1 Did not satisfy guidelines for sample participation rates (see Exhibit A.9).
- () Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (-) indicates comparable data are not available.

An "r" indicates data are available for at least 70 but less than 85% of the students. An "s" indicates data are available for at least 50 but less than 70% of the students. An "x" indicates data are available for less than 50% of the students.

Exhibit 6.9:

MATHEMATICS
Grade 4



SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

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Exhibit 6.9:

MATHEMATICS
Grade



SOURCE: IEA's Trends in International Mathematics and Science Study (TIMSS) 2003

