

Appendix J—DECISION ACCURACY AND CONSISTENCY RESULTS

**Table J-1. 2007-08 NECAP Science: Decision Accuracy—
Cross-Tabulation of True and Observed Achievement Level Proportions—Grade 4**

<i>Observed Achievement Level</i>	<i>True Achievement Level</i>				Total
	SBP	PP	P	PWD	
SBP	0.0951	0.0277	0.0000	0.0000	0.1228
PP	0.0357	0.3353	0.0727	0.0000	0.4437
P	0.0000	0.0483	0.3539	0.0173	0.4196
PWD	0.0000	0.0000	0.0030	0.0109	0.0139
Total	0.1308	0.4113	0.4297	0.0282	1.0000

Overall Accuracy (sum of diagonal) = 0.7952

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

**Table J-2. 2007-08 NECAP Science: Decision Consistency Cross-Tabulation
of Observed Achievement Level Proportions for Two Parallel Forms—Grade 4**

<i>Form 2 Achievement Level</i>	<i>Form 1 Achievement Level</i>				Total
	SBP	PP	P	PWD	
SBP	0.0862	0.0439	0.0006	0.0000	0.1308
PP	0.0439	0.2842	0.0832	0.0000	0.4113
P	0.0006	0.0832	0.3312	0.0147	0.4297
PWD	0.0000	0.0000	0.0147	0.0135	0.0282
Total	0.1308	0.4113	0.4297	0.0282	1.0000

Overall Consistency (sum of diagonal) = 0.7152

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

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**Table J-3. 2007-08 NECAP Science: Summary of
Overall Accuracy and Consistency Indices—Grade 4**

Accuracy	0.7952
Consistency	0.7152
Kappa (k)	0.5467

**Table J-4. 2007-08 NECAP Science: Indices
Conditional On Achievement Level—Grade 4**

<i>Achievement Level</i>	<i>Accuracy</i>	<i>Consistency</i>
SBP	0.7744	0.6594
PP	0.7557	0.6909
P	0.8435	0.7709
PWD	0.7837	0.4795

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table J-5. 2007-08 NECAP Science: Accuracy and Consistency Indices at Cutpoints—Grade 4

<i>Cutpoint</i>	<i>Accuracy</i>	<i>False Positive</i>	<i>False Negative</i>	<i>Consistency</i>
SBP:PP	0.9366	0.0277	0.0357	0.9109
PP:P	0.8789	0.0727	0.0483	0.8324
P:PWD	0.9797	0.0173	0.0030	0.9706

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

False Positive = proportion of students with observed score above cutpoint and true score below cutpoint

False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

**Table J-6. 2007-08 NECAP Science: Decision Accuracy—
Cross-Tabulation of True and Observed Achievement Level Proportions—Grade 8**

<i>Observed Achievement Level</i>	<i>True Achievement Level</i>				Total
	SBP	PP	P	PWD	
SBP	0.2384	0.0432	0.0000	0.0000	0.2816
PP	0.0419	0.4053	0.0510	0.0000	0.4981
P	0.0000	0.0281	0.1822	0.0054	0.2158
PWD	0.0000	0.0000	0.0010	0.0035	0.0045
Total	0.2803	0.4766	0.2342	0.0089	1.0000

Overall Accuracy (sum of diagonal) = 0.8294

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

**Table J-7. 2007-08 NECAP Science: Decision Consistency—Cross-Tabulation
of Observed Achievement Level Proportions for Two Parallel Forms—Grade 8**

<i>Form 2 Achievement Level</i>	<i>Form 1 Achievement Level</i>				Total
	SBP	PP	P	PWD	
SBP	0.2210	0.0592	0.0001	0.0000	0.2803
PP	0.0592	0.3623	0.0551	0.0000	0.4766
P	0.0001	0.0551	0.1744	0.0047	0.2342
PWD	0.0000	0.0000	0.0047	0.0042	0.0089
Total	0.2803	0.4766	0.2342	0.0089	1.0000

Overall Consistency (sum of diagonal) = 0.7618

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

**Table J-8. 2007-08 NECAP Science: Summary of
Overall Accuracy and Consistency Indices—Grade 8**

Accuracy	0.8294
Consistency	0.7618
Kappa (k)	0.6275

**Table J-9. 2007-08 NECAP Science: Indices
Conditional On Achievement Level—Grade 8**

<i>Achievement Level</i>	<i>Accuracy</i>	<i>Consistency</i>
SBP	0.8466	0.7884
PP	0.8136	0.7601
P	0.8445	0.7444
PWD	0.7809	0.4753

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table J-10. 2007-08 NECAP Science: Accuracy and Consistency Indices at Cutpoints—Grade 8

<i>Cutpoint</i>	<i>Accuracy</i>	<i>False Positive</i>	<i>False Negative</i>	<i>Consistency</i>
SBP:PP	0.9149	0.0432	0.0419	0.8814
PP:P	0.9208	0.0510	0.0281	0.8896
P:PWD	0.9936	0.0054	0.0010	0.9907

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint

**Table J-11. 2007-08 NECAP Science: Decision Accuracy—
Cross-Tabulation of True and Observed Achievement Level Proportions—Grade 11**

<i>Observed Achievement Level</i>	<i>True Achievement Level</i>				Total
	SBP	PP	P	PWD	
SBP	0.2902	0.0457	0.0000	0.0000	0.3359
PP	0.0406	0.3745	0.0465	0.0000	0.4615
P	0.0000	0.0250	0.1509	0.0114	0.1873
PWD	0.0000	0.0000	0.0029	0.0124	0.0153
Total	0.3308	0.4452	0.2003	0.0238	1.0000

Overall Accuracy (sum of diagonal) = 0.8280

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

**Table J-12.. 2007-08 NECAP Science: Decision Consistency—Cross-Tabulation
of Observed Achievement Level Proportions for Two Parallel Forms—Grade 11**

<i>Form 2 Achievement Level</i>	<i>Form 1 Achievement Level</i>				Total
	SBP	PP	P	PWD	
SBP	0.2705	0.0601	0.0001	0.0000	0.3308
PP	0.0601	0.3353	0.0497	0.0001	0.4452
P	0.0001	0.0497	0.1404	0.0101	0.2003
PWD	0.0000	0.0001	0.0101	0.0136	0.0238
Total	0.3308	0.4452	0.2003	0.0238	1.0000

Overall Consistency (sum of diagonal) = 0.7597

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

**Table J-13. 2007-08 NECAP Science: Summary
of Overall Accuracy and Consistency Indices—Grade 11**

Accuracy	0.8280
Consistency	0.7597
Kappa (k)	0.6313

**Table J-14. 2007-08 NECAP Science: Indices
Conditional On Achievement Level—Grade 11**

<i>Achievement Level</i>	<i>Accuracy</i>	<i>Consistency</i>
SBP	0.8639	0.8179
PP	0.8114	0.7531
P	0.8058	0.7007
PWD	0.8110	0.5715

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction

Table J-15. 2007-08 NECAP Science: Accuracy and Consistency Indices at Cutpoints—Grade 11

<i>Cutpoint</i>	<i>Accuracy</i>	<i>False Positive</i>	<i>False Negative</i>	<i>Consistency</i>
SBP:PP	0.9137	0.0457	0.0406	0.8795
PP:P	0.9285	0.0465	0.0250	0.9002
P:PWD	0.9857	0.0114	0.0029	0.9796

SBP = Substantially Below Proficient; PP = Partially Proficient; P = Proficient; PWD = Proficient with Distinction
False Positive = proportion of students with observed score above cutpoint and true score below cutpoint
False Negative = proportion of students with observed score below cutpoint and true score above cutpoint