PIRLS 2016 Item Parameters

Item	Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})	Step 3 (d_{j3})
Items Released in 2011:						
R21E01M	1.375 (0.091)	-1.108 (0.077)	0.378 (0.035)			
R21E02M	1.143 (0.071)	-0.344 (0.061)	0.287 (0.027)			
R21E03M	0.552 (0.045)	-0.337 (0.127)	0.153 (0.039)			
R21E04M	1.452 (0.091)	-1.076 (0.067)	0.330 (0.033)			
R21E05C	0.619 (0.017)	-0.495 (0.025)		-0.539 (0.051)	0.539 (0.044)	
R21E06M	1.323 (0.076)	-0.228 (0.046)	0.242 (0.023)			
R21E07C	0.657 (0.021)	-0.243 (0.023)		0.180 (0.042)	-0.180 (0.036)	
R21E08M	1.321 (0.081)	0.477 (0.032)	0.162 (0.015)			
R21E09C	0.534 (0.021)	0.735 (0.031)		0.534 (0.042)	-0.534 (0.053)	
R21E10C	0.964 (0.035)	-0.174 (0.025)				
R21E11M	0.901 (0.071)	0.266 (0.065)	0.249 (0.026)			
R21E12C	0.780 (0.026)	0.173 (0.019)		0.315 (0.032)	-0.315 (0.032)	
R31P01M	1.106 (0.057)	-0.484 (0.051)	0.149 (0.025)			
R31P02C	0.856 (0.032)	-0.776 (0.035)				
R31P03C	1.095 (0.038)	-0.529 (0.025)				
R31P04M	0.990 (0.067)	0.583 (0.040)	0.130 (0.017)			
R31P05C	0.649 (0.019)	0.421 (0.020)		-0.310 (0.040)	0.310 (0.042)	
R31P06C	1.353 (0.046)	-0.613 (0.023)				
R31P07C	0.941 (0.024)	-0.117 (0.016)		-0.137 (0.031)	0.137 (0.028)	
R31P08M	1.090 (0.068)	-0.335 (0.063)	0.263 (0.028)			
R31P09C	1.199 (0.041)	-0.485 (0.024)				
R31P10M	1.769 (0.095)	-0.520 (0.039)	0.240 (0.023)			
R31P11M	1.152 (0.063)	-0.226 (0.048)	0.171 (0.023)			
R31P12M	1.342 (0.076)	0.133 (0.036)	0.182 (0.019)			
R31P13M	1.325 (0.072)	-0.753 (0.056)	0.221 (0.030)			
R31P14C	1.184 (0.041)	0.028 (0.020)				
R31P15C	0.630 (0.023)	0.397 (0.022)		0.173 (0.038)	-0.173 (0.041)	
R31P16C	0.783 (0.036)	0.744 (0.033)				
R21N01M	0.852 (0.059)	-0.640 (0.099)	0.281 (0.037)			
R21N02C	0.780 (0.030)	-0.494 (0.033)				
R21N03C	0.747 (0.028)	1.061 (0.029)		0.353 (0.031)	-0.353 (0.047)	
R21N04M	1.175 (0.074)	0.207 (0.042)	0.207 (0.020)			
R21N05M	1.610 (0.093)	-0.856 (0.051)	0.276 (0.029)			
R21N06M	1.457 (0.076)	-0.475 (0.042)	0.201 (0.023)			
R21N07M	1.074 (0.066)	-0.043 (0.052)	0.205 (0.024)			
R21N08C	0.933 (0.034)	-0.269 (0.026)				
R21N09M	1.178 (0.072)	-0.337 (0.058)	0.270 (0.027)			
R21N10M	0.878 (0.073)	0.249 (0.073)	0.284 (0.028)			
R21N11C	0.555 (0.016)	-0.010 (0.023)		-0.555 (0.050)	0.555 (0.048)	
R21N12C	0.636 (0.022)	0.115 (0.021)		0.080 (0.041)	-0.080 (0.039)	
R31G01M	1.116 (0.066)	-0.513 (0.064)	0.257 (0.030)			
R31G02C	0.680 (0.028)	-0.160 (0.031)				
R31G03M	1.100 (0.067)	-0.303 (0.060)	0.253 (0.027)			
R31G04C	0.863 (0.038)	0.982 (0.036)				
R31G05M	1.178 (0.091)	0.481 (0.045)	0.288 (0.020)			
R31G06M	1.019 (0.059)	-0.309 (0.059)	0.195 (0.027)			
R31G07M	1.101 (0.066)	0.088 (0.045)	0.180 (0.021)			
R31G08CZ	0.792 (0.028)	0.977 (0.026)		0.264 (0.029)	-0.264 (0.042)	
R31G09M	0.877 (0.061)	0.079 (0.064)	0.197 (0.026)			
R31G10C	0.993 (0.038)	0.566 (0.024)				
R31G11M	1.612 (0.107)	0.336 (0.034)	0.302 (0.017)			
R31G12C	0.465 (0.018)	1.639 (0.059)		-0.863 (0.063)	0.863 (0.086)	
R31G13CZ	0.819 (0.019)	0.157 (0.013)		-0.280 (0.039)	0.108 (0.044)	0.171 (0.036)
R31G14M	1.312 (0.088)	0.359 (0.039)	0.241 (0.019)			

PIRLS 2016 Item Parameters

Item	Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})	Step 3 (d_{j3})
Items Common in 2011 and 2016:						
R11F01M	1.334 (0.049)	-0.627 (0.034)	0.148 (0.018)			
R11F02M	0.666 (0.038)	-0.848 (0.111)	0.243 (0.037)			
R11F03M	0.920 (0.039)	-0.666 (0.054)	0.157 (0.024)			
R11F04M	1.307 (0.053)	-0.831 (0.044)	0.228 (0.023)			
R11F05M	0.940 (0.045)	-0.255 (0.052)	0.217 (0.022)			
R11F06C	0.776 (0.023)	-0.152 (0.021)				
R11F07C	0.503 (0.010)	0.375 (0.018)		-0.896 (0.041)	0.896 (0.043)	
R11F08C	1.149 (0.029)	-0.328 (0.017)				
R11F09C	1.011 (0.022)	-0.627 (0.015)		0.074 (0.027)	-0.074 (0.020)	
R11F10C	0.846 (0.026)	-1.419 (0.039)				
R11F11M	0.739 (0.045)	0.208 (0.061)	0.192 (0.023)			
R11F12C	0.618 (0.014)	0.642 (0.017)		-0.471 (0.032)	0.471 (0.036)	
R11F13M	1.124 (0.054)	-0.199 (0.046)	0.270 (0.021)			
R21Y01M	1.097 (0.055)	0.154 (0.038)	0.253 (0.017)			
R21Y02M	1.649 (0.070)	-0.204 (0.029)	0.288 (0.016)			
R21Y03C	0.815 (0.025)	0.564 (0.021)				
R21Y04M	1.273 (0.056)	0.093 (0.031)	0.222 (0.015)			
R21Y05M	1.721 (0.070)	0.086 (0.022)	0.226 (0.013)			
R21Y06M	1.533 (0.062)	0.042 (0.025)	0.209 (0.014)			
R21Y07M	0.792 (0.037)	-1.011 (0.079)	0.182 (0.030)			
R21Y08M	1.360 (0.058)	-0.271 (0.035)	0.261 (0.018)			
R21Y09C	0.956 (0.020)	-0.551 (0.015)		0.078 (0.027)	-0.078 (0.020)	
R21Y10C	0.749 (0.024)	0.574 (0.023)				
R21Y11M	1.411 (0.065)	0.035 (0.032)	0.284 (0.016)			
R21Y12C	0.706 (0.012)	-0.001 (0.014)		-1.154 (0.039)	1.154 (0.038)	
R21Y13C	0.760 (0.017)	0.378 (0.011)		0.594 (0.026)	-0.219 (0.028)	-0.375 (0.031)
R21Y14C	0.576 (0.013)	0.222 (0.016)		-0.549 (0.036)	0.549 (0.036)	
R31M01M	1.451 (0.062)	-0.877 (0.043)	0.268 (0.023)			
R31M02C	1.218 (0.033)	-0.957 (0.023)				
R31M03M	1.330 (0.057)	-0.004 (0.031)	0.228 (0.016)			
R31M04C	0.560 (0.020)	0.357 (0.028)				
R31M05M	1.551 (0.083)	0.112 (0.034)	0.424 (0.015)			
R31M06M	1.159 (0.063)	0.368 (0.036)	0.283 (0.016)			
R31M07M	1.619 (0.068)	-0.350 (0.031)	0.276 (0.017)			
R31M08M	1.382 (0.058)	-0.498 (0.038)	0.265 (0.020)			
R31M09C	0.759 (0.015)	-0.030 (0.017)		1.143 (0.027)	-1.143 (0.024)	
R31M10C	0.623 (0.021)	0.413 (0.025)				
R31M11M	0.854 (0.043)	-0.692 (0.075)	0.262 (0.029)			
R31M12M	1.196 (0.050)	0.106 (0.030)	0.162 (0.015)			
R31M13M	2.100 (0.089)	-0.642 (0.027)	0.256 (0.018)			
R31M14M	2.283 (0.087)	-0.195 (0.019)	0.197 (0.013)			
R31M15M	1.298 (0.057)	0.065 (0.031)	0.218 (0.016)			
R31M16C	1.207 (0.031)	0.058 (0.015)				
R31M17CZ	0.612 (0.014)	0.003 (0.013)		0.071 (0.038)	0.228 (0.037)	-0.299 (0.032)
R11L01M	0.532 (0.027)	-2.275 (0.169)	0.146 (0.053)			
R11L02M	0.749 (0.056)	0.685 (0.054)	0.241 (0.020)			
R11L03C	0.616 (0.020)	-0.474 (0.029)				
R11L04C	0.667 (0.012)	0.418 (0.015)		1.643 (0.030)	-1.051 (0.032)	-0.592 (0.043)
R11L05M	1.186 (0.057)	0.352 (0.030)	0.206 (0.014)			
R11L06C	0.656 (0.021)	0.191 (0.023)				
R11L07M	0.772 (0.045)	0.474 (0.045)	0.154 (0.018)			
R11L08C	0.801 (0.019)	0.612 (0.015)		0.703 (0.021)	-0.703 (0.027)	
R11L09M	0.963 (0.043)	-0.809 (0.061)	0.226 (0.026)			
R11L10C	0.732 (0.019)	0.681 (0.016)		0.231 (0.024)	-0.231 (0.029)	
R11L11M	0.912 (0.042)	-0.354 (0.052)	0.189 (0.022)			
R11L12C	0.735 (0.017)	0.509 (0.016)		0.810 (0.023)	-0.810 (0.028)	

PIRLS 2016 Item Parameters

Item	Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})	Step 3 (d_{j3})
R21K01C	0.422 (0.013)	-0.891 (0.033)		0.186 (0.052)	-0.186 (0.039)	
R21K02C	0.807 (0.023)	-0.559 (0.025)				
R21K03M	1.004 (0.047)	0.081 (0.039)	0.184 (0.018)			
R21K04M	1.062 (0.096)	0.979 (0.045)	0.391 (0.014)			
R21K05C	0.969 (0.026)	0.137 (0.017)				
R21K06M	1.489 (0.067)	0.052 (0.029)	0.281 (0.015)			
R21K07C	0.682 (0.016)	0.143 (0.015)		0.119 (0.027)	-0.119 (0.027)	
R21K08M	0.994 (0.052)	0.354 (0.037)	0.197 (0.017)			
R21K09M	1.203 (0.056)	-0.010 (0.037)	0.246 (0.018)			
R21K10C	0.785 (0.017)	0.778 (0.015)		-0.397 (0.027)	0.397 (0.031)	
R21K11M	1.070 (0.056)	0.260 (0.039)	0.240 (0.017)			
R21K12C	0.576 (0.013)	-0.110 (0.014)		0.446 (0.040)	-0.084 (0.037)	-0.362 (0.034)
R31W01C	0.718 (0.017)	-0.584 (0.018)		0.243 (0.032)	-0.243 (0.024)	
R31W02C	0.800 (0.017)	0.278 (0.013)		-0.107 (0.024)	0.107 (0.025)	
R31W03M	1.347 (0.052)	-0.063 (0.027)	0.162 (0.014)			
R31W04C	0.842 (0.024)	-0.687 (0.026)				
R31W05M	1.264 (0.068)	0.497 (0.030)	0.257 (0.014)			
R31W06M	0.753 (0.034)	-0.999 (0.080)	0.147 (0.031)			
R31W07CZ	0.879 (0.017)	0.509 (0.010)		-0.079 (0.025)	0.169 (0.029)	-0.090 (0.027)
R31W08M	1.355 (0.063)	-0.093 (0.037)	0.307 (0.018)			
R31W09M	0.951 (0.054)	0.565 (0.036)	0.178 (0.016)			
R31W10M	1.289 (0.056)	0.320 (0.026)	0.164 (0.013)			
R31W11C	1.467 (0.038)	0.551 (0.013)				
R31W12M	1.514 (0.081)	0.706 (0.023)	0.219 (0.011)			
R31W13C	0.862 (0.028)	0.791 (0.023)				

PIRLS 2016 Item Parameters

Item	Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})	Step 3 (d_{j3})
Items Introduced in 2016:						
L21B01C	0.677 (0.036)	-2.530 (0.108)				
L21B02M	0.958 (0.067)	-2.353 (0.150)	0.101 (0.072)			
L21B03M *	0.721 (0.048)	-2.406 (0.130)	0.250 (0.000)			
L21B04C	0.706 (0.032)	-1.260 (0.057)				
L21B05M	0.883 (0.061)	-1.315 (0.127)	0.223 (0.054)			
L21B06M *	0.440 (0.033)	-1.847 (0.144)	0.250 (0.000)			
L21B07C	0.745 (0.033)	-1.160 (0.052)				
L21B08C	0.840 (0.036)	-1.359 (0.053)				
L21B09C	0.855 (0.036)	-1.140 (0.047)				
L21B10M	0.660 (0.057)	-0.338 (0.133)	0.192 (0.046)			
L21B11M	0.979 (0.062)	-1.224 (0.103)	0.186 (0.048)			
L21B12M	0.738 (0.055)	-2.202 (0.212)	0.127 (0.091)			
L21B13C	0.542 (0.022)	-0.967 (0.040)		0.693 (0.067)	-0.693 (0.044)	
L21B14M	1.075 (0.063)	-0.597 (0.066)	0.149 (0.032)			
L21B15C	0.419 (0.026)	0.318 (0.053)				
L21B16C	0.435 (0.019)	-0.185 (0.035)		0.092 (0.065)	-0.092 (0.059)	
L21B17C	0.705 (0.027)	-0.414 (0.027)		0.684 (0.048)	-0.684 (0.035)	
R41H01M	0.947 (0.101)	-0.667 (0.166)	0.582 (0.044)			
R41H02M	1.058 (0.066)	-0.743 (0.079)	0.196 (0.038)			
R41H03C	1.172 (0.044)	0.257 (0.022)				
R41H04C	0.671 (0.043)	1.644 (0.083)				
R41H05M	1.030 (0.082)	0.131 (0.070)	0.286 (0.029)			
R41H06C	0.700 (0.022)	-0.264 (0.024)		-0.089 (0.045)	0.089 (0.039)	
R41H07M	0.895 (0.085)	0.873 (0.053)	0.151 (0.022)			
R41H08C	0.691 (0.042)	1.492 (0.071)				
R41H09M	0.649 (0.064)	0.272 (0.110)	0.166 (0.040)			
R41H10M	1.307 (0.086)	-0.179 (0.056)	0.263 (0.028)			
R41H11M	1.402 (0.094)	-0.537 (0.065)	0.311 (0.034)			
R41H12M	1.350 (0.104)	0.002 (0.061)	0.369 (0.027)			
R41H13C	0.541 (0.018)	0.753 (0.023)		-0.089 (0.054)	0.270 (0.063)	-0.181 (0.068)
R41H14C	0.990 (0.042)	0.307 (0.025)				
R41H15C	1.250 (0.050)	-0.385 (0.028)				
R41H16C	1.027 (0.046)	0.577 (0.026)				

PIRLS 2016 Item Parameters

Item	Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})	Step 3 (d_{j3})
R41O01M	0.942 (0.065)	-0.993 (0.109)	0.254 (0.046)			
R41O02C	0.859 (0.036)	-0.965 (0.044)				
R41O03C	1.020 (0.046)	0.868 (0.030)				
R41O04C	0.595 (0.024)	1.145 (0.038)		-0.160 (0.046)	0.160 (0.061)	
R41O05C	0.630 (0.020)	0.228 (0.022)		-0.260 (0.046)	0.260 (0.045)	
R41O06M	1.437 (0.097)	-0.212 (0.055)	0.315 (0.028)			
R41O07C	0.629 (0.022)	-0.953 (0.037)		0.036 (0.062)	-0.036 (0.043)	
R41O08C	0.847 (0.036)	-0.064 (0.029)				
R41O09C	1.205 (0.045)	-0.059 (0.023)				
R41O10C	0.815 (0.026)	0.236 (0.019)		-0.006 (0.036)	0.006 (0.035)	
R41O11M	1.365 (0.096)	0.096 (0.050)	0.295 (0.025)			
R41O12M	1.283 (0.074)	-0.341 (0.051)	0.169 (0.027)			
R41O13C	0.567 (0.014)	0.348 (0.018)		-1.197 (0.072)	0.794 (0.079)	0.403 (0.057)
L21E01C	0.796 (0.047)	-3.130 (0.125)				
L21E02C	0.771 (0.038)	-2.116 (0.083)				
L21E03M	1.343 (0.084)	-0.521 (0.059)	0.270 (0.029)			
L21E04M	1.106 (0.074)	-0.378 (0.070)	0.262 (0.031)			
L21E05M	1.118 (0.076)	-1.568 (0.110)	0.242 (0.052)			
L21E06M	0.936 (0.081)	-2.465 (0.221)	0.304 (0.097)			
L21E07C	0.463 (0.018)	-0.810 (0.042)		-0.018 (0.071)	0.018 (0.055)	
L21E08M	1.023 (0.064)	-0.749 (0.081)	0.201 (0.036)			
L21E09M	0.620 (0.085)	0.464 (0.145)	0.340 (0.041)			
L21E10C	0.859 (0.047)	-2.716 (0.101)				
L21E11M	1.205 (0.074)	-0.817 (0.071)	0.226 (0.035)			
L21E12C	1.116 (0.057)	-2.136 (0.066)				
L21E13C	0.528 (0.027)	-0.275 (0.046)				
L21E14C	0.493 (0.020)	0.186 (0.032)		0.852 (0.053)	-0.852 (0.053)	
L21E15C	0.795 (0.040)	-2.219 (0.087)				
L21E16C	0.706 (0.032)	-0.959 (0.051)				
L21E17M	1.047 (0.065)	-0.467 (0.069)	0.171 (0.032)			

PIRLS 2016 Item Parameters

Item	Slope (a_j)	Location (b_j)	Guessing (c_j)	Step 1 (d_{j1})	Step 2 (d_{j2})	Step 3 (d_{j3})
R41I01C	0.793 (0.036)	-1.522 (0.063)				
R41I02M	1.034 (0.085)	0.623 (0.048)	0.185 (0.021)			
R41I03C	0.560 (0.022)	0.201 (0.026)		0.330 (0.047)	-0.330 (0.047)	
R41I04C	0.685 (0.026)	0.470 (0.023)		0.301 (0.038)	-0.301 (0.042)	
R41I05M	1.127 (0.080)	0.164 (0.054)	0.223 (0.025)			
R41I06M	1.260 (0.102)	0.487 (0.047)	0.283 (0.021)			
R41I07C	0.968 (0.030)	0.502 (0.017)		-0.008 (0.030)	0.008 (0.032)	
R41I08M	1.594 (0.099)	-0.579 (0.052)	0.264 (0.030)			
R41I09C	1.152 (0.044)	-0.035 (0.023)				
R41I10M	0.952 (0.079)	0.265 (0.070)	0.244 (0.029)			
R41I11C	0.820 (0.030)	0.471 (0.020)		0.256 (0.033)	-0.256 (0.036)	
R41I12M	1.061 (0.070)	0.155 (0.051)	0.145 (0.025)			
R41I13C	0.804 (0.036)	0.207 (0.030)				
R41I14C	0.801 (0.042)	0.944 (0.040)				
R41I15C	0.755 (0.041)	0.690 (0.037)				
R41T01M	1.085 (0.071)	-0.973 (0.092)	0.242 (0.044)			
R41T02C	0.690 (0.024)	-0.516 (0.028)		0.269 (0.048)	-0.269 (0.037)	
R41T03C	0.943 (0.029)	0.071 (0.017)		0.034 (0.033)	-0.034 (0.030)	
R41T04C	1.239 (0.046)	0.055 (0.021)				
R41T05M	0.756 (0.077)	0.383 (0.095)	0.244 (0.035)			
R41T06C	1.381 (0.052)	-0.579 (0.026)				
R41T07C	0.780 (0.025)	0.622 (0.021)		-0.202 (0.037)	0.202 (0.041)	
R41T08C	1.187 (0.044)	0.058 (0.022)				
R41T09M	1.560 (0.103)	0.500 (0.031)	0.182 (0.016)			
R41T10C	1.264 (0.047)	-0.212 (0.023)				
R41T11C	0.859 (0.022)	0.518 (0.014)		-0.426 (0.043)	0.319 (0.050)	0.106 (0.042)
R41T12M	0.999 (0.086)	-0.050 (0.089)	0.346 (0.035)			
R41T13M	1.111 (0.075)	0.432 (0.041)	0.112 (0.020)			
R41T14C	0.533 (0.030)	0.131 (0.043)				
R41T15M	0.897 (0.091)	0.594 (0.072)	0.235 (0.029)			
R41T16M	1.289 (0.098)	-0.046 (0.064)	0.286 (0.030)			

* Items with fixed guessing parameters.