

Eighth Grade Science

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TIMSS 2015 TCMA National Item Selection

Eighth Grade Science

Country			Item covered in national curriculum								Item not covered in national curriculum							
Item (pts)			Singapore	Slovenia	South Africa	Sweden	Thailand	Turkey	United Arab Emirates	United States	Benchmarking Participants							
											Ontario, Canada	Quebec, Canada	Abu Dhabi, UAE	Dubai, UAE	Florida, US			
S01_01	S042258	(1)	○	●	●	●	●	●	○	●	○	○	●	○	●			
S01_02	S042005	(2)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S01_03	S042016	(1)	○	●	●	●	○	●	○	●	○	○	●	○	●			
S01_04A	S042300A	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●			
S01_04B	S042300B	(1)	●	●	●	●	●	●	○	●	●	●	●	○	●			
S01_04C	S042300C	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S01_05	S042319	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●			
S01_06	S042068	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●			
S01_07	S042216	(1)	●	●	●	●	●	●	●	●	○	○	●	●	●			
S01_08	S042249	(1)	●	○	●	●	○	●	○	●	●	●	○	○	●			
S01_09	S042094	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S01_10A	S042293A	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S01_10B	S042293B	(1)	●	●	●	●	○	●	●	●	○	○	●	●	●			
S01_11	S042195	(1)	○	○	●	●	○	●	○	●	○	○	●	○	●			
S01_12	S042400	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●			
S01_14	S042164	(1)	●	●	●	○	●	●	●	●	●	●	○	○	●			
S02_01	S062189	(2)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S02_02	S062094	(1)	○	●	●	●	●	●	●	●	●	●	●	●	●			
S02_03	S062118	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●			
S02_04A	S062103A	(1)	●	●	●	●	●	●	○	●	○	○	●	○	●			
S02_04B	S062103B	(2)	●	●	●	●	●	●	○	●	○	○	●	○	●			
S02_05	S062010	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S02_06	S062253	(1)	●	●	●	●	○	●	●	●	○	○	○	○	●			
S02_07	S062051	(1)	●	○	●	●	●	●	○	○	○	○	○	○	○			
S02_08	S062044	(1)	●	○	●	●	●	●	●	●	●	○	●	●	●			
S02_09	S062046	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S02_10	S062149	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S02_11	S062268	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●			
S02_12	S062170	(1)	○	●	●	○	●	●	○	●	○	○	○	○	●			
S02_13	S062234	(2)	○	●	●	●	●	●	●	○	○	○	○	○	○			
S02_14	S062271	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S03_01	S052261	(1)	○	●	●	●	●	●	○	○	○	○	○	○	○			
S03_02Z	S052092Z	(2)	○	●	●	●	●	●	●	●	○	○	○	○	○			
S03_03A	S052263A	(1)	●	●	●	●	●	●	○	●	○	○	○	○	○			
S03_03B	S052263B	(1)	●	●	●	●	●	●	○	●	○	○	○	○	○			
S03_04	S052265	(1)	●	●	●	○	●	●	○	●	○	○	○	○	○			
S03_05	S052280	(1)	●	●	●	●	●	●	●	●	○	○	○	○	○			
S03_06	S052256	(1)	●	●	●	●	●	●	○	●	○	○	○	○	○			
S03_07Z	S052043Z	(1)	●	●	●	○	●	●	○	○	○	○	○	○	○			
S03_08	S052194	(1)	●	●	●	●	●	●	●	●	○	○	○	○	○			
S03_09	S052179	(1)	●	●	●	●	●	●	○	●	○	○	○	○	○			
S03_10	S052233	(1)	●	●	●	●	●	●	●	●	○	○	○	○	○			
S03_11	S052159	(1)	○	●	●	●	●	●	○	○	○	○	○	○	○			
S03_12A	S052289A	(1)	○	●	●	●	●	●	○	○	○	○	○	○	○			
S03_12B	S052289B	(1)	○	●	●	●	●	●	○	○	○	○	○	○	○			
S03_12C	S052289C	(1)	○	●	●	●	●	●	○	○	○	○	○	○	○			
S04_01	S062099	(1)	○	●	●	●	●	●	○	○	○	○	○	○	○			
S04_02	S062095	(2)	●	●	●	●	●	●	○	○	○	○	○	○	○			
S04_03	S062106	(1)	●	●	●	●	●	●	○	○	○	○	○	○	○			
S04_04	S062064	(1)	○	●	●	●	●	●	●	●	○	○	○	○	○			

Country			Item covered in national curriculum															Item not covered in national curriculum														
			Australia	Bahrain	Botswana	Canada	Chile	Chinese Taipei	England	Georgia	Hong Kong SAR	Hungary	Iran, Islamic Rep. of	Ireland	Israel	Italy	Japan	Jordan	Kazakhstan	Korea, Rep. of	Kuwait	Lebanon	Lithuania	Malaysia	Malta	Morocco	New Zealand	Norway	Oman	Qatar	Russian Federation	Saudi Arabia
S04_05	S062132	(1)	●	●	○	○	○	●	●	●	○	●	●	●	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S04_06	S062163	(1)	●	●	●	○	○	●	●	●	○	●	●	●	○	●	●	○	○	●	●	●	●	●	●	○	○	○	○	●	●	●
S04_07	S062153	(1)	●	●	●	○	○	●	●	○	○	●	●	○	○	○	○	●	●	●	●	○	●	○	●	●	●	○	○	○	○	●
S04_08	S062018	(2)	●	●	○	○	●	●	●	●	○	●	●	●	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●
S04_09	S062143	(1)	○	●	●	●	○	●	●	●	●	●	●	●	○	○	●	○	●	●	●	●	○	●	●	●	●	○	○	○	○	●
S04_10	S062276	(1)	●	●	●	●	●	●	●	○	○	●	●	○	○	●	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○	○
S04_11	S062050	(1)	●	●	●	○	●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○
S04_12	S062205	(1)	●	●	●	○	●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
S04_13	S062190	(1)	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
S04_14A	S062024A	(1)	●	●	○	○	●	●	●	○	○	●	●	○	○	○	○	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○
S04_14B	S062024B	(1)	●	●	○	○	●	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_01	S042053	(1)	●	○	●	○	○	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_02	S042408	(1)	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_03	S042015	(1)	●	●	●	●	●	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_04	S042309	(1)	●	○	●	●	●	●	●	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_05A	S042049A	(1)	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_05B	S042049B	(1)	●	●	●	○	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_06	S042182	(1)	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_07	S042402	(1)	●	●	●	○	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_08A	S042228A	(1)	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_08B	S042228B	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_08C	S042228C	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_09	S042126	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_10	S042210	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_11	S042176	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_12	S042211	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_13	S042135	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S05_14	S042257	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_01	S052003	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_02	S052071	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_03	S052246	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_04	S052276	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_05A	S052303A	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_05B	S052303B	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_06	S052125	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_07	S052145	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_08	S052049	(2)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_09	S052063	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_10	S052192	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_11	S052232	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_12	S052141	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_13	S052096	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_14	S052116	(2)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S06_15	S052110	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S07_01	S042042	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S07_02	S042030	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S07_03	S042003	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S07_04	S042110	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S07_05A	S042222A	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S07_05B	S042222B	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

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Item (pts)			Singapore	Slovenia	South Africa	Sweden	Thailand	Turkey	United Arab Emirates	United States	Benchmarking Participants					
											Ontario, Canada	Quebec, Canada	Abu Dhabi, UAE	Dubai, UAE	Florida, US	
S04_05	S062132	(1)	●	●	●	●	●	●	○	●	○	○	●	○	●	
S04_06	S062163	(1)	●	●	●	●	●	●	●	●	○	○	○	●	●	
S04_07	S062153	(1)	●	●	●	●	●	●	○	●	○	○	●	○	●	
S04_08	S062018	(2)	○	●	●	●	●	●	●	●	○	●	●	●	●	
S04_09	S062143	(1)	●	●	●	●	●	○	●	●	○	●	●	●	●	
S04_10	S062276	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●	
S04_11	S062050	(1)	●	○	●	●	●	●	○	○	○	●	●	○	○	
S04_12	S062205	(1)	●	●	●	●	●	●	○	●	○	●	●	○	●	
S04_13	S062190	(1)	●	●	●	●	●	●	●	●	○	●	●	●	●	
S04_14A	S062024A	(1)	○	●	●	●	●	●	●	●	○	●	●	●	●	
S04_14B	S062024B	(1)	○	●	●	●	●	●	●	●	○	●	●	●	●	
S05_01	S042053	(1)	○	●	●	●	●	●	○	●	○	○	●	●	●	
S05_02	S042408	(1)	●	●	●	●	●	●	○	●	●	●	○	●	●	
S05_03	S042015	(1)	●	●	●	●	●	●	○	●	●	●	○	●	●	
S05_04	S042309	(1)	○	●	●	○	●	●	○	●	●	●	○	●	●	
S05_05A	S042049A	(1)	●	●	●	●	●	●	○	●	○	●	○	●	●	
S05_05B	S042049B	(1)	●	●	●	●	●	●	○	●	●	○	○	●	●	
S05_06	S042182	(1)	●	○	●	●	●	●	○	●	○	●	●	●	●	
S05_07	S042402	(1)	●	○	●	●	●	●	○	●	●	○	○	○	●	
S05_08A	S042228A	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S05_08B	S042228B	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S05_08C	S042228C	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S05_09	S042126	(1)	○	●	●	●	●	●	○	●	○	○	●	○	●	
S05_10	S042210	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●	
S05_11	S042176	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S05_12	S042211	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●	
S05_13	S042135	(1)	○	●	●	●	●	●	○	●	●	●	○	○	●	
S05_14	S042257	(1)	○	●	●	●	●	●	○	●	●	●	○	○	●	
S06_01	S052003	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●	
S06_02	S052071	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●	
S06_03	S052246	(1)	○	●	●	●	●	●	○	●	○	○	●	○	●	
S06_04	S052276	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●	
S06_05A	S052303A	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S06_05B	S052303B	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S06_06	S052125	(1)	●	●	●	●	●	●	○	●	●	○	○	○	●	
S06_07	S052145	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●	
S06_08	S052049	(2)	●	●	●	●	●	●	○	●	●	●	○	○	●	
S06_09	S052063	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●	
S06_10	S052192	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●	
S06_11	S052232	(1)	○	●	●	●	●	●	●	●	○	○	○	○	●	
S06_12	S052141	(1)	●	○	●	●	○	●	●	●	○	○	○	○	●	
S06_13	S052096	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●	
S06_14	S052116	(2)	○	●	●	●	●	●	○	●	○	○	○	○	●	
S06_15	S052110	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●	
S07_01	S042042	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●	
S07_02	S042030	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●	
S07_03	S042003	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●	
S07_04	S042110	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●	
S07_05A	S042222A	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●	
S07_05B	S042222B	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●	

Country Item (pts)			● Item covered in national curriculum										○ Item not covered in national curriculum																			
			Australia	Bahrain	Botswana	Canada	Chile	Chinese Taipei	England	Georgia	Hong Kong SAR	Hungary	Iran, Islamic Rep. of	Ireland	Israel	Italy	Japan	Jordan	Kazakhstan	Korea, Rep. of	Kuwait	Lebanon	Lithuania	Malaysia	Malta	Morocco	New Zealand	Norway	Oman	Qatar	Russian Federation	Saudi Arabia
S07_05C	S042222C	(1)	●	●	○	●	●	●	●	●	●	●	○	●	●	○	●	●	●	●	○	●	●	●	○	●	●	●	●	●	●	●
S07_06	S042065	(1)	●	●	●	●	●	●	●	●	●	●	○	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S07_07	S042280	(1)	●	●	●	○	●	●	●	●	●	●	●	○	○	●	●	●	●	●	○	●	●	●	○	●	●	●	●	○	●	●
S07_08	S042088	(1)	●	●	●	●	○	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●
S07_09	S042218	(1)	●	●	●	●	○	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S07_10	S042104	(1)	○	●	○	○	●	●	●	●	●	○	●	●	○	○	●	○	○	○	●	●	●	●	●	○	○	○	●	●	●	●
S07_11	S042064	(1)	●	●	●	●	●	●	●	●	●	●	●	○	●	○	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●
S07_12	S042273	(1)	●	●	●	○	○	●	●	●	●	●	●	○	○	●	●	●	●	●	●	●	●	●	○	●	●	●	●	○	●	●
S07_13	S042301	(1)	○	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
S07_14	S042312	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●
S07_15	S042217	(1)	●	●	●	●	○	●	●	●	●	●	●	○	●	○	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●
S07_16	S042406	(1)	●	●	○	●	●	●	●	●	○	●	●	○	●	○	○	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○
S08_01	S062055	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_02	S062007	(1)	●	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○
S08_03	S062275	(1)	○	●	●	●	○	●	●	●	●	●	●	○	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_04	S062225	(1)	●	●	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_05	S062111	(2)	●	●	●	○	●	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_06A	S062116A	(1)	●	●	●	●	●	●	○	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_06B	S062116B	(1)	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_06C	S062116C	(1)	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_07	S062262	(1)	●	●	●	○	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_08	S062035	(1)	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_09	S062144	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_10	S062162	(1)	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_11	S062233	(1)	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S08_13	S062171	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_01	S052076	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_02	S052272	(1)	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_03A	S052085A	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_03B	S052085B	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_04	S052094	(1)	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_05	S052248	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_06	S052146	(1)	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_07	S052282	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_08	S052299	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_09	S052144	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_10	S052214	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_12	S052101	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_13	S052113	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S09_14	S052107	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_01	S062090	(1)	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_02	S062274	(2)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_03	S062284	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_04A	S062098A	(2)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_04B	S062098B	(2)	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_05	S062032	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_06	S062043	(1)	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_07	S062158	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_08	S062159	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_09	S062005	(1)	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

TIMSS 2015 TCMA National Item Selection

Eighth Grade Science

Country			Item covered in national curriculum								Item not covered in national curriculum							
Item (pts)			Singapore	Slovenia	South Africa	Sweden	Thailand	Turkey	United Arab Emirates	United States	Benchmarking Participants							
											Ontario, Canada	Quebec, Canada	Abu Dhabi, UAE	Dubai, UAE	Florida, US			
S07_05C	S042222C	(1)	●	●	●	●	●	●	○	●	●	●	○	●				
S07_06	S042065	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S07_07	S042280	(1)	●	●	●	●	●	●	●	●	○	○	●	●	●			
S07_08	S042088	(1)	○	●	●	●	●	●	○	●	●	●	○	○	●			
S07_09	S042218	(1)	●	●	●	●	●	●	●	●	●	●	○	●	●			
S07_10	S042104	(1)	●	○	●	●	●	●	○	●	○	●	○	○	●			
S07_11	S042064	(1)	●	○	●	●	●	●	●	●	●	●	●	●	●			
S07_12	S042273	(1)	●	●	●	●	○	●	○	●	○	○	○	○	●			
S07_13	S042301	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S07_14	S042312	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S07_15	S042217	(1)	●	●	●	●	●	●	○	●	●	●	○	○	●			
S07_16	S042406	(1)	○	●	●	●	●	○	○	●	○	●	○	○	●			
S08_01	S062055	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S08_02	S062007	(1)	●	●	●	●	●	●	●	●	○	●	●	●	●			
S08_03	S062275	(1)	●	○	●	●	●	●	●	●	●	●	●	●	●			
S08_04	S062225	(1)	○	●	●	●	○	●	○	●	○	○	○	○	●			
S08_05	S062111	(2)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S08_06A	S062116A	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S08_06B	S062116B	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S08_06C	S062116C	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S08_07	S062262	(1)	○	●	●	●	○	●	○	●	●	○	○	○	●			
S08_08	S062035	(1)	●	○	●	●	○	●	○	●	○	●	○	○	●			
S08_09	S062144	(1)	●	○	●	●	○	●	○	●	○	●	○	○	●			
S08_10	S062162	(1)	○	○	●	●	○	○	○	●	○	○	○	○	●			
S08_11	S062233	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S08_13	S062171	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S09_01	S052076	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S09_02	S052272	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S09_03A	S052085A	(1)	○	○	●	●	●	●	○	●	○	●	○	○	●			
S09_03B	S052085B	(1)	●	○	●	●	●	●	○	●	○	●	○	○	●			
S09_04	S052094	(1)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S09_05	S052248	(1)	○	○	●	●	●	●	○	●	○	●	○	○	●			
S09_06	S052146	(1)	●	○	●	●	●	●	○	●	○	●	○	○	●			
S09_07	S052282	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S09_08	S052299	(1)	●	●	●	●	○	●	○	●	○	○	○	○	●			
S09_09	S052144	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S09_10	S052214	(1)	●	○	●	●	●	●	●	●	●	●	●	●	●			
S09_12	S052101	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S09_13	S052113	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S09_14	S052107	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S10_01	S062090	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S10_02	S062274	(2)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S10_03	S062284	(1)	○	●	●	○	●	●	○	●	○	○	○	○	●			
S10_04A	S062098A	(2)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S10_04B	S062098B	(2)	●	●	●	●	●	●	●	●	●	●	●	●	●			
S10_05	S062032	(1)	●	○	●	●	●	●	○	●	○	●	○	○	●			
S10_06	S062043	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S10_07	S062158	(1)	●	●	●	●	○	●	○	●	○	○	○	○	●			
S10_08	S062159	(1)	○	●	●	●	●	●	●	●	○	○	○	○	●			
S10_09	S062005	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			

Country Item (pts)			● Item covered in national curriculum										○ Item not covered in national curriculum																			
			Australia	Bahrain	Botswana	Canada	Chile	Chinese Taipei	England	Georgia	Hong Kong SAR	Hungary	Iran, Islamic Rep. of	Ireland	Israel	Italy	Japan	Jordan	Kazakhstan	Korea, Rep. of	Kuwait	Lebanon	Lithuania	Malaysia	Malta	Morocco	New Zealand	Norway	Oman	Qatar	Russian Federation	Saudi Arabia
S10_10	S062075	(1)	●	●	○	○	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	●	●	○	●	○	●	●	●	●
S10_11	S062004	(1)	●	●	●	○	●	●	●	●	●	●	●	○	○	●	●	●	●	●	●	●	●	●	●	○	●	○	●	●	●	●
S10_12	S062175	(1)	●	●	●	○	○	●	●	●	●	●	●	○	○	●	●	●	○	●	○	●	○	○	○	○	○	○	○	○	○	○
S10_13A	S062173A	(1)	●	●	●	●	○	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S10_13B	S062173B	(1)	●	●	●	●	○	●	●	●	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_01A	S052090A	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_01B	S052090B	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_02	S052262	(1)	●	●	●	○	●	●	●	○	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_03	S052267	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_04	S052273	(2)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_05Z	S052015Z	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_06	S052051	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_07	S052026	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_08	S052130	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_09	S052028	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_10	S052189	(1)	●	●	●	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_11	S052217	(1)	●	●	○	○	○	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_12	S052038	(1)	●	●	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_13	S052099	(1)	●	●	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S11_14	S052118	(1)	●	●	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_01	S062279	(1)	●	●	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_02	S062112	(1)	●	○	○	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_03	S062119	(1)	●	●	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_04	S062093	(2)	●	●	●	○	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_05	S062089	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_06	S062006	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_07	S062067	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_08	S062247	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_09	S062177	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_10	S062186	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_11A	S062211A	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_11B	S062211B	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_13	S062033	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_14	S062037	(1)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S12_15	S062242	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_01	S052006	(2)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_02	S052069	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_03	S052012	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_04	S052021	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_05Z	S052095Z	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_06	S052134	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_07	S052054	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_08	S052150	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_09A	S052243A	(1)	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
S13_09B	S052243B	(1)	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○										

Country			Item covered in national curriculum								Item not covered in national curriculum							
Item (pts)			Singapore	Slovenia	South Africa	Sweden	Thailand	Turkey	United Arab Emirates	United States	Benchmarking Participants							
											Ontario, Canada	Quebec, Canada	Abu Dhabi, UAE	Dubai, UAE	Florida, US			
S10_10	S062075	(1)	●	●	●	●	●	●	○	●	○	●	○	○	●			
S10_11	S062004	(1)	●	●	●	●	○	●	○	●	○	●	○	○	●			
S10_12	S062175	(1)	○	●	●	●	○	●	○	●	○	●	○	○	●			
S10_13A	S062173A	(1)	○	○	●	●	●	○	○	●	○	○	○	○	●			
S10_13B	S062173B	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S11_01A	S052090A	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S11_01B	S052090B	(1)	○	●	●	●	●	●	○	●	○	●	○	○	●			
S11_02	S052262	(1)	○	●	●	●	○	●	○	●	○	○	○	○	●			
S11_03	S052267	(1)	●	●	●	○	●	●	○	●	○	○	○	○	●			
S11_04	S052273	(2)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S11_05Z	S052015Z	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●			
S11_06	S052051	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●			
S11_07	S052026	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S11_08	S052130	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S11_09	S052028	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S11_10	S052189	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S11_11	S052217	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●			
S11_12	S052038	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S11_13	S052099	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S11_14	S052118	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S12_01	S062279	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S12_02	S062112	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S12_03	S062119	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S12_04	S062093	(2)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S12_05	S062089	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S12_06	S062006	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S12_07	S062067	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S12_08	S062247	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S12_09	S062177	(1)	○	●	●	●	●	●	●	○	○	○	○	○	●			
S12_10	S062186	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S12_11A	S062211A	(1)	●	●	●	●	●	○	○	●	○	○	○	○	●			
S12_11B	S062211B	(1)	○	●	●	●	●	○	○	●	○	○	○	○	●			
S12_13	S062033	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S12_14	S062037	(1)	●	○	●	●	○	●	○	●	○	○	○	○	●			
S12_15	S062242	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S13_01	S052006	(2)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S13_02	S052069	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●			
S13_03	S052012	(1)	●	●	●	●	○	●	○	●	○	○	○	○	●			
S13_04	S052021	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S13_05Z	S052095Z	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S13_06	S052134	(1)	●	●	●	●	●	●	●	●	○	○	○	○	●			
S13_07	S052054	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S13_08	S052150	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S13_09A	S052243A	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S13_09B	S052243B	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S13_09C	S052243C	(1)	●	○	●	●	●	●	○	●	○	○	○	○	●			
S13_10	S052206	(1)	●	●	●	●	●	●	○	●	○	○	○	○	●			
S13_11A	S052112A	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S13_11B	S052112B	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			
S13_12	S052294	(1)	○	●	●	●	●	●	○	●	○	○	○	○	●			

Eighth Grade Science

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TIMSS 2015 TCMA National Item Selection

Eighth Grade Science

<div>Country</div> <div>Item (pts)</div>			● Item covered in national curriculum								○ Item not covered in national curriculum					
			Singapore	Slovenia	South Africa	Sweden	Thailand	Turkey	United Arab Emirates	United States	Benchmarking Participants					
										Ontario, Canada	Quebec, Canada	Abu Dhabi, UAE	Dubai, UAE	Florida, US		
S14_01A	S062091A	(1)	●	●	●	●	●	●	○	●	○	●	●	○	●	
S14_01B	S062091B	(1)	●	●	●	●	●	●	○	●	○	●	●	○	●	
S14_02	S062100	(1)	●	●	●	●	●	●	○	●	●	●	●	○	●	
S14_03	S062097	(1)	●	●	●	●	●	●	○	●	●	○	●	○	●	
S14_04	S062101	(2)	○	●	●	○	○	●	○	●	○	○	●	○	●	
S14_06	S062128	(1)	●	○	●	●	●	●	●	●	●	●	●	●	●	
S14_07	S062047	(1)	●	●	●	●	●	●	○	●	○	○	●	○	●	
S14_08	S062042	(1)	●	●	●	●	●	●	○	○	●	●	○	○	●	
S14_09	S062250	(1)	●	●	●	●	●	○	○	○	○	○	○	○	○	
S14_10	S062246	(1)	●	●	●	●	○	●	●	●	○	○	●	●	●	
S14_11	S062056	(1)	●	●	●	●	●	●	●	●	●	○	●	●	●	
S14_12	S062235	(1)	○	●	●	●	●	●	○	●	●	○	●	○	●	
S14_13	S062180	(1)	○	●	●	●	●	●	○	●	○	●	●	○	●	
S14_14	S062022	(1)	○	●	●	●	●	●	○	●	●	●	●	○	●	
S14_15	S062243	(2)	○	●	●	●	●	●	○	●	○	●	●	○	●	