

**Appendix 3\_9k Extended Assessment Science Middle Factor Analysis**

Oregon 2008 Extended Assessment

Middle Grade Band SCIENCE Task Factor Analysis

**Math Items Across all Tasks**

N of Cases = 426

N of Items = 50

**Inter-item Correlations**

**Summary Item Statistics**

	Mean	Min	Max	Range	Maxi / Min	Var	N Items
Item Means	1.243	.277	1.754	1.477	6.331	.124	50
Item Variances	.819	.431	1.002	.571	2.326	.033	50
Inter-Item Correlations	.260	-.100	.641	.741	-6.436	.013	50

Alpha = .944

Standardized item alpha = .946

**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.949
Bartlett's Test of Sphericity	Approx. Chi-Square	7824.022
	df	1225
	Sig.	.000

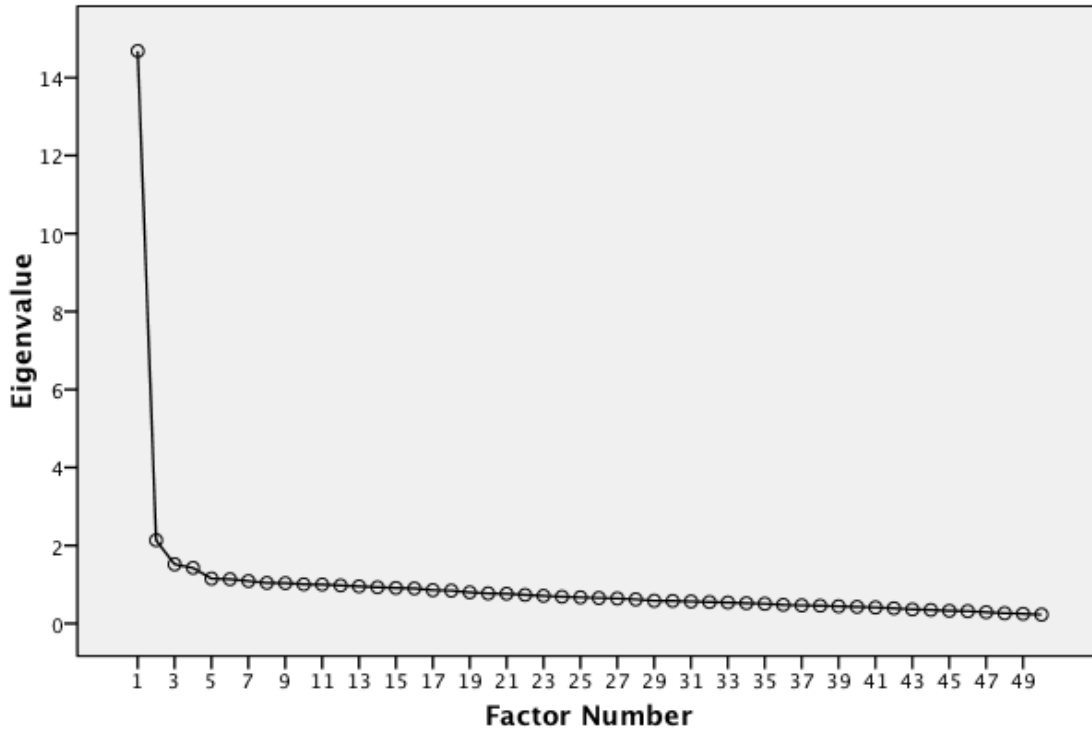
**Factor Analysis**

**Total Variance Explained**

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	14.681	29.363	29.363	13.945	27.890	27.890	14.681	29.363
2	2.136	4.272	33.635	.928	1.857	29.747	2.136	4.272	33.635
3	1.520	3.041	36.675	1.570	3.141	32.888	1.520	3.041	36.675
4	1.426	2.852	39.527	.819	1.639	34.527	1.426	2.852	39.527
5	1.152	2.305	41.832	.687	1.373	35.900	1.152	2.305	41.832
6	1.137	2.275	44.107	.490	.980	36.880	1.137	2.275	44.107
7	1.091	2.182	46.289	.471	.941	37.822	1.091	2.182	46.289
8	1.043	2.086	48.375	.517	1.034	38.855	1.043	2.086	48.375
9	1.035	2.071	50.445	.457	.914	39.769	1.035	2.071	50.445
10	1.007	2.014	52.459	.419	.837	40.607	1.007	2.014	52.459

Extraction Method: Maximum Likelihood.

**Scree Plot**



**Goodness-of-fit Test**

Chi-Square	df	Sig.
842.392	770	.035

**Difference Between Model Fit for 1 Factor and Multiple Factor Models**

chisq1	chisq2	chidiff	df1	df2	dfdifff	prob
2044.80	842.39	1202.41	1175	770	405	.00

Rotated Factor Matrix<sup>a</sup>

	Factor									
	1	2	3	4	5	6	7	8	9	10
t2r01	.491	.254	.184	.252	.074	.108	-.082	.070	-.040	.142
t2r02	.330	.405	.085	.039	.071	.187	.089	.029	.030	-.009
t2r03	.265	.298	.011	.159	.012	.187	.229	.003	-.065	-.019
t2r04	.107	.180	.071	.096	.042	-.043	.058	-.032	-.012	.189
t2r05	.185	.224	.153	.237	-.030	.120	-.007	.083	-.022	.058
t3r01	.143	.453	.013	-.017	.044	.072	.185	.015	-.067	.034
t3r02	.455	.190	.198	.172	-.106	.092	-.003	.334	.102	.015
t3r03	.609	.067	.144	.366	.151	.124	.070	.033	.110	-.039
t3r04	.534	.260	.056	.033	.073	.111	-.003	.159	-.016	.115
t3r05	.551	.276	.088	.089	.088	.107	.075	.065	.008	-.077
t4r01	.602	.299	.034	-.065	.116	.144	.065	-.185	.098	.141
t4r02	.579	.173	.351	.003	.146	.191	.045	.008	.115	.112
t4r03	.273	.429	.043	.137	.020	.066	-.015	-.048	.124	.026
t4r04	.101	.381	.040	.096	.007	.032	.301	-.088	.037	.104
t4r05	.207	.227	-.044	.167	.054	.139	.056	.039	.113	.118
t5r01	.000	-.016	.006	.008	.024	.009	.007	-.003	-.026	.414
t5r02	.690	.178	.157	.282	.061	-.135	-.075	-.002	.063	.060
t5r03	.233	.311	.103	.062	-.045	.034	-.006	.032	.050	.081
t5r04	.270	.439	.095	.138	.036	.132	.033	.020	.047	.106
t5r05	.516	.394	.067	.174	.003	.069	.077	.000	.054	.026
t6r01	.280	.463	.102	.099	.097	.133	-.005	.188	-.122	-.232
t6r02	.431	.363	.109	.002	.150	.117	.059	.018	-.018	-.172
t6r03	.452	.495	.059	.036	.088	.065	.127	.138	.056	-.232
t6r04	-.024	.148	.048	.226	.023	.000	.002	.066	.049	.189
t6r05	.416	.207	.092	.068	.781	.068	.062	.030	.005	.134
t7r01	.155	.452	.272	.067	.090	-.056	.048	.089	.106	-.088
t7r02	.163	.386	.129	.175	-.006	.034	.073	.052	.045	.070
t7r03	.145	.331	.233	.279	.063	.005	.085	-.006	.271	-.136
t7r04	.417	.386	.181	-.040	.078	-.086	.084	-.011	.266	-.103
t7r05	.379	.212	.160	.175	.074	.475	.139	.068	.081	-.084

t8r01	.405	.143	.626	.129	.059	.174	-.006	.130	.205	.091
t8r02	.156	.172	.246	.197	.076	.210	-.027	-.017	.049	.121
t8r03	.445	.192	.672	.168	-.001	-.015	.156	-.012	-.047	.010
t8r04	.496	.265	.274	.047	.071	.124	.195	.094	.132	-.029
t8r05	.112	.458	.038	.053	.083	.061	-.030	.056	.102	.040
t9r01	.411	.337	.179	.107	-.041	.242	.076	.138	.102	-.066
t9r02	.350	.381	.146	.135	.038	-.051	.129	.248	.026	.010
t9r03	.577	.196	.258	.122	.116	.018	.363	.164	-.015	-.036
t9r04	.720	.280	.192	-.042	.017	.066	.184	-.031	.030	.011
t9r05	.241	.429	.090	-.016	.112	.120	.017	.328	.046	-.038
t10r01	.221	.390	.116	.280	.024	.040	.064	.060	.021	-.032
t10r02	.168	.319	.147	.401	-.003	.144	.200	-.053	.034	.014
t10r03	.567	.142	.276	.185	.147	-.004	.309	.266	.255	.062
t10r04	.252	.521	-.001	.094	-.077	.047	-.048	.086	-.020	.142
t10r05	.019	.423	.101	.141	.053	.014	.073	.114	.147	-.090
t11r01	.432	.191	.294	.089	.041	.138	.017	.135	.138	-.088
t11r02	.268	.248	.206	.096	-.052	.153	.001	.054	.383	-.058
t11r03	.097	.477	.143	.087	.053	.026	.059	-.051	.065	.069
t11r04	.346	.281	.114	.050	.091	.195	.333	.191	.132	.076
t11r05	.384	.153	.297	.091	.056	-.051	.062	.185	.225	.194

Extraction Method: Maximum Likelihood.

Rotation Method: Varimax with Kaiser  
Normalization.

a. Rotation converged in 50 iterations.

## Task Level Factor Analysis

### Descriptive Statistics

	Mean	Std. Deviation	Analysis N
t2tot	5.92	2.940	432
t3tot	7.20	2.861	432
t4tot	6.02	2.831	432
t5tot	5.72	2.745	432
t6tot	5.24	2.946	432
t7tot	5.81	3.153	432
t8tot	7.08	2.902	432
t9tot	6.88	3.308	432
t10tot	5.02	3.035	432
t11tot	6.47	2.979	432

### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.962
Bartlett's Test of Sphericity	Approx. Chi-Square	3032.497
	df	45
	Sig.	.000

### Communalities

	Initial	Extraction
t2tot	.499	.520
t3tot	.653	.670
t4tot	.562	.587
t5tot	.550	.568
t6tot	.595	.617
t7tot	.615	.635
t8tot	.605	.632
t9tot	.705	.741

t10tot	.589	.610
t11tot	.609	.633

Extraction Method:  
Maximum Likelihood.

### Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.588	65.879	65.879	6.212	62.117	62.117
2	.515	5.149	71.028			
3	.473	4.727	75.755			
4	.451	4.506	80.261			
5	.423	4.229	84.491			
6	.387	3.867	88.357			
7	.328	3.281	91.638			
8	.314	3.140	94.778			
9	.288	2.876	97.654			
10	.235	2.346	100.000			

Extraction Method: Maximum Likelihood.

### Factor Matrix<sup>a</sup>

	Factor
	1
t2tot	.721
t3tot	.819
t4tot	.766
t5tot	.754
t6tot	.786
t7tot	.797
t8tot	.795
t9tot	.861
t10tot	.781

t11tot	.796
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Extraction Method:  
Maximum  
Likelihood.

a. 1 factors  
extracted. 3  
iterations required.

#### Goodness-of-fit Test

Chi-Square	df	Sig.
73.827	35	.000