

Item Signature Study: Report on the Characteristics of Reading Texts and Items from Calibration 1

Technical Report 12: Project asTTle

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Items and texts used in the first calibration of asTTle reading assessment were classified in an item signature study to establish their literacy-relevant characteristics. Classification of texts and items is used to inform the reporting of student achievement and to guide development of future assessment materials. A focus group of teachers determined text properties (i.e., curriculum level, form, purpose, genre, considerateness, and essential learning area) and item properties (i.e., cognitive and reading processes, and curriculum processes and objectives) on a two-thirds majority basis. Agreement among teachers was greater for classifying reading texts than assessment items. However, agreement levels were only moderate, ranging mostly between $r = .40$ and $r = .70$. Reading texts were found to be largely in Level 2 and 3 of the New Zealand English curriculum and equally divided between literary and information purposes. Assessment items required predominantly surface cognitive processes, retrieval of information comprehension processes, and gaining understanding from text curriculum processes.

Table of Contents

Introduction.....	2	Text Form.....	11
Purpose of the Research.....	3	Essential Learning Area.....	11
Methodology.....	3	Curriculum Level and Difficulty	
Development of the Categories and		within Level.....	11
Variables Used to Classify Reading		Print and Illustration Considerateness...	12
Texts and Assessment Items.....	3	Text Purpose (PIRLS) and Genre.....	12
Workshops.....	4	Level of Agreement on Items.....	12
Participant Characteristics.....	5	Relative Level of Agreement on	
Findings.....	5	SOLO and Bloom’s Taxonomies.....	12
Characteristics of Texts.....	5	PIRLS Processes of Comprehension.....	13
Text Form.....	5	Curriculum Area Processes.....	13
Curriculum Level and Difficulty.....	5	Curriculum Area Objectives.....	13
Text Purpose (PIRLS).....	6	Teacher Characteristics.....	14
Print Considerateness.....	6	Teaching Background.....	14
Illustration Considerateness.....	6	Professional Activities.....	15
Genre (Purpose).....	6	Training and Qualifications.....	15
Essential Learning Area.....	7	Post Script: Resolving Item Signatures.....	15
Characteristics of Assessment Items.....	7	Assignment of Unresolved Item	
SOLO Taxonomy.....	7	Signatures.....	15
Bloom’s Taxonomy.....	8	Item List Amendments.....	16
Processes of Comprehension.....	8	Amendments to Definitions.....	16
Curriculum Area Processes.....	8	Resolution Procedure.....	16
Curriculum Area Objectives.....	9	Characteristics of Texts.....	17
Level of Agreement on Text		Text Form.....	17
Characteristics.....	11	Curriculum Level and Difficulty.....	17
		Text Purpose.....	18
		Print and Illustration Considerateness...	18

Text Genre (Purpose)	18
Essential Learning Area	18
Characteristics of Items	18
SOLO Taxonomy	19
Processes of Comprehension	19
Curriculum Area Processes	19
Curriculum Area Objectives	19
Agreement between Raters and Experts.....	20
Agreement between Teachers and Experts on Curriculum Level of Texts ..	21
Agreement between Teachers and Experts on the SOLO Taxonomy for Assessment Items	21
Agreement between Teachers and Experts on the Comprehension Processes of Assessment Items	21
Agreement between Teachers and Experts on Curriculum Area Processes of Assessment Items	21
Summary of Findings.....	22
Research Questions 1 and 2: Text and Item Characteristics.....	22
Research Question 3: Level of Agreement	23
Reliability	23
Research Question 4: Comparison of SOLO and Bloom’s Cognitive Processing Taxonomies	23
Consistency of Rating.....	23
Issues and Recommendations.....	24
Issues	24
Recommendations	24
References.....	25
Appendix 1: Sources Used in Development of Definitions	26
Appendix 2: Definitions of Categories and Variables	26
Definitions of Categories and Variables Used to Classify Reading Texts	26
Definitions of Categories and Variables Used to Classify Assessment Items	31
Appendix 3: Characteristics of Individual Reading Texts and Assessment Items (Draft)	35
Appendix 4: Level of Agreement on Curriculum Level of Texts.....	46
Appendix 5: Resolved Text and Item Characteristics.....	48

Introduction

The School of Education at the University of Auckland has been contracted by the Ministry of Education to develop new literacy and numeracy assessment tools for use with students in Years 5 to 7, in English and in Maori. The project to develop these tools is known as Project asTTle (Assessment Tools for Teaching and Learning).

The tools will be supplied to schools on CD-ROM and will consist of “banks” of assessment items (or tasks) and a program to make it easy for schools to analyse and aggregate student assessment information. The intention is to provide schools (including teachers, parents, and boards) with new high quality, externally referenced tools that will assist in identifying students’ strengths and weaknesses in literacy and numeracy. The tools are designed to provide valid and useful information on achievement patterns of whole groups or subgroups of students, to assist the teaching of learning outcomes in reading, writing, and numeracy.

A bank of assessment items in the area of literacy for students in Years 5 to 7 has been developed. The assessment material relates directly to curriculum statements, and is closely linked to current teaching and learning practices. Test users (usually teachers) will be able to compile tests from assessment items in the bank using the program on the CD-ROM. They will be asked to specify which curriculum area and what difficulty level they want the test to be, so that the test is optimal for their purposes. Assessment items have been developed to cover a range of text features and comprehension processes that are important in assessing student achievement at Levels 2 to 4 of the English curriculum.

The research described here identified the characteristics of the reading texts and assessment items developed for the item bank. The project adopted a similar methodological approach to that taken by Burstein et al. (1995/1996) in their study of the validity of achievement level descriptors in the National Assessment of Educational Progress (NAEP).

In that study, six expert mathematics teachers independently classified mathematics items from the NAEP according to curricular and linguistic categories. When four of the six raters agreed, a characteristic was assigned to the item.

Purpose of the Research

The purpose of the research was:

- To map the characteristics of reading texts and assessment items developed as literacy instruments for Project asTTle, using a list of pre-determined categories and associated variables (see below for details).
- To ascertain the reliability of the raters in assigning texts and items to categories (and variables within these categories).

To this end, the researchers posed the following research questions:

1. Which of the given categories and their associated variables apply to the selected *reading texts* intended for use in assessment of literacy skills by Project asTTle?
2. Which of the given categories and their associated variables apply to the selected *assessment items* intended for use in assessment of literacy skills by Project asTTle?
3. What level of agreement and reliability is reached by participating teachers in judging whether each of the given categories and associated variables apply to the reading texts and assessment items?
4. Which of the two cognitive processing taxonomies, SOLO or Bloom's, do teachers reach the highest level of agreement on, when classifying the assessment items?

Methodology

Development of the Categories and Variables Used to Classify Reading Texts and Assessment Items

The first step was to identify and develop definitions for key literacy categories of both text features and comprehension processes (i.e., the processes involved in answering an assessment item or task). AsTTle team

members undertook this work. A list of the sources used to develop the definitions is given in Appendix 1.

Categories and variables used to classify reading texts. Each category related to the features of a reading text has two or more variables. The variables are mutually exclusive – that is, only one variable under each category is applicable to any one reading text – with the exception of Essential Learning Area objectives, for which more than one objective may be applicable. The definitions of these categories are given below. More detailed definitions of the categories and their variables are given in Appendix 2.

- *Form* – The shape of the text in either continuous or non-continuous form affects the nature of communication. This category is based on the PISA classification system.
- *Curriculum Level* – Levels of achievement in the New Zealand English curriculum.
- *Difficulty within Curriculum Level* (rated in conjunction with curriculum level) – The level of difficulty of text within the assigned curriculum level.
- *Purpose* – There are two major purposes of texts adopted from the IEA PIRLS study: literary or informational.
- *Print Considerateness* – The level of assistance the text offers readers in understanding the meaning.
- *Illustration Considerateness* – The level of assistance illustrations offer to the reader in understanding the text.
- *Genre* – Within each purpose there are a variety of purposes and the intended audiences that further distinguish texts.
- *Essential Learning Area* – The content or topic of each text can be described by the essential learning area (defined by the New Zealand Curriculum Framework) that it belongs to.

Categories and variables used to classify assessment items. The categories listed below relate to the comprehension and cognitive processes used in answering an assessment item (or task) and to curriculum objectives of that item. Each category has two or more variables,

which are mutually exclusive – that is, only one variable under each category is applicable to any assessment item – with the exception of Curriculum Area Objectives, for which any number of objectives may be applicable. The definitions of these categories are given below. More detailed definitions of the categories and their variables are given in Appendix 2.

- *SOLO Taxonomy* – Depth of cognitive processing as defined the Structure of Observed Learning Outcomes (SOLO) taxonomy.
- *Bloom's Taxonomy* – A well-known set of broad cognitive categories that describe the intellectual processes required to answer questions.
- *Processes of Comprehension* – Four comprehension processes that enable students to construct meaning from written texts, taken from the Performance in International Reading Literacy Survey (PIRLS), a study of reading among nine-year-olds.
- *Curriculum Area Objectives* – These are the objectives that further specify the achievement aims of the close reading strand of the English curriculum. The objectives are organised by major categories specified in an earlier curriculum mapping exercise. Appendix Table 12 lists the objectives, including those added post facto.
- *Curriculum Area Processes* – The English curriculum identifies three cognitive processes integral to the development of literacy.

Workshops

A three-day Item Signature workshop was run to critically classify reading texts and assessment items to ensure they met quality standards. Workshop participants, all practising teachers, were trained in the classification work.

Twelve teachers were purposefully selected in light of their previous involvement with the project, their experience in the area of literacy, and their current practice. Of these, 11 teachers took part in the workshop; one teacher withdrew due to unforeseen circumstances.

The authors of this report conducted the workshop. The second author, who has expertise in literacy and the English curriculum, trained the participants in defining the categories and associated variables, while the first author co-ordinated and oversaw the workshop process and drafted the results.

Participants' key task during the workshop was to rate the reading texts and assessment items according to the categories and associated variables defined above. The training was modelled on procedures used in preparing teachers for marking student writing (Baker, Aschbacher, Niemi, & Sato, 1992). Following training, 44 texts and 292 items were rated by teachers in two workshop groups. The division of the teachers into the two groups was only to assist in assigning tasks: All ratings were conducted independently, as in the Burstein et al. study. The items and texts represent approximately two-thirds of all items and texts being prepared for the aTTle CD-ROM in literacy.

Group 1 rated the reading texts for Form, Curriculum Level, Difficulty within Curriculum Level, Print Considerateness, and Illustration Considerateness, and rated the assessment items for SOLO Taxonomy, Bloom's Taxonomy, and Processes of Comprehension. Group 2 rated the reading texts for Genre, Essential Learning Area, and Purpose, and rated the assessment items for Curriculum Area Processes and Curriculum Area Objectives.

Some of the teachers did the rating work that would have been done by the absent teacher, so that each category received a minimum of six ratings. Some raters from Group 1, upon finishing their own work, also contributed to the rating of assessment items according to the Group 2 curriculum processes and objectives.

The reading texts and assessment items were considered to have a particular characteristic when there was a two-thirds majority agreement or better among the teachers rating them.

One text and its associated items were used for training. While the text characteristics of this text are included in the results of this study, the items were rated in the second item signature study.

Of the 292 assessment items included in this study, 270 assess comprehension of the 44 reading texts. The remaining 22 items were stand-alone language skills items that did not depend on a reading text for completion.

Note that results from the Curriculum Area Objectives ratings were revised post facto to better reflect the objective of assessment items that teachers had classified as *use personal background knowledge and experience to bring meaning to text*. Details are provided in the Findings section below.

Participant Characteristics

The teachers taking part in the Item Signature workshop:

- were highly experienced teachers, with most having more than 10 years' teaching service;
- currently taught either senior school (Years 4 to 6) or intermediate (Years 7 to 8);
- had wide-ranging previous teaching experience, from new entrant to intermediate level;
- had responsibility for curriculum development in their schools across a range of curriculum areas including English;
- were each responsible for literacy in their schools in roles such as literacy leadership, programmes, and assessment;
- were responsible for assessment and testing in their schools;
- were each involved with literacy projects and/or literacy contracts;
- had qualifications other than a Diploma of Teaching that were generally at a tertiary Certificate or Diploma level (e.g., Advanced Diploma of Teaching, TESOL Certificate). Four of the eleven teachers had university degrees, and three were currently undertaking Master's papers in Education.

Findings

Characteristics of Texts

The characteristics of individual texts across all of the categories are given in Appendix Table 14 (in Appendix 3). Where there was no agreement on characteristics (e.g., in Text 6,

Black Noddy, there was disagreement on Form, Curriculum Level and Difficulty, and Illustration Considerateness), an asterisk is used to signal this. Project asTTle literacy experts examined these ratings, and the lack of agreement on them resolved.

Text Form

Of the 44 texts, just under half (48%) were characterised as continuous; that is, composed of sentences and organised into paragraphs (see Table 1). Slightly fewer (41%) were characterised as non-continuous; that is, organised or formatted differently from continuous text, using, for example, lists and diagrams. There was no agreement on the form of the five remaining texts.

Table 1
Characteristics of Text Form

Text Form	Number	% of Total
Continuous	21	48%
Non continuous	18	41%
No agreement	5	11%
Total	44	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Curriculum Level and Difficulty

The majority of texts (72%) were assigned to either Level 2 (39%) or Level 3 (34%) of the curriculum (see Table 2). For nearly a quarter (10) of the texts, no agreement was reached. Just two texts were assigned to Level 4 of the curriculum.

However, there was much less agreement about the texts' difficulty within the curriculum level. Just ten (23%) of the 44 texts were assigned a rating for difficulty within curriculum level. These ten texts had been assigned to either Level 2 or Level 3 of the curriculum. Four of the six texts assigned to Level 2 were characterised as Basic, and two were characterised as Proficient. The four Level 3 texts on which agreement was reached were characterised as Proficient.

For more than three-quarters (77%) of all texts, there was no agreement reached on difficulty within curriculum level.

A full breakdown of the level of agreement on curriculum level and difficulty within level for individual texts is given in Appendix Table 16 (in Appendix 4).

Table 2
Text Characteristics by Curriculum Level and Difficulty

Levels	n	% of total	Difficulty			
			Basic	Prof	Adv	*
L2	17	39%	4	2	0	11
L3	15	34%	0	4	0	11
L4	2	5%	0	0	0	2
*	10	23%	*	*	*	10
Total	44	100% ^a	4	6	0	34

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

* = no agreement.

^a Percentages do not add to 100% because of rounding.

Text Purpose (PIRLS)

Assessment of reading literacy focuses on two purposes that account for most of the reading done by young students both in and out of school; that is, *literary experience* and *acquire and use information*. Of the 44 reading texts in this study, 50% (22) were assigned the purpose *acquire and use information*, and 48% (21) the purpose of *literary experience*. In only one instance was there no agreement, which was for the text *Growing a Tree*. (See Table 3.)

Table 3
Characteristics of Text Purpose (PIRLS)

Text Purpose (PIRLS)	Number	% of Total
Information	22	50%
Literary experience	21	48%
No agreement	1	2%
Total	44	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Print Considerateness

All reading texts were characterised as having considerate print; that is, print that helps readers to comprehend the content of the texts (see Table 4).

Table 4
Characteristics of Text Print Considerateness

Text Print Considerateness	Number	% of Total
Considerate Print	44	100%
Non-considerate Print	0	–
No agreement	0	–
Total	44	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Illustration Considerateness

Considerate illustrations help readers to comprehend the content of the reading text. Illustrations that are purely decorative, tangential, highly abstract, or poorly sequenced are non-considerate. Eleven of the 44 texts were not applicable to this category, as they had no illustrations. Considerate illustrations were found in 27 (82%) of the 33 reading texts (see Table 5). Just two texts were deemed to have non-considerate illustrations: *Fog* and *Contents Page*. There was no agreement on four texts: *New Zealand Rugby Union*, *Paper Superplanes*, *Black Noddy*, and *Back Cover of Rebound*.

Table 5
Characteristics of Text Illustration Considerateness

Text Illustration Considerateness	Number	% of Total Applicable
Considerateness of Illustration	27	82%
Non-considerateness of Illustration	2	6%
No agreement	4	12%
Total	33	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Genre (Purpose)

The term genre is used to describe the purposes of texts – entertaining, reporting, instructing, arguing, and explaining. It is this and not its form that determines the genre of a text; for example, a letter can explain or argue.

The most prominent purpose of the reading texts in this study was to entertain. This was assigned to nearly half (48%) of the 44 texts (see Table 6). For nearly a quarter (23%), no

agreement was reached regarding genre. Of the remaining texts, 11% were characterised as reporting, 14% as instructing, and just one each as arguing and as explaining. (For the list of genre assigned to individual texts, see Appendix Table 14, in Appendix 3.)

Table 6
Characteristics of Text Genre (Purpose)

Text Genre (Purpose)	Number	% of Total
Entertain	21	48%
Instruct	6	14%
Report	5	11%
Argue	1	2%
Explain	1	2%
No agreement	10	23%
Total	44	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Essential Learning Area

The New Zealand Curriculum specifies seven essential learning areas that describe in broad terms the knowledge and understanding that all students need to acquire and incorporate during the first ten years of school. The 44 reading texts were considered relevant to six of the seven essential learning areas. Mathematics was not assigned to any text.

Unsurprisingly, nearly two-thirds (64%) of the reading texts were characterised as pertinent to Language (see Table 7). This is consistent with the fact that the English curriculum is part of the Essential Learning Area of Language. Six texts (14%) were characterised as relevant to Science, two (5%) to Technology, and just one each to Social Sciences, The Arts, and Health. There was no agreement on five texts. (For the list of Essential Learning Areas assigned to individual texts, see Appendix Table 14 in Appendix 3.)

Table 7
Essential Learning Area of Texts

Essential Learning Area of Text	Number	% of Total
Language	28	64%
Science	6	14%
Technology	2	5%
Social Sciences	1	2%
The Arts	1	2%
Health	1	2%
Mathematics	0	–
No agreement	5	11%
Total	44	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Characteristics of Assessment Items

The characteristics of individual assessment items across all of the categories are given in Appendix Table 15 (in Appendix 3). Where there was no agreement on characteristics (e.g., on *Grandad's Cupboard*, Item 43, there was disagreement on Bloom's Taxonomy and Processes of Comprehension), an asterisk is used to signal this. Later in the study, literacy experts from the asTTle team examined those items on which agreement was not reached by the raters (and the *Kia Ora Sally* items which were used in training and not rated) and resolved the disagreement.

SOLO Taxonomy

Using the SOLO cognitive processing taxonomy, the greatest number (126, or 43%) of the 292 assessment items were characterised as unistructural; that is, only one piece of information is required for an answer (see Table 8). Fewer items were considered to be multistructural and relational – 13% and 12% respectively. A small number of items (14) were characterised as extended abstract. There was no agreement reached on 27% (78) of all items.

Table 8
Characteristics of Items by SOLO Taxonomy

SOLO Taxonomy	Number	% of Total
Unistructural	126	43%
Multistructural	38	13%
Relational	36	12%
Extended Abstract	14	5%
No agreement	78	27%
Total	292	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Bloom's Taxonomy

When assessed according to Bloom's cognitive processing taxonomy, the majority of assessment items were characterised as requiring either knowledge or comprehension processes (see Table 9). More than twice as many items were characterised as requiring knowledge as comprehension – 46% compared to 20%. Analysis was assigned to only four items, and evaluation to just one. No items were assigned application or synthesis. No agreement was reached on nearly a third of all items.

Table 9
Characteristics of Items by Bloom's Taxonomy

Bloom's Taxonomy	Number	% of Total
Knowledge	135	46%
Comprehension	59	20%
Analysis	4	1% ^a
Application	0	–
Synthesis	0	–
Evaluation	1	0% ^b
No agreement	93	32%
Total	292	100% ^c

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

^a Figure to 2 decimal places is 1.37%.

^b Figure to 2 decimal places is 0.34%.

^c Percentages do not add to 100% because of rounding.

Processes of Comprehension

There are four comprehension processes that enable students to construct meaning from written texts. These are: focusing on and retrieving explicitly stated *information*; making straightforward *inferences*; *interpreting* and integrating ideas and information; and examining and *evaluating* content, language,

and textual elements. The greatest number of assessment items were characterised as *information* (42%) (see Table 10). Small percentages were characterised as involving *inference* and *interpreting*, 11% and 10% respectively. *Evaluation* was assigned to just one item.

There was no agreement reached on more than a third (36%) of all items.

Table 10
Characteristics of Items by Processes of Comprehension

Processes of Comprehension	Number	% of Total
Information	124	42%
Inference	32	11%
Interpret	29	10%
Evaluation	1	0% ^a
No agreement	106	36%
Total	292	100% ^b

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

^a Figure to 2 decimal places is 0.34%.

^b Percentages do not add to 100% because of rounding.

Curriculum Area Processes

Of the three curriculum area processes, *processing information* was applied to just under half (47%) of all assessment items (see Table 11). *Thinking critically* was assigned to 18% of the items, and *exploring language* to 20%. No agreement was reached on 15% of all items.

Table 11
Characteristics of Items by Curriculum Area Processes

Curriculum Area Processes	Number	% of Total
Exploring Language	57	20%
Thinking Critically	53	18%
Processing Information	138	47%
No agreement	44	15%
Total	292	100%

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

Curriculum Area Objectives

Unlike the characteristics under all the other categories, Curriculum Area Objectives were not mutually exclusive. Raters assigned as many objectives as they considered relevant to each of the 292 items.

The five types of Curriculum Area Objectives were Comprehend, Communicate, Skills, Conventions, and Attitude, each with a range of objectives (as detailed in Appendix Table 12). The objectives assigned to the 292 assessment items came under the headings Comprehend, Skills, Conventions, and Attitude. Seventy-two items were classified by the teachers as relevant to Attitude, all under the objective (5b) *use personal background knowledge and experience to bring meaning to text*. Upon examination by the second author, it was determined that what these items assessed was not actually attitude; rather, these items required students to demonstrate script-implicit prior knowledge, such as knowledge of vocabulary (including phrases and

colloquialisms), poetic and figurative language, and publishing and print conventions. Consequently, five new objectives were created and these 72 items were reassigned, leaving no assessment items categorised under Attitude. Table 12 presents these revised results.

Of the 17 Curriculum Area Objectives under Comprehend, 11 were assigned to one or more of the 292 assessment items. Similarly, 8 of the 11 Skill objectives, and all 4 of the Conventions objectives were assigned to one or more items. The objectives assigned to the assessment items are listed in Table 12.

As the table shows, the four objectives most commonly assigned to items came under the Comprehend and Skills headings. They were: (3h) *find, select, and retrieve information* (Skills), 46% of items; (1j) *use understandings and information gained from texts* (Comprehend), 39% of items; (1i) *make inferences from texts* (Comprehend), 21% of items; and (1n) *use and understand vocabulary* (Comprehend), 17% of items.

Table 12

Curriculum Area Objectives Assigned to Items and Percentage of Items Assigned to Each Objective

Comprehend	Skills	Conventions
(1b) Consistently read for meaning (7 items, 2%)	(3b) Make confident use of semantic (e.g., context or setting), syntactic, visual (e.g., illustrations, diagrams), and grapho-phonetic cues (7 items, 2%)	(4a) Use appropriately a variety of punctuation conventions: commas, full-stops, capital letters, exclamation marks, question marks, quotation marks (15 items, 5%)
(1d) Compare similarities and differences both within and between texts (5 items, 2%)	(3c) Use strategies to solve unknown words and gain meaning, anticipate/predict, re-read, self-correct, question, confirm (27 items, 9%)	(4b) Use grammatically correct structures; e.g., sentences, tense (8 items, 3%)
(1e) Make cohesive links between aspects of text (6 items, 2%)	(3d) Make links between verbal and visual information (27 items, 9%)	(4c) Spell correctly (12 items, 4%)
(1f) Explore author's purpose and question author's intention (16 items, 5%)	(3e) Predict possible outcomes (3 items, 1%)	(4d) Use and understand text-publishing conventions (5 items, 2%)
(1g) Identify main ideas in texts (10 items, 3%)	(3f) Identify some parts of word classes (9 items, 3%)	
(1i) Make inferences from texts (62 items, 21%)	(3g) Identify features and purposes of text types (7 items, 2%)	
(1j) Use understandings and information gained from texts (115 items, 39%)	(3h) Find, select, and retrieve information (135 items, 46%)	
(1n) Use and understand vocabulary (51 items, 17%)	(3i) Skim/scan for information (28 items, 10%)	
(1o) Use and understand poetic and figurative language use (rhyme, metaphor) (4 items, 1%)		
(1p) Make use of prior knowledge (script implicit) (11 items, 4%)		
(1q) Understand and organise material in appropriate sequences (3 items, 1%)		
(11 of 17 objectives)	(8 of 11 objectives)	(4 of 4 objectives)

Note. Figures show the percentage of the 292 items assigned to each objective. Objectives were not mutually exclusive.

Three Skills objectives – (3i) *skim/scan for information*, (3d) *make links between verbal and visual information*, and (3c) *use strategies to solve unknown words and gain meaning* – were each applied to around 10% of assessment items. Conventions objectives (4a–4d) were applied less often, to two to five percent of items. For a full list of the Curriculum Area Objectives applied to individual items, see Appendix Table 15 (in Appendix 3).

Some of the Curriculum Area Objectives included in this study were not assigned to any of the 292 assessment items. The objectives that were not assigned to any item are listed in Table 13. There were 6 of the 17 Comprehend objectives, 3 of the 11 Skill objectives, all 3 Communicate objectives, and all 5 Attitude objectives.

Raters did not reach agreement on curriculum objective for 10 of the 292 items. Items that were not assigned any objective were:

- *Log* Item 43.2;
- *Grandad's Cupboard* Items 41 and 45;
- *Rebound* Item 30;
- *Fisherman's Boats* Item 38;
- Choose the best word Item 25;
- Back Cover of *Rebound* Item 20;
- *Nature Maps* Item 10;
- *Paper Superplanes* Item 14; and
- Rewrite the sentence Item 16.

In Appendix Table 15 (in Appendix 3), this lack of agreement is signalled with a series of asterisks alongside each item.

Table 13
Curriculum Area Objectives Not Assigned to Assessment Items

Comprehend	Communicate	Skills	Attitudes
(1a) Justify reading choices	(2a) Share response to text with others	(3a) Read independently for sustained periods	(5a) Demonstrate a willingness to choose to read a pleasurable activity
(1c) Identify fiction and non-fiction texts	(2b) Discuss texts and identify aspects; e.g., plot, characters, setting, and theme.	(3j) Note take in a variety of ways; e.g., using graphic organisers	(5b) Use personal background knowledge and experience to bring meaning to text
(1h) Provide detail to support main ideas	(2c) Empathise with characters and situation in texts	(3k) Use effectively a dictionary, thesaurus, or atlas	(5c) Take a risk when choosing texts to read
(1k) Question to locate and retrieve information			(5d) Use a range of technologies for personal reading; e.g., library and online texts
(1l) Question to clarify meaning in texts			(5e) Read and discuss a range of texts from different times and places
(1m) Read critically a range of texts for bias, stereotyping, and propaganda			
(6 of 17 categories)	(3 of 3 categories)	(3 of 11 categories)	(5 of 5 categories)

Note: Assignment of assessment items as (5b) *use personal background knowledge and experience to bring meaning to text* was revised post facto to better reflect the nature of the items.

Level of Agreement on Text Characteristics

Text Form

Raters reached a good level of agreement (89%) when mapping the text form of each of the 44 reading texts. There was disagreement on just five texts (11%).

The mean inter-rater correlation, or the extent to which raters agreed with each other, is good. The alpha reliability (α), or measure of rater consistency in assigning characteristics, was high. (See Table 14.)

Essential Learning Area

As with text form, raters had a good level of agreement (89%) on the Essential Learning Areas of the 44 reading texts. As with text form, there was disagreement on five of the texts, although these were not the same five texts.

The mean inter-rater correlation on the assigning of Essential Learning Areas shows just moderate agreement. However, the rater reliability, or consistency in assigning scores, for this category is good ($\alpha = .80$). (See Table 14.)

Curriculum Level and Difficulty within Level

Raters had considerably more difficulty reaching agreement when assigning curriculum difficulty characteristics than in assigning curriculum levels to the 44 reading texts. While there was 77% agreement on Curriculum Levels, there was agreement on Difficulty within Curriculum Level for only 23% of texts.

To gain a measure of agreement across both categories, raters' assignments of Curriculum Level and Difficulty within Level for all 44 texts were converted to a scale from 0 to 10. On this scale, the points 1 to 9 represented the combination of level (2, 3, 4) and difficulty (Basic, Proficient, Advanced); namely, 1 = Level 2 Basic, 2 = Level 2 Proficient, 3 = Level 2 Advanced, and so on through to 9 = Level 4 Advanced. The point 0 indicated a rating of less than Level 2 and 10 indicated a rating of greater than Level 4 (see Appendix Table 16). The inter-rater correlation for curriculum level shows moderate agreement between raters ($r = .61$). The alpha reliability, or measure of consistency in assigning scores, for these categories is good ($\alpha = .90$). (See Table 14.)

Print and Illustration Considerateness

A majority of raters agreed that all 44 texts had considerate print. The inter-rater correlation for print considerateness was weak but was affected by the lack of variance in the data, particularly for two raters who rated all 44 texts as *print considerate*. This lack of variance in the data artificially depressed both the inter-rater correlation and the alpha reliability measure. (See Table 14.)

The actual number of texts with illustrations was 33. Agreement on the considerateness of text illustrations was high – agreement was reached on 91% of the 33 texts rated. The inter-rater correlation for illustration considerateness indicates moderate agreement between raters when assigning scores, with only moderate consistency in assigning scores to this category ($\alpha = .74$). (See Table 14.)

Text Purpose (PIRLS) and Genre

Of the two categories for mapping text purpose to the 44 reading texts, raters reached a higher level of agreement on Text Purpose (PIRLS) than on Genre (purpose). (This is perhaps not surprising given that the Purpose category had only two variables, while the Genre category had six.) There was disagreement on just 1 of the 44 texts regarding Purpose (PIRLS) characteristics, while regarding Genre (purpose) there was disagreement on 10 of the texts. The level of agreement was 21% higher for Text Purpose (PIRLS) than for Genre.

The inter-rater correlation for Text Purpose (PIRLS) was strong ($r = .75$), showing that, to a large extent, raters agreed with each other when

assigning scores for this category. The alpha reliability scores were also high ($\alpha = .95$), showing good consistency by each rater when scoring. There was also good consistency when raters assigned scores to Genre (purpose) ($\alpha = .84$). However, the inter-rater agreement on genre was only moderate ($r = .49$). (See Table 14.)

*Level of Agreement on Items**Relative Level of Agreement on SOLO and Bloom's Taxonomies*

When mapping the two cognitive processing taxonomies, SOLO and Bloom's, to the 292 assessment items, raters reached a slightly higher level of agreement on the SOLO taxonomy – 73% agreement, compared with 68% agreement for Bloom's taxonomy.

Raters did comment, however, that certain items were difficult to classify using the SOLO taxonomy – in particular, items that tested prior knowledge of grammar, items about language structure, and items which were stand-alone sentence tasks without reading passages. Despite these concerns regarding the use of the SOLO taxonomy, the level of agreement is reasonable.

The mean inter-rater correlation shows the extent to which raters agreed with each other. The inter-rater correlation for both SOLO and Bloom's is identical ($r = .43$) and shows moderate agreement. The alpha reliability is also identical ($\alpha = .83$) and shows that raters had good consistency in assigning scores to both these categories. (See Table 15.)

Table 14
Level of Agreement on Reading Texts

Text Category	Agree n (%)	Disagree n (%)	No. of Raters	Mean <i>r</i>	α
Text Form	39 (89%)	5 (11%)	6	.67	.92
Essential Learning Area	39 (89%)	5 (11%)	6	.43	.80
Curriculum Level	34 (77%)	10 (23%)	6	.61	.90
Difficulty within Curriculum Level	10 (23%)	34 (77%)	– ^a	– ^a	– ^a
Print Considerateness	44 (100%)	0 (–)	8	.07	.27
Illustration Considerateness ^b	30 (91%)	3 (9%)	5	.44	.74
Text Purpose (PIRLS)	43 (98%)	1 (2%)	6	.75	.95
Text Genre (Purpose)	34 (77%)	10 (23%)	6	.49	.84

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better.

^a Number of raters, mean *r*, and alpha for difficulty are reported as combined scores in the row for curriculum level.

^b Only 33 texts had illustrations.

Table 15
Level of Agreement on Assessment Items

Item Category	Agree n (%)	Disagree n (%)	No. of Raters	Mean <i>r</i>	α
SOLO Taxonomy	214 (73%)	78 (27%)	7	.43	.83
Bloom's Taxonomy	199 (68%)	93 (32%)	7	.43	.83
PIRLS Processes of Comprehension	186 (64%)	106 (36%)	6	.44	.83
Curriculum Area Processes	248 (85%)	44 (15%)	6	.63	.91

Note. Items are deemed to have a characteristic where there is a two-thirds agreement or better.

PIRLS Processes of Comprehension

Raters were unable to reach agreement about the characteristics of a large number of items (106, 36%) when mapping Processes of Comprehension. Agreement was reached on nearly two-thirds (64%) of all items for the category.

The inter-rater correlation indicates a moderate level of agreement between raters ($r = .44$). However, while the level of agreement between raters is not strong, there is a good level of consistency ($\alpha = .83$). (See Table 15.)

Curriculum Area Processes

Raters reached a high level of agreement about the characteristics of the 292 items with regard to their Curriculum Area Processes, with agreement reached on 85% of all items.

The inter-rater correlation shows that raters agreed with each other moderately when assigning the characteristics of Curriculum

Area Processes to assessment items with a high level of consistency in assigning the characteristics ($\alpha = .91$). (See Table 15.)

Curriculum Area Objectives

Curriculum Area Objectives, unlike variables for other categories in this study, were not mutually exclusive, and raters assigned as many objectives as they considered relevant to each of the 292 items. Only 10 of the 292 items were not assigned any objective because of a lack of majority agreement.

Because ratings in this category were not mutually exclusive, no correlations were calculated.

A list of the objectives assigned to the 292 items (and the number of items assigned to each objective) can be seen in Table 12. For a full description of Curriculum Area Objectives assigned to individual items, see Appendix Table 15 (in Appendix 3).

Teacher Characteristics

Teaching Background

Teaching experience. The majority of teachers, 9 of 11, taking part in the Item Signature workshop had more than 10 years' teaching experience. Two of the 11 teachers had 6 to 10 years' experience.

Current teaching level. Just over half (6) of the teachers taking part in the Item Signature workshop were currently teaching Years 4 to 6, and just under half (5) were teaching Years 7 to 8. Two of the 11 teachers taught multiple Year levels: one teacher taught from new entrant to senior school (Years 0–6) and the other teacher taught from junior school to intermediate level (Years 2–8). However, all teachers were currently teaching within the Year levels for which the assessment materials were designed.

Previous teaching levels. Each of the 11 teachers taking part in the Item Signature workshop had previously taught senior school (Years 4–6). Three-quarters (8) of the teachers had previously taught junior school (Years 2–3), just over half (6) had taught intermediate (Years 7–8), and 3 of the 11 had taught new entrants (Years 0–1).

Curriculum responsibilities. Teachers involved in the Item Signature workshop were generally responsible for, or had duties associated with, more than one curriculum area. They mentioned the following curriculum areas and associated duties:

- Curriculum co-ordinator – overseeing all curriculum development (two teachers).
- English (five teachers):
 - leading the English curriculum team;
 - reviewing written language criteria;
 - convening the English curriculum committee;
 - professional reading co-ordinator, (i.e., responsible for learning and teaching handbook);
 - recovery and extension programmes;

- English CWSA (Children With Special Abilities) – teaching English CWSA classes;
- Library responsibility and overall responsibility for literacy.
- Maths (three teachers):
 - Mathematics curriculum leader.
- Gifted and talented education (two teachers):
 - developing/teaching programme (for gifted and talented children).
- Other curriculum areas:
 - Arts, Music, and Drama;
 - Physical Education;
 - Social Studies;
 - Science;
 - ESOL;
 - Special needs.

Literacy responsibilities. Teachers involved in the Item Signature workshop had the following responsibilities for literacy in their schools:

- literacy leadership/co-ordination/resource allocation;
- literacy programme development;
- literacy assessment;
- ESOL administration and teaching;
- teaching special programmes.

Responsibilities for assessment. Teachers involved in the Item Signature workshop had the following responsibilities for assessment in their schools:

- whole school responsibility (three teachers);
- assessment for English (one teacher);
- co-ordination of PAT testing (two teachers);
- co-ordination of Australian Schools (NSW) exams (two teachers);
- analysis of data;
- scoring;
- organizing testing procedures;
- setting up appropriate assessments from the New Zealand Council for Educational Research (NZCER) Assessment Resource Bank (ARB) website;
- school facilitator for Assessment for Better Learning (Abel) contract.

Professional Activities

Professional activities focused on literacy. The professional activities of teachers taking part in the Item Signature workshop were focused around literacy projects and/or contracts. They had no current or past involvement in literacy research, other than project/contract work and in one instance the preparation of research questions focusing on reading comprehension as part of a BEd paper.

Literacy projects/contract involvement. Teachers named the following projects/contracts and roles:

- asTTle Item Writing and Review workshops 2000 (seven teachers);
- facilitating ABeL contract – written language – (two teachers);
- work on a team supplying writing exemplars for the Ministry of Education (two teachers);
- co-ordinating MOE contract for English curriculum;
- co-ordinating MOE contract for NESB children (ESOL programme);
- Oral literacy (NESB) contract 2001;
- NZCER ARB – English literacy contract leader;
- ran workshops/seminars on literacy in the USA;
- South Auckland English project (25 years ago).

Training and Qualifications

Teacher qualifications. Although this group of teachers had wide and rich experience in literacy and assessment, only 3 of the 11 had completed Bachelor’s degrees. Their qualifications are detailed in Table 16 below.

Table 16
Teacher Qualifications

Qualification	No. of Teachers
Diploma of Teaching	11
Advanced Diploma of Teaching	4
BEd	3
Masters Papers in Education	3
Diploma (Teacher librarianship, school management)	2
TESOL Certificate	1
BA papers in English	1
BTheology – Literature	1
Certificate – teachers’ accounting	1

Attendance at literacy training courses. Teachers had received the following training and/or attended the following courses to do with literacy:

- Conferences for Reading Associates NZADIE;
- Harry Hood Courses (two teachers);
- Reading Recovery Training;
- literacy leadership workshop;
- Australian Children’s Book Council Conference in Canberra 2000;
- World Convention of Reading;
- Information studies – info link;
- Portfolios for assessment;
- LARIC.

Post Script: Resolving Item Signatures

Assignment of Unresolved Item Signatures

An item signature is the full set of characteristics of the item, including the characteristics of the text to which it refers. Item signatures will be used by the test compilation program on the asTTle CD-ROM to compile tests that meet the criteria set by the user and have a random distribution of item types.

Thus, in order for the item signatures to be used in the asTTle tools, lack of agreement by teachers on the item signatures had to be resolved by experts from the asTTle team.

Three experienced test constructors, all ex-teachers, from the asTTle team (including the second author), undertook the task of resolving disagreements. Text Curriculum Levels and

Difficulty with Level were completely reviewed. Other text characteristics – namely, Text Form, Text Purpose (PIRLS), Illustration Considerateness, Genre (purpose), and Essential Learning Area – were assigned in instances where there had not been agreement by teachers in the item signature study.

All 292 assessment items were reviewed in respect of the categories SOLO Taxonomy, Processes of Comprehension, and Curriculum Area Processes. Items were assigned Curriculum Area Objectives only in instances where there had not been agreement by teachers in the item signature study.

For a full description of all text and item characteristics and disagreement on characteristics as determined in the item signature study, see Appendix Tables 14 to 16 (in Appendices 3 and 4). For a full description of text and item characteristics when resolved, see Appendix Tables 17 and 18 (in Appendix 5).

Item List Amendments

The following amendments were made to the list of assessment items in Appendix Table 18 (in Appendix 5) as compared to the list in Appendix Table 15 (in Appendix 3):

- Items 8 to 13 from Paper A (*Kia Ora Sally*) were not rated by teachers in the item signature study so have received ratings by experts only.
- Items 1 to 6 from Paper G were not included in the item signature study so have received ratings by experts only.
- *Gull Rescue* Item 27, Paper H was reassessed by experts as being technically deficient and deleted, so appears only in Appendix Table 15 (in Appendix 3).
- Items 16 to 18, Paper E (Write the following words) were not included in Appendix Table 18 as these items are duplicates of Items 20 to 22 (*Shade the Bubbles*), Paper D.

Amendments to Definitions

Genre (Purpose). In order to resolve the Genre of texts, a new variable “inform” (i.e., texts that permit or assist location of or

navigation to information in a text, such as a table or contents or index) was created. All texts assigned to “other” were reassigned to this variable.

Curriculum Area Objectives. One Curriculum Area Objective that had not been assigned to any item in the item signature study – (2b) *discuss texts and identify aspects* (under Communication) – was used in resolving two items (Appendix Table 18, in Appendix 5).

Resolution Procedure

An iterative procedure was used to resolve lack of agreement on item signatures. This involved constant discussion and checking of definitions and review of previous decisions. The procedure was as follows:

- Item signature definitions (see Appendix Tables 9 to 13, in Appendix 2) for each category were consulted.
- The three experts discussed, reviewed, and referred to previous decisions on both reading texts and assessment items until consensus was reached.
- When experts determined Curriculum Levels, they referred to other texts and items that they had previously classified to ensure consistency.

Assigning Curriculum Levels to texts. Curriculum Levels were assigned using the following steps:

1. The three experts examined and discussed the 10 texts (23% of all texts) that a two-thirds or better majority of teachers in the item signature study had agreed on for both Curriculum Level and Difficulty within Level (see Appendix Table 16, in Appendix 4). After the experts reached consensus on these texts, the texts became the benchmark exemplars for all other decisions.
2. The experts assigned 8 of these 10 texts to the same Curriculum Level that had been assigned by teachers in the study, but Difficulty within the Level was reassigned. Experts used holistic judgement in reassigning levels. Factors considered in assigning both levels and bands within levels

are listed below. Two texts were moved to a higher level.

3. The remaining 34 texts were then assigned a Curriculum Level. Assignment was guided by comparison with the 10 benchmark exemplars, the factors listed below, and the definitions used in the item signature study.
4. Thirty texts were assigned to the same curriculum level that teachers had agreed on. Difficulty within that level was evaluated using judgement and comparison. As a result, two texts were reassigned levels to better fit the exemplars generated in Step 2.
5. Four (9%) of the 44 texts (*Kia Ora Sally*, *Email from Alaska*, *Gull Rescue*, and *Wish*) were changed to a higher level. All other texts (91%) were assigned to the same level identified by teachers in the item signature study.

The following factors were considered in assigning curriculum levels:

- *Length*: Longer texts are more difficult.
- *Vocabulary*: Longer and relatively uncommon words make text more difficult.
- *Figurative Language*: Metaphors, similes, idioms, and all kinds of non-literal language use make text more difficult.
- *Description*: Narrative text is simpler than text that is richly descriptive of emotion, events, or objects.
- *Syntactic Complexity*: The passive voice and subordination make text more difficult.
- *Considerateness*: Inconsiderate texts are more difficult.
- *Script-Implicitness*: Texts that require readers to infer more or bring more prior knowledge to the reading are more difficult.
- *Embedding*: Passages that have text forms embedded within them (e.g., descriptive paragraph within narrative, other texts quoted within the passage, or multiple texts to be read) are more difficult.
- *Dialogue*: Dialogue may or may not make a text more difficult to read, depending on other factors.
- *Norm Referencing*: Deciding that a text was reading-age appropriate for a child in the

modal year or age for a curriculum level meant that it was assigned to such a level.

Characteristics of Texts

Texts were considered to possess a particular characteristic where there was agreement of two-thirds or better by teachers in the item signature study, or where experts had agreed by consensus as discussed above. The final characteristics of individual texts are listed in Appendix Table 17 (in Appendix 5).

Text Form

Of the 44 texts, a majority (61%) were characterised as continuous, and just over two-fifths (41%) as non-continuous (see Table 17).

Table 17
Text Form (Final)

Text Form	Number	% of Total
Continuous	27	61%
Non continuous	17	39%
Total	44	100%

Curriculum Level and Difficulty

Texts were assigned across Level 2 Basic, Proficient, and Advanced, Level 3 Proficient and Advanced, and Level 4 Basic in fairly equal proportions. The number of texts assigned to these six levels ranged from five to eight (11% to 18%). Level 3 Basic and Level 4 Proficient and Advanced had the fewest texts assigned to them; two, three, and three respectively. (See Table 18.)

Table 18
Text Curriculum Level and Difficulty (Final)

Curriculum Level and Difficulty	Number	% of Total
Level 2 Basic	5	11%
Level 2 Proficient	5	11%
Level 2 Advanced	6	14%
Level 3 Basic	2	5%
Level 3 Proficient	8	18%
Level 3 Advanced	7	16%
Level 4 Basic	5	11%
Level 4 Proficient	3	7%
Level 4 Advanced	3	7%
Total	44	100%

Text Purpose

Of the 44 texts, slightly over half (52%) were assigned the purpose *acquire and use information*, with just two fewer texts (48%) assigned the purpose *literary experience* (see Table 19).

Table 19
Text Purpose (PIRLS) (Final)

Text Purpose	Number	% of Total
Information	23	52%
Literary experience	21	48%
Total	44	100%

Print and Illustration Considerateness

All 44 reading texts were characterised as being print considerate. Eleven of the 44 texts did not have illustrations; of the remaining 33 texts, the large majority (91%) were characterised as having considerate illustrations. Just three texts were characterised as non-considerate in their illustrations. (See Table 20.)

Table 20
Print and Illustration Considerateness (Final)

Characteristics	Print Considerateness		Illustration Considerateness	
	<i>n</i>	% of Total	<i>n</i>	% of Total Applicable
Considerate	44	100%	30	91%
Non-considerate	0	–	3	9%
Not applicable	0	–	11	
Total	44	100%	44	100%

Note. The number of texts with illustrations is 33.

Text Genre (Purpose)

The Genre of *entertain* was assigned to nearly half (48%) of the 44 reading texts. The 21 texts assigned to *entertain* are the same 21 texts assigned the purpose *literary experience* under the PIRLS criteria. As noted above, the remaining 52% of the texts are assigned the purpose *acquire and use information* as identified by the PIRLS criteria. As Table 21 shows, 16% of the texts were characterised as

reporting and 18% as *instructing*. Two texts were characterised as *arguing*, and three each as *explaining* and *informing*.

Table 21
Genre (Purpose) (Final)

Text Genre (Purpose)	Number	% of Total
Entertain	21	48%
Report	7	16%
Instruct	8	18%
Argue	2	5%
Explain	3	7%
Inform ^a	3	7%
Total	44	100% ^b

^a This variable was added post facto to better reflect the nature of the texts.

^b Percentages do not add to 100% because of rounding.

Essential Learning Area

Six of the seven Essential Learning Areas specified by the New Zealand Curriculum were considered applicable to the 44 reading texts (see Table 22). Mathematics was not assigned to any text. Nearly two-thirds of the reading texts were characterised as covering the area Language. Seven (16%) were characterised as Science, three each (7%) as Technology and as Social Sciences, two as Health, and just one as The Arts.

Table 22
Essential Learning Area (Final)

Text Essential Learning Area	Number	% of Total
Language	28	64%
Science	7	16%
Technology	3	7%
Social Sciences	3	7%
Health	2	5%
The Arts	1	2%
Mathematics	0	–
Total	44	100% ^a

^a Percentages do not add to 100% because of rounding.

Characteristics of Items

Where variables were mutually exclusive (i.e., on SOLO, Comprehension Processes, and Curriculum Area Processes), items were

considered to have a characteristic where there was a two-thirds or better agreement by teachers in the study or where experts had agreed by consensus as discussed above. Curriculum Area Objectives were single-value choices, and multiple objectives could be assigned if they were considered applicable.

Of the 292 items listed for rating by teachers in the item signature study, one was deleted from the list by the experts, and three items were determined to be duplicates of other items. These four items were excluded in the resolution process. Experts subsequently scored an additional 12 items, increasing the total number of assessment items to 300.

In Appendix Table 18 (in Appendix 5), item characteristics are described by paper, text name, and item number (e.g., E *Twinkle Twinkle Star* Item 31). Papers are labelled A to H.

SOLO Taxonomy

For the SOLO cognitive processing taxonomy, the greatest numbers of the 300 assessment items were characterised as either unistructural (111) or relational (97), 37% and 33% respectively. Multistructural items (58) comprised 19% of the total, and extended abstract items (34) made up 11% (see Table 23). Surface items (i.e., unistructural and multistructural) accounted for more than half (56%) of the items, and deep items (i.e., relational and extended abstract) made up the balance (44%).

Table 23
SOLO Taxonomy (Final)

SOLO Taxonomy	Number	% of Total
Unistructural	111	37%
Multistructural	58	19%
Relational	97	33%
Extended Abstract	34	11%
Total	300	100%

Processes of Comprehension

Nearly half (46%) of all assessment items were characterised as requiring straightforward *inference*, with just over a third (36%) characterised as requiring the reader to find

information. A small percentage (14%) were characterised as involving *interpretation*, and just 12 items (4%) were characterised as involving *evaluation* (see Table 24).

Table 24
Processes of Comprehension (Final)

Processes of Comprehension	Number	% of Total
Information	107	36%
Inference	137	46%
Interpret	42	14%
Evaluation	12	4%
Total	300	100%

Curriculum Area Processes

Processing information was assigned to 41% of the 300 items, *exploring language* to 33%, and *thinking critically* to 26% (see Table 25).

Table 25
Curriculum Area Processes (Final)

Curriculum Area Processes	Number	% of Total
Exploring Language	100	33%
Thinking Critically	79	26%
Processing Information	121	41%
Total	300	100%

Curriculum Area Objectives

Curriculum Area Objectives assigned to the 300 assessment items came under the headings Comprehend, Communicate, Skills, and Conventions (Table 26).

The four objectives most commonly assigned to items came under the Comprehend and Skills headings. They were: (3h) *find, select, and retrieve information* (Skills), 45% of items; (1j) *use understandings and information gained from texts* (Comprehend), 38% of items; (1i) *make inferences from texts* (Comprehend), 22% of items; and (1n) *use and understand vocabulary* (Comprehend), 17% of items.

Two Skills objectives – (3i) *skim/scan for information* and (3d) *make links between verbal and visual information* – were each applied to around 10% of assessment items. Convention objectives (4a–4d) were applied less often, to two to six percent of items. One Communicate

objective and eight Comprehend objectives were applied to one to six percent of items. For a full list of the Curriculum Area Objectives

applied to individual items, see Appendix Table 18 (in Appendix 5).

Table 26

Curriculum Area Objectives Assigned to Items and Percentage of Items Assigned to Each Objective (Final)

Comprehend	Communicate	Skills	Conventions
(1b) Consistently read for meaning (7 items, 2%)	(2b) Discuss texts and identify aspects; e.g., plot, characters, setting, theme (2 items, 1%)	(3b) Make confident use of semantic (e.g., context or setting), syntactic, visual (e.g., illustrations, diagrams), and grapho-phonetic cues (8 items, 3%)	(4a) Use appropriately a variety of punctuation conventions: commas, full stops, capital letters, exclamation marks, question marks, quotation marks (17 items, 6%)
(1d) Compare similarities and differences both within and between texts (5 items, 2%)		(3c) Use strategies to solve unknown words and gain meaning: anticipate/ predict, re-read, self-correct, question, confirm (9 items, 3%)	(4b) Use grammatically correct structures; e.g., sentences, tense (12 items, 4%)
(1e) Make cohesive links between aspects of text (8 items, 3%)		(3d) Make links between verbal and visual information (27 items, 9%)	(4c) Spell correctly (11 items, 4%)
(1f) Explore author's purpose and question author's intentions (18 items, 6%)		(3e) Predict possible outcomes (3 items, 1%)	(4d) Use and understand text-publishing conventions (5 items, 2%)
(1g) Identify main ideas in texts (10 items, 3%)		(3f) Identify some parts of word classes (6 items, 2%)	
(1i) Make inferences from texts (65 items, 22%)		(3g) Identify features and purposes of text types (9 items, 3%)	
(1j) Use understandings and information gained from texts (114 items, 38%)		(3h) Find, select, and retrieve information (135 items, 45%)	
(1n) Use and understand vocabulary (50 items, 17%)		(3i) Skim/scan for information (28 items, 9%)	
(1o) Use and understand poetic and figurative language use (e.g., rhyme, metaphor) (4 items, 1%)			
(1p) Make use of prior knowledge (script implicit) (11 items, 4%)			
(1q) Understand and organise material in appropriate sequences (5 items, 2%)			

Note. Figures show the number and percentage of the 300 items assigned to each objective. Objectives were not mutually exclusive.

Agreement between Raters and Experts

For those text and item categories that had been examined and reviewed by experts, the level of agreement between teachers who had previously rated these same texts and items and the expert raters was measured using Cohen's Kappa coefficient.

The Kappa coefficient attenuates correlation by adjusting for chance. The higher the

coefficient, the less likely it is that agreement is due to chance.

$$\kappa = \frac{P_o - P_c}{1 - P_c}$$

where P_o (Probability of observed) = (Sum of agreement cells) / N and P_c (Probability of chance) = (Sum of products of matching columns and rows) / N².

Agreement between Teachers and Experts on Curriculum Level of Texts

Teachers had reached agreement on the curriculum level of 34 of the 44 texts. Teacher and expert ratings for these 34 texts were compared (Table 27). The agreement between teachers and experts, adjusted for chance ($\kappa = .755$), indicates an acceptable agreement on curriculum level of each text.

Table 27
Agreement between Teachers and Experts on Curriculum Level

Experts' Rating	Teachers' Rating			Total
	Level 2	Level 3	Level 4	
Level 2	14	0	0	14
Level 3	2	13	0	15
Level 4	1	2	2	5
Total	17	15	0	34

Agreement between Teachers and Experts on the SOLO Taxonomy for Assessment Items

Teacher and expert ratings were compared for 210 of the 300 items (Table 28). Teachers had not reached agreement on 79 items, one of which was deleted by the experts, as explained above. Teachers had scored three items twice, but these are compared just once. Of the 292 items rated by teachers, 288 were used in this comparison. Note that experts scored an additional 12 items, which increased the total number of items to 300.

The agreement between teachers and experts, adjusted for chance ($\kappa = .432$), indicates only moderate to weak agreement on the SOLO taxonomy features of each item compared.

Table 28
Agreement between Teachers and Experts on the SOLO Taxonomy

Experts' Rating (n)	Teachers' Rating (n)				Total
	U	M	R	EA	
U	76	4	1	0	81
M	17	17	5	0	39
R	27	14	23	1	65
EA	3	2	7	13	25
Total	123	37	36	14	210

Note. U = Unistructural, M = Multistructural, R = Relational, EA = Extended Abstract.

Agreement between Teachers and Experts on the Comprehension Processes of Assessment Items

Teacher and expert ratings on comprehension processes were compared for 182 of the 300 items (Table 29). Teachers had not reached agreement on 107 items, one of which was deleted by the experts, and teachers had scored three items twice.

The agreement between teachers and experts, adjusted for chance ($\kappa = .557$), indicates only moderate agreement on the comprehension processes of each item compared.

Table 29
Agreement between Teachers and Experts on the Comprehension Processes of Items

Experts' Rating	Teachers' Rating				Total
	Info	Infer	Interp	Eval	
Info	93	1	1	0	95
Infer	25	25	8	0	58
Interp	2	4	16	0	22
Eval	0	1	5	1	7
Total	120	31	30	1	182

Note. Info = Information, Infer = Inference, Interp = Interpret, Eval = Evaluate.

Agreement between Teachers and Experts on Curriculum Area Processes of Assessment Items

Teacher and expert ratings were compared for 245 of the 300 items (Table 30). Teachers had not reached agreement on 44 items, one of which was deleted by the experts.

The agreement between teachers and experts, adjusted for chance ($\kappa = .717$), indicates an acceptable agreement on the curriculum area processes of each item compared.

Table 30

Agreement between Teachers and Experts on Curriculum Area Processes of Items

Experts' Rating	Teachers' Rating			Total
	EL	TC	PI	
EL	53	11	12	76
TC	1	40	22	63
PI	0	2	104	106
Total	54	53	138	245

Note. EL = Exploring Language, TC = Thinking Critically, PI = Processing Information.

Summary of Findings

This study proposed four major research questions, which have been answered throughout the findings section. The following is a summary overview of findings linked to the research questions. Significant issues and recommendations for future item signature studies conclude this report.

Research Questions 1 and 2: Text and Item Characteristics

Findings on the characteristics of the 44 reading texts were as follows:

- Nearly half the texts were rated as continuous and just over two-fifths were rated as non-continuous.
- All texts were rated as print-considerate, and the majority had considerate illustrations.
- Texts were largely focused on the Essential Learning Area of Language. Other areas covered were Science, Technology, Social Sciences, The Arts, and Health.
- Nearly half the texts had the purpose (Genre) of entertaining the reader. Other purposes included reporting, instructing, arguing, and explaining.
- Texts were equally divided between the Purpose of providing a literary experience and that of enabling the reader to acquire and use information.
- Most texts were assigned to either Level 2 (39%) or Level 3 (34%) of the curriculum, with only two texts assigned to Level 4. Ten texts were not assigned any Curriculum Level, as there was no majority agreement.

- Only 10 (23%) of the 44 texts were assigned both Curriculum Level and Difficulty within Curriculum Level, as there was insufficient agreement.

Characteristics of the 292 assessment items were predominated by simple, low-level processes.

- In terms of the SOLO taxonomy, items largely focused on surface processes (i.e., unistructural, 43% and multistructural, 13%).
- Similarly with Bloom's taxonomy, items focused largely on knowledge processes (46%), with 20% calling on comprehension processes. Only four items were rated as using analysis and just one as using evaluation processes.
- Focusing on and retrieving information were the main PIRLS Comprehension Process required (42%), with smaller numbers of items using inference (11%), interpretation (10%), and evaluation (1 item).
- The Curriculum Area Process required by about half of all items was processing information, and the processes of thinking critically and exploring language were covered by the remainder in equal proportions.
- Items covered some Curriculum Area Objectives more extensively than others. Objectives under the headings Comprehend and Skills were covered most extensively, while objectives under the heading Conventions were covered only occasionally, and those under Communicate were not covered at all. No items were classified under Attitude.
- The Curriculum Area Objective covered by the highest proportion (46%) of items was the processing information, surface cognition objective (3h) *find, select, and retrieve information*, under the Skills heading. Also covered extensively was the Comprehend objective (1j) *use understandings and information gained from texts* (39%). Objectives (1i) *make inferences from texts* (21%) and (1n) *use and understand vocabulary* (17%), both under the heading Comprehend, were also covered widely.

*Research Question 3: Level of Agreement**Reliability*

Reliability – or the extent to which the ratings made by the raters agreed with each other – was ascertained by calculating the mean inter-rater correlation for each text and item category. Moderate agreement is indicated when the correlation falls between $r = .3$ and $r = .6$. At over $r = .6$ agreement is strong, and at under $r = .3$ agreement is minimal. This information is pertinent in determining trends when the two-thirds agreement criterion could not be reached.

Overall, the level of agreement reached by raters in judging which variables applied to the 44 reading texts and the 292 assessment items was acceptable (see Tables 31 and 32). Agreement ranged from $r = .43$ to $r = .75$.

Table 31
Inter-rater Agreement for Texts

Text Category	Mean r
Text Purpose	.75
Text Form	.67
Curriculum Level	.61
Genre	.49
Illustration Considerateness	.44
Essential Learning Area	.43
Print Considerateness ^a	.07 ^a

^a Note that, for all 44 texts, two-thirds agreement was reached that the texts were print considerate, and two raters rated all 44 texts as considerate. Thus, there was very little variance in the data, which depressed the inter-rater correlation.

Table 32
Inter-rater Agreement for Items

Text Category	Mean r
Curriculum Area Processes	.63
Processes of Comprehension	.44
SOLO	.43
Bloom's	.43

Inter-rater agreement for texts and items ranged from moderate to good ($r = .43$ to $r = .75$ for texts and $r = .43$ to $r = .63$ for items). The level of agreement was somewhat better for texts than for items, indicating that texts were easier to assign to categories than items.

Text characteristics that were reliably assigned were Text Form, Curriculum Level, Print Considerateness, and Text Purpose. It should be noted, however, that raters found it difficult to assign levels of difficulty within the curriculum level. For the assessment items, just one of the four areas, Curriculum Area Processes, being a simple three-way choice, was consistently assigned ($r = .63$).

There were clearly some areas of difficulty in assigning some categories. These were: Curriculum Difficulty, where there was agreement on just 9 of the 44 texts; SOLO and Bloom's taxonomies, with lack of agreement on 78 and 93 of the 292 items respectively; and Processes of Comprehension, with lack of agreement on 106 items.

Research Question 4: Comparison of SOLO and Bloom's Cognitive Processing Taxonomies

There was no difference in the levels of inter-rater correlation for SOLO ($r = .43$) and Bloom's ($r = .43$) cognitive processing taxonomies. For both, the level of agreement was moderate. However, it is important to note that the SOLO taxonomy was unfamiliar to many of the raters. This may have affected ease of use, impacting on the level of agreement. Greater rater familiarity with this taxonomy may result in a higher level of agreement.

Consistency of Rating

Where the inter-rater coefficient in assigning scores did not reach $r = .30$ agreement with other raters, these raters' ratings were treated as aberrant and dropped from the analysis.

Raters generally showed moderate to good consistency when assigning values to both text and item categories. In only one instance, when judging whether text illustrations were considerate, did raters show marginal consistency. Feedback indicated that raters were not always clear as to what constituted an illustration. This may have affected consistency.

Issues and Recommendations

Issues

There are two key issues stemming from the study:

1. a need for greater inter-rater reliability, or a higher level of agreement; and
2. the difficulty raters experienced assigning characteristics to reading texts and assessment items.

Inter-rater reliability. The overall level of agreement was just marginal to acceptable, although better for texts than for items. Apart from curriculum level and difficulty, the rating choices for items were generally more complex than those for texts. In addition, not all rating categories were familiar to teachers; for example, the SOLO taxonomy. The results suggested that the training given to the participating teachers was adequate for rating most text categories, particularly where the choice of characteristics was relatively simple (that is, between dichotomous variables), but the training was not always sufficient for rating items.

Difficulty assigning characteristics. Teachers undertaking the rating found two areas particularly difficult to assign. Despite strong inter-rater agreement, teachers considered curriculum levels difficult to assign to texts and would have preferred more fully developed definitions to guide them. The SOLO taxonomy was considered difficult to apply to items, especially as a number of teachers were unfamiliar with it. The variance in the curriculum level ratings confirms their impression that curriculum difficulty was hard to assign to texts. Nevertheless, there were sufficient points of agreement on text curriculum level to form the basis of later work.

Tiredness was also a factor in rater ability to assign characteristics. Teachers commented that working in the afternoon affected their ability to rate. Some teachers also found the task of applying more than 30 Curriculum Area Objectives daunting, and said they had responded by assigning fewer curriculum objectives to each item towards the end of the

work than in the beginning. This means that some items were, according to the teachers, rated less thoroughly than others.

Recommendations

- Future workshops need to focus on training, to ensure raters have a greater degree of understanding of the tools they are using.
 - Training could be run prior to rating work being undertaken, either over a whole day or in two or three blocks, with time to practise on a wide range of examples and to repeatedly clarify definitions to ensure shared understanding.
 - Group discussion should be used to promote shared understanding of definitions.
 - To combat tiredness, work should be undertaken in the morning, with time for group discussion in the afternoon.
- Rater reliability needs to be monitored throughout the rating work.
- Raters need to be selected for any future workshops on past reliability and consistency in rating. Selecting those who have had previous training and thus understand what is required could reduce the training required for future workshops.
- Lack of majority agreement among teachers may need to be resolved by experts from the asTTle team as was reported in Post Script: Resolving Item Signatures, and Appendix 5, for tables showing resolved text and item characteristics.

Despite the training and rating difficulties, the item signature procedure is an essential procedure for establishing the characteristics of the Project asTTle assessments. The project team are able, with this information, to plan future task and item development to ensure coverage of the full spectrum of curriculum and cognitive processes. The information also informs the reporting of student achievement to teachers, so that quality analysis of student strengths, gaps, and capabilities can be made available to teachers. With this information, it is expected that teachers will be better able to plan next steps instruction (see Hattie & Purdie,

1998, for explanation of how the SOLO taxonomy can be used to inform instruction).

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Appendix 1: Sources Used in Development of Definitions

The following is a list of the sources used in the development of the definitions of the literacy categories.

- Text Form – source: PISA: An international study on reading literacy of 15-year-olds by OECD (Kirsch, Mendelovits, & McQueen, 2000).
- Curriculum Level – source: participating teachers, based on their classroom practice.
- Curriculum Difficulty – source: United States NAEP (NCES, 2001) definitions of the terms *basic*, *proficient*, and *advanced*, adapted to the context of reading in New Zealand.
- Text Purpose – source: PIRLS (Progress in International Reading Literacy Study: Campbell, Kelly, Mullis, Martin, & Sainsbury, 2001) of nine-year-olds, an international study run by IEA.
- Print and Illustration Considerateness – source: academic research conducted at the postgraduate level, in which a member of the asTTle team participated.
- Genre – source: Glasswell, Parr, and Aikman’s (2001) technical report for Project asTTle, *Development of the asTTle Writing Assessment Scoring Rubrics*.
- Essential Learning Area – source: *New Zealand Curriculum Framework* (Ministry of Education, 1993).
- SOLO Taxonomy – source: *SOLO Cognitive Processing Taxonomy* (Biggs & Collis, 1982).
- Bloom’s Taxonomy – source: *Taxonomy of Educational Objectives* (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956).
- Processes of Comprehension – source: the international PIRLS Reading Study of nine-year-olds, run by IEA (Campbell, Kelly, Mullis, Martin, & Sainsbury, 2001).
- Curriculum Area Objectives – source: Limbrick, Keenan, and Girven’s (2000) technical report for Project asTTle, *Mapping the English Curriculum*.
- Curriculum Area Processes – source: the *New Zealand Curriculum Framework* (Ministry of Education, 1993), *English in the New Zealand Curriculum* (Ministry of Education, 1994), and *Exploring Language* (Ministry of Education, 1996).

Appendix 2: Definitions of Categories and Variables

Definitions of Categories and Variables Used to Classify Reading Texts

Appendix Table 1

Definition of Reading Text Form

Code	Form – The shaping of the text in order to communicate.	
C	Continuous	Continuous texts are typically composed of sentences that are in turn, organised into paragraphs. These may fit into even larger structures such as sections, chapters, and books.
NC	Non-continuous	Non-continuous texts are organised differently than continuous texts and so require a different kind of reading approach. Non-continuous text formats include: lists, forms, advertisements, diagrams, charts and graphs, certificates, vouchers, information sheets, and maps.

Appendix Table 2

Definition of Reading Text Curriculum Level

Code	Curriculum Level – Levels of achievement in the New Zealand English Curriculum.	
Under L2	Less than level 2	Text that is less than level 2 of the curriculum.
L2	Level 2	Text that is level 2.
L3	Level 3	Text that is level 3.
L4	Level 4	Text that is level 4.
Over L4	Greater than level 4	Text that is greater than level 4 of the curriculum.

NB The category Difficulty within Curriculum Level (following) was rated together with this category – e.g., if text was coded as Level 2, then participants were asked to determine whether it was Level 2 Basic, Level 2 Proficient, or Level 2 Advanced.

Appendix Table 3

Definition of Reading Text Difficulty within Curriculum Level

Code	Difficulty within Curriculum Level (rated in conjunction with curriculum level) – The level of difficulty of text within the assigned curriculum level.	
Ba	Basic	Text that is simple enough for students whose reading skills and knowledge require significant scaffolding or support at this curriculum level.
Pr	Proficient	Text that is appropriate for students whose reading skills and knowledge are competent enough to use the text in instruction at this curriculum level.
Ad	Advanced	Text that is appropriate for students whose reading skills and knowledge is independent at this curriculum level.

Appendix Table 4

Definition of Reading Text Purpose

Code	Purpose – The reasons why people read. Assessment of reading literacy focuses on two purposes that account for most of the reading done by young students both in and out of school.	
Lit	Literary experience	Text that offers readers in Years 5 to 7 a literary experience. In literary reading, the reader engages with the text to become involved in imagined events, settings, actions, consequences, characters, atmosphere, feelings, and ideas, and to enjoy the language itself. For young readers, literature offers the opportunity to explore situations and feelings they have not yet encountered, and to experience imaginatively an autonomy not yet available to them. The main form of literary text is narrative fiction.
Inf	Acquire and use information	Text that offers readers in Years 5 to 7 the opportunity to understand how the real world is. The reader engages with aspects of the real universe. Through information texts the reader can understand how the world is and has been, and why things work as they do. Readers can go beyond the acquisition of information and use it in reasoning and in action. Information texts need not be read from beginning to end; readers may select the parts they need. Examples of information texts include those that recount historical facts, autobiographies and biographies that detail the events of real lives, recipes, instructions, encyclopaedias, dictionary entries, text books, reference materials, and newspaper and magazine articles.

Appendix Table 5

Definition of Reading Text Print Considerateness

Code	Print Considerateness – The level of effectiveness of the text.	
Cons Print	Considerateness of Print	<p>Considerate text that assists readers in Years 5 to 7 to comprehend the content of the text.</p> <p>Considerate text is designed to maximize the possibility for a reader to gain information and establish relationships among concepts. It is characterized by a structure that conveys its purpose, logical relationships among connected ideas, unity of purpose, and audience appropriateness (i.e., the text fits the knowledge base of the target reader.)</p> <p>Considerate texts state explicitly the main ideas at the beginning of discussion and may be highlighted visually by italics and underlining. Concrete, direct, and close references also characterise considerate texts. Clear relationships among events or ideas, shunning of irrelevant or tangential ideas or events, and explicit signalling of such relationships (e.g., through use of titles, headings, and sub-headings) are seen in considerate texts.</p>
Non-cons Print	Non-considerateness of Print	<p>Non-considerate text that is poorly structured, organised, confusing or lacks in organisational signalling.</p> <p>Non-considerate text is poorly structured, organised, confusing, or lacking in organisational signalling such that it requires readers in Years 5 to 7 to make significant effort or have significant prior knowledge to comprehend the content of the text.</p>

Appendix Table 6

Definition of Reading Text Illustration Considerateness

Code	Illustration Considerateness – The level of effectiveness of illustrations in the text.	
Cons Illus	Considerateness of Illustrations in Text	<p>Illustrations that assist comprehension of a text by target readers are usually highly relevant to the content of the text. They concretely and/or sequentially represent the content or organisation of an article. Illustrations are considerate when their presence facilitates comprehension by reducing the amount of text needed to communicate understanding. Considerate illustrations are sufficient to make comprehensible the content. Purely decorative, tangential, or highly abstract illustrations can be detrimental to comprehension, perhaps even more so than the absence of illustrations. Illustrations that are incomplete may be harmful to comprehension.</p>
Non-Cons Illus	Non-considerateness of Illustrations	<p>Illustrations that are purely decorative, tangential, highly abstract, poorly sequenced, or absent when necessary such that they force readers in Years 5 to 7 to make significant effort or have significant prior knowledge to comprehend the content of the text.</p>
N/A Cons Illus	Not applicable to considerateness of Illustrations	No illustrations, so illustration considerateness is not applicable.

Appendix Table 7

Definition of Reading Text Genre

Code	Genre – The term genre is used to describe the range of processes (such as explaining, instructing, recounting, describing, arguing, and narrating) used to produce texts that reflect the purpose and the intended audience. The purpose of the text, not its form, determines the genre, for example a letter can explain or argue.	
Entertain	To inform or entertain	To inform or entertain a reader or listener by constructing or reconstructing a view of the world that the reader can enter. Text types include narratives, recounts, and poetry. Narratives centre on a problem that is usually resolved in the course of the telling. Narrative types include; folk-tales, myths and legends, and short stories (historical, romance, fantasy, crime, and adventure). Recounts centre on the sequenced retelling of experience (real or imagined). Recount types include; personal recounts or the reconstruction of a personal experience including reflections on the writer's feelings, factual recounts (the recounting of events), and imaginative recounts – the recounting of events from an imagined perspective.
Report	To classify, organise, describe or report information	To document, organise and store factual information on a given topic. Usually to classify and describe whole classes of things (reports) or specific things (descriptions) living and non-living (scooters, Pikachu, My Teddy, Blue Whales) This type of genre deals specifically with Information reports and Descriptions.
Instruct	To instruct or lay out a procedure	To give instructions or lay out a procedure. Usually to describe how something may be accomplished through a sequence of actions or steps (To tell someone how something is done). Types include: recipes, appliance manuals, assembly instructions, games' rules etc).
Argue	To argue or persuade	To argue a position or persuade a reader to the writer's point of view. Arguments are expository texts centring on an assumption that the writer must convince the reader through the presentation of relevant points with supporting evidence. There are many types of persuasive texts with variations in focus e.g. arguments involve analytic exposition, hortatory exposition. Advertisements are persuasive texts with the main focus on argument.
Explain	To explain (excluding commonsense/ everyday explanations)	To give an account of how something is formed or works and associated reasons. To explain the processes involved in, and reasons for, mechanical, natural, technological, or sociocultural phenomena. There are two main types of explanation with variations in focus. These are: How something works, Why is it so?
Inform ^a	To allow location of or navigation to information	Navigational tools, such as a table or contents or index, that permit or assist location of or navigation to information in a text.
Other	Other Genre	Text does not meet the criteria applicable to story, report, instruct, argue or explain. If raters chose this code, they were instructed to state which purpose they considered the text does meet.

^a This variable was added post facto to better reflect the nature of the texts.

Appendix Table 8

Definition of Reading Text Essential Learning Area

Code	Essential Learning Area – The New Zealand Curriculum specifies seven essential learning areas that describe in broad terms the knowledge and understanding all students need to acquire and incorporate while undertaking continuing study in all the learning areas during each of the first ten years of schooling.	
Lang	Language and Languages	This essential area emphasises the importance of language(s) and literacy learning. The focus is on oral, written and visual forms of language, the structures and use of language(s), and how to access and use information.
Math	Mathematics	The ability to calculate, to estimate, and to reason logically. Mathematical skills and concepts include the use of number, measurement, construction, and spatial interpretation.
Sci	Science	The discipline through which people investigate the living, material, physical, and technological components of their environment. Science enables students to develop a clearer understanding of the world around them and beyond: living things, the environment, matter, energy and industrial and technological processes.
Tech	Technology	The creative and purposeful use of human knowledge, skills, and physical resources to solve practical problems. It involves developing objects, systems, or environments.
SocSci	Social Sciences	Students will develop the knowledge and sense of perspective needed to understand and appraise any changing society and economy including: the examination of the ways in which people from different cultures, times and places make decisions, and meet their physical, social, emotional, and spiritual needs.
Arts	The Arts	The arts are a powerful form of personal and social expression, linking imagination, thinking and feeling, and aesthetics. They encourage the student to investigate their own values and those of others, and to recognise the aesthetic and spiritual dimensions of their lives. The arts include painting, sculpture, dance, drama, and so on.
Health	Health and Physical Well-being	Health encompasses the physical, social, emotional, intellectual, and spiritual dimensions of a person's growth. Health education incorporates nutrition, drug education, sexuality education, interpersonal skills, family relationships, and community and environmental health. Physical education includes dance, movement, sport, and physical recreation.

Definitions of Categories and Variables Used to Classify Assessment Items

Appendix Table 9

Definition of Assessment Item SOLO Taxonomy

Code	SOLO Taxonomy – Depth of cognitive processing.	
U	Unistructural	One aspect of a task is picked up or understood serially, and there is no relationship of facts or ideas. The item contains one obvious piece of information coming directly from the stem wherein an answer is based on only one relevant aspect of the text. Only a single piece of information is required for the answer.
M	Multistructural	Two or more aspects of a task are picked up or understood serially, but are not interrelated. Multistructural questions require using two or more discrete and separate pieces of information contained in the text. The student is required to use two separate pieces of information to work out the answer.
R	Relational	Several aspects are integrated so that the whole has a coherent structure and meaning. Relational questions use two or more pieces of information each directly related to an integrated understanding of the information in the text.
EA	Extended Abstract	The coherent whole is generalised to a higher level of abstraction. Extended abstract questions require the use of an abstract principle or hypothesis that can be derived from, or suggested by, the information in the text. There is recognition that the given example or question can lead to a more general case. The student has to go beyond the information given in the item to deduce a more general principle.

Appendix Table 10

Definition of Assessment Item Bloom's Taxonomy

Code	Bloom's Taxonomy – A set of broad cognitive categories that describe the intellectual processes required to answer a question.	
Know	Knowledge	The acquisition of information with the emphasis on simple recall or recognition of information including <ul style="list-style-type: none"> the ability to recognize the meanings or definitions of words and terms; the recall or remembering of significant dates, events, persons, places, sources of information, and so on; knowing rules and practices common to literacy, including knowledge of correct form and usage in written communication; and knowing broad classes, sets or divisions, including a wide range of types of literature, and knowing that words can be divided in to classes.
Comp	Comprehension	These questions are concerned with an understanding of the literal messages contained in texts. For example: <ul style="list-style-type: none"> putting original communication into other terms, i.e., into one's own words, or summarising in words a visual text; the identification and comprehension of major ideas and their relationships including the ability to comprehend the significance of particular words in the context of a text.
An	Analysis	Breaking down the text into constituent elements as follows: <ul style="list-style-type: none"> identifying the various structures which make a sentence (sounds, word forms and syntactical patterns) or those which make a text (paragraph, sections); understanding the interrelationships among ideas in texts, the ability to distinguish relevant from irrelevant statements, and the interrelationships among syntactical components. (continues on next page)

Code	Bloom's Taxonomy (continued)	
App	Application	<p>The production of both functional and expressive written answers. That is:</p> <ul style="list-style-type: none"> the production of written compositions that have as their purpose to give information. Examples include reporting on a book, writing science or contents reports and descriptive paragraphs; the production of creative or expressive oral and written compositions e.g. the writing of original poems and stories.
Syn	Synthesis	<p>The putting together of elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc., and arranging and combining them in such a way as to constitute a pattern or structure not clearly there before.</p>
Eval	Evaluation	<p>Evaluation is twofold in that it emphasises the objective evaluation of form of the communication and the subjective evaluation of the content or effect. That is:</p> <ul style="list-style-type: none"> the ability to evaluate language issues, skills and literature on the basis of functional or mechanical appropriateness of the content of the communication. Objective evaluation is not concerned with the personal or expressive elements. The emphasis is on the mechanical manipulation of criteria such as form, syntax and content. making judgements about the expressive views of oral and written compositions. The emphasis is on an expressive or creative reaction to the communication.

Appendix Table 11

Definition of Assessment Item Processes of Comprehension

Code	Processes of Comprehension – There are four comprehension processes that enable students to construct meaning from written texts. The four types are outlined below.	
Info	Focus on and Retrieve Explicitly Stated Information	<p>Retrieving text information requires that the reader understand what is stated explicitly in the text. The reader also needs to understand how that information is related to the information sought. The meaning is evident and stated in the text. Focus on the text typically remains at the sentence or phrase level in this type of text processing. The process may require the reader to focus on and retrieve several pieces of information: but in each case the information is usually contained within a sentence or phrase.</p> <p>Reading tasks that exemplify this type of text processing include:</p> <ul style="list-style-type: none"> identifying information that is relevant to the specific goal of reading; looking for specific ideas; searching for definitions of phrases; identifying the setting of a story (e.g., time, place); finding the topic sentence or main idea (when explicitly stated).
Infer	Make Straight-forward Inferences	<p>Making inferences allows the reader to move beyond the surface of texts and fill in the “gaps” in meaning that often occur in texts.</p> <p>Inferences are straightforward in that they are based mostly on information that is contained in the text. The reader may merely need to connect two or more pieces of information. Although the ideas may be explicitly stated the connection between them is not and must be inferred.</p> <p>The reader typically focuses on more than just sentence or phrase-level meaning. The focus may be on local meaning, residing in part of the text, on more global meaning representing the whole text, or on a connection between the two.</p> <p>Reading tasks that exemplify this type of text processing include:</p> <ul style="list-style-type: none"> inferring that one event caused another event; concluding what is the main point made by a series of arguments; determining the referent of a pronoun; identifying generalisations made in the text; describing the relationship between two characters. <p>(continues over the page)</p>

Code		Processes of Comprehension (continued)
Interp	Interpret and Integrate Ideas and Information	<p>As readers interpret and integrate ideas and information in the text, they often need to draw on their understanding of the world. They make connections that are not only implicit, but may be open to some interpretation based on their own perspective.</p> <p>Readers may need to draw on their background knowledge and experiences more than for straightforward inferences. Meaning that is constructed through interpreting and integrating ideas and information is likely to vary depending among readers depending on the experiences and knowledge they bring to the text.</p> <p>Reading tasks that exemplify this type of text processing include:</p> <ul style="list-style-type: none"> • discerning the overall message or theme of a text; • considering an alternative to actions of characters; • comparing and contrasting text information; • inferring a story's mood or tone; • interpreting a real-world application of text information.
Evalu	Examine and Evaluate Content, Language, and Textual Elements	<p>As readers examine and evaluate the content, language, and elements of the text, the focus shifts from constructing meaning to critically considering the text itself. In terms of content the reader draws on their own interpretations and weighs their understanding of the text against their understanding of the world – rejecting, accepting or remaining neutral to the text's representation.</p> <p>In examining and evaluating elements of text structure and language readers draw upon their knowledge of text structure and language usage and general or genre-specific features of texts. The text is considered a way to convey ideas, feelings and information. Readers may find weaknesses in how the text was written or recognise the successful use of the writer's craft. The extent of past reading and familiarity with the language are essential to this process.</p> <p>Reading tasks that exemplify this type of text processing include:</p> <ul style="list-style-type: none"> • evaluating the likelihood that the events described could really happen; • describing how the author devised a surprise ending; • judging the completeness or clarity of information in the text; • determining an author's perspective on the central topic; • describing how the choice of adjectives affects meaning.

Appendix Table 12
 Definition of Assessment Item Curriculum Area Objectives

Curriculum Area Objectives (including those added post facto)	
Comprehend	<p>The full knowledge and understanding of the meaning of text.</p> <ul style="list-style-type: none"> • (1a) Justify reading choices. • (1b) Consistently read for meaning. • (1c) Identify fiction and non-fiction texts. • (1d) Compare similarities and differences both within and between texts. • (1e) Make cohesive links between aspects of text. • (1f) Explore author's purpose and question author's intentions. • (1g) Identify main ideas in texts. • (1h) Provide detail to support main ideas. • (1i) Make inferences from texts. • (1j) Use understandings and information gained from texts. • (1k) Question to locate and retrieve information. • (1l) Question to clarify meaning in texts. • (1m) Read critically a range of texts for bias, stereotyping, and propaganda. • (1n)^a Use and understand vocabulary. • (1o)^a Use and understand poetic and figurative language use (rhyme, metaphor). • (1p)^a Make use of prior knowledge (script implicit). • (1q)^a Understand and organise material in appropriate sequences. <p>(continues over the page)</p>
Curriculum Area Objectives (continued)	

Communicate	To share or exchange including let others know about, make others aware of, information, feelings, or ideas. <ul style="list-style-type: none"> • (2a) Share response to text with others. • (2b) Discuss texts and identify aspects; e.g., plot, characters, setting, and theme. • (2c) Empathise with characters and situations in texts.
Skills	The component processes of reading and writing. <ul style="list-style-type: none"> • (3a) Read independently for sustained periods. • (3b) Make confident use of semantic (e.g., context or setting), syntactic, visual (e.g., illustrations, diagrams), and grapho-phonetic cues. • (3c) Use strategies to solve unknown words and gain meaning: anticipate/ predict, re-read, self-correct, question, confirm. • (3d) Make links between verbal and visual information. • (3e) Predict possible outcomes. • (3f) Identify some parts of word classes. • (3g) Identify features and purposes of text types. • (3h) Find, select, and retrieve information. • (3i) Skim/scan for information. • (3j) Note take in a variety of ways; e.g., using graphic organisers. • (3k) Use effectively a dictionary, thesaurus, or atlas.
Convention	A generally accepted usage, rule, or practice in the making or reading of texts. <ul style="list-style-type: none"> • (4a) Use appropriately a variety of punctuation conventions: commas, full stops, capital letters, exclamation marks, question marks, quotation marks. • (4b) Use grammatically correct structures; e.g., sentences, tense. • (4c) Spell correctly. • (4d)^a Use and understand text publishing conventions.
Attitude	The general way of thinking and feeling about reading literacy. <ul style="list-style-type: none"> • (5a) Demonstrate a willingness to choose to read a pleasurable activity. • (5b) Use personal background knowledge and experience to bring meaning to text. • (5c) Take a risk when choosing texts to read. • (5d) Use a range of technologies for personal reading; e.g., library and online texts. • (5e) Read and discuss a range of texts from different times and places.

^a These five sub-variables were added post facto to better reflect the purposes of the assessment items. Thus, these sub-variables were used only by the experts from the asTTle team and were not used by the teachers to rate the items.

Appendix Table 13
Definition of Assessment Item Curriculum Area Processes

Code	Curriculum Area Processes	
EL	Exploring Language	To understand how the English language is constructed using a wide view of grammar, text (or discourse) structure, the conventions of written language, phonology (sounds, stress, and intonation), and word meanings and the ways these elements interrelate and interact in communicating meaning.
TC	Thinking Critically	The ability to think critically about language and meaning and develop the skills of literary criticism. This includes: <ul style="list-style-type: none"> • discriminating and understanding the text through close reading and through exploring and analysing the effects of words, conventions, structures, techniques, and images; • linking or comparing the text's view of the world with one's own; and • evaluating the effects and qualities of different texts.
PI	Processing Information	The processes by which information is identified, understood, stored, organised, retrieved, combined, and communicated in order to resolve information problems.

Item Signature Study, Calibration 1, Technical Report 12

Appendix 3: Characteristics of Individual Reading Texts and Assessment Items (Draft)

Appendix Table 14

Characteristics of asTTle Reading Texts – Draft

Text No	Text name	Form	Curriculum Level	Curriculum Difficulty	Purpose	Print Considerateness	Illustration Considerateness	Genre	Essential Learning Area
1	Twinkle Twinkle Star	C	L4	*	Inf	Cons Print	Cons	Rep	Sci
2	Fog	C	L3	*	Lit	Cons Print	Non-Cons	Ent	Lang
3	Potato Printing	NC	L2	Ba	Inf	Cons Print	Cons	Instr	Arts
4	Grandad's Cupboard	C	L3	*	Lit	Cons Print	N/A	Ent	Lang
5	Rebound	C	*	*	Lit	Cons Print	Cons	Ent	Lang
6	Black Noddy	*	*	*	Lit	Cons Print	*	Ent	Lang
7	Cup Cakes	NC	L2	*	Inf	Cons Print	Cons	Instr	Tech
8	Dear Ms Donaldson	C	L2	Ba	Inf	Cons Print	N/A	*	Lang
9	Making Chocolate	NC	*	*	Inf	Cons Print	Cons	Expl	Tech
10	Scuba Diving	NC	L3	*	Inf	Cons Print	Cons	Instr	Health
11	Tara's Tennis Lesson	C	L3	Pr	Lit	Cons Print	N/A	Ent	Lang
12	The Tuatara	NC	*	*	Inf	Cons Print	Cons	Rep	Sci
13	Simply Delicious	NC	L2	Ba	Lit	Cons Print	Cons	Ent	Lang
14	Party Invitation	*	L2	Ba	Inf	Cons Print	Cons	*	Lang
15	Bat Poem	C	L3	*	Lit	Cons Print	Cons	Ent	Lang
16	Whales	*	*	*	Inf	Cons Print	Cons	Rep	Sci
17	Contents Page	NC	L2	*	Inf	Cons Print	Non-Cons	*	Sci
18	Jonah's Surprise	*	L2	Pr	Lit	Cons Print	N/A	Ent	Lang
19	Operation Skatebowl	C	*	*	Inf	Cons Print	Cons	*	*
20	Keas	C	L3	*	Lit	Cons Print	Cons	Ent	Lang
21	Kia Ora Sally	C	L2	Pr	Lit	Cons Print	Cons	Ent	Lang
22	Five Sisters	NC	L2	*	Lit	Cons Print	Cons	Ent	Lang
23	Rimu Valley Fair	NC	L2	*	Inf	Cons Print	Cons	*	Lang
24	Fishermen's Boats	*	L3	Pr	Lit	Cons Print	Cons	Ent	Lang
25	Middle of the Night	C	L3	*	Lit	Cons Print	N/A	Ent	Lang
27	Kurapa Library	NC	*	*	Inf	Cons Print	Cons	*	Lang
28	Lost Kitten	NC	L2	*	Inf	Cons Print	Cons	Rep	Lang
29	Postcard to Nana	C	*	*	Lit	Cons Print	Cons	Ent	Lang
31	Anna's Bargain	C	L3	Pr	Lit	Cons Print	N/A	Ent	Lang
32	It's not worth the Risk	C	L3	*	Inf	Cons Print	Cons	*	*
34	NZ Rugby Union	NC	L2	*	Inf	Cons Print	*	*	Lang
36	Back cover of Rebound	C	L3	*	Lit	Cons Print	*	Ent	Lang
37	Nature Maps	NC	L2	*	Inf	Cons Print	Cons	Instr	*
38	E-mail from Alaska	C	L2	*	Lit	Cons Print	Cons	Ent	Lang

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Characteristics of asTTle Reading Texts (continued)

39	Letter to Editor	C	L4	*	*	Cons Print	N/A	Arg	Lang
40	Growing a Tree	NC	*	*	Inf	Cons Print	Cons	Instr	Sci
41	Turangi	NC	L2	*	Inf	Cons Print	Cons	*	SocSci
42	Paper Superplanes	NC	L2	*	Inf	Cons Print	*	Instr	*
43	Terns	NC	L2	*	Lit	Cons Print	Cons	Ent	Lang
44	Gull Rescue	C	L3	*	Lit	Cons Print	N/A	Ent	Lang
45	Soccer All Whites	C	*	*	Inf	Cons Print	N/A	*	*
46	Just in time	C	L3	*	Lit	Cons Print	N/A	Ent	Lang
48	Takahe Facts	NC	L3	*	Inf	Cons Print	Cons	Rep	Sci
49	Wish	C	L3	Pr	Lit	Cons Print	N/A	Ent	Lang

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better. See Appendix 2 for definitions of abbreviations used in the table.

* = no agreement

Item Signature Study, Calibration 1, Technical Report 12

Appendix Table 15

Characteristics of asTTle Assessment Items – Draft

Text No	Item Name & No	SOLO Taxonomy	Bloom's Taxonomy	Processes of Comprehension	Curriculum Area Processes	Curriculum Area Objectives		
						Comprehend	Skills	Conventions
1	Twinkle Twinkle Star Item 31	R	Comp	Infer	*	1b, 1g	3i	
1	Twinkle Twinkle Star Item 32	U	Know	Infer	PI	1b	3h	
1	Twinkle Twinkle Star Item 33	U	Know	Info	PI	1j	3h	
1	Twinkle Twinkle Star Item 34	M	Know	Info	PI	1j	3h	
1	Twinkle Twinkle Star Item 35	R	Know	Info	PI	1j	3h	
1	Twinkle Twinkle Star Item 36	U	Know	Info	PI	1b, 1j	3h	
1	Twinkle Twinkle Star Item 37	M	Know	Info	PI	1b, 1j	3h	
2	Fog Item 39	*	Comp	Infer	TC	1i, 1j		
2	Fog Item 40	U	Know	Info	PI		3h	
2	Fog Item 41	*	*	*	*	1j	3i	
2	Fog Item 42	R	*	Interp	TC	1i, 1j		
2	Fog Item 43.1	M	Know	Info	*	1i	3h	
2	Fog Item 43.2	EA	Evalu	*	TC	*	*	*
2	Fog Item 44	R	*	Interp	TC	1e, 1j		
3	Potato Printing Item 1	R	Know	Info	*	1e	3d	
3	Potato Printing Item 2	R	Know	*	PI	1i, 1p	3d	
3	Potato Printing Item 3	*	Know	Info	PI	1p, 1q	3d, 3h	
4	Grandad's Cupboard Item 41	*	Comp	*	*	*	*	*
4	Grandad's Cupboard Item 42	U	Know	Info	PI		3h	
4	Grandad's Cupboard Item 43	R	*	*	PI		3h	
4	Grandad's Cupboard Item 44	R	Comp	Interp	TC	1i, 1j		
4	Grandad's Cupboard Item 45	*	Know	Infer	PI	*	*	*
4	Grandad's Cupboard Item 46	*	*	Interp	EL			4b
5	Rebound Item 25	U	Know	Info	PI		3h	
5	Rebound Item 26	U	Comp	Infer	EL	1n, 1o		
5	Rebound Item 27	*	Comp	*	PI	1j	3h	
5	Rebound Item 28	*	Comp	*	TC	1i, 1j		
5	Rebound Item 29	*	Know	Infer	PI	1j		
5	Rebound Item 30	EA	*	*	TC	*	*	*
6	Black Noddy Item 38	U	Know	Info	PI		3h, 3i	
6	Black Noddy Item 39	*	Comp	Infer	TC	1i	3i	
6	Black Noddy Item 40	U	*	*	*		3i	
6	Black Noddy Item 41	*	*	Infer	EL	1j	3b	
6	Black Noddy Item 42	R	*	*	TC	1i, 1j	3i	
6	Black Noddy Item 43	*	Know	Info	PI	1j	3h	

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Characteristics of asTTle Assessment Items (continued)

6	Black Noddy Item 44	R	*	Interp	TC	1i	3e	
6	Black Noddy Item 45	*	Comp	Interp	EL	1j, 1n	3g	
7	Cup Cakes Item 10	M	Know	Info	*	1j, 1n, 1p	3d, 3h	4a
7	Cup Cakes Item 11	M	Know	Info	PI	1j	3h	
7	Cup Cakes Item 12	R	*	Interp	TC		3d	
7	Cup Cakes Item 13	U	*	*	*	1i, 1j, 1p		
7	Cup Cakes Item 14	R	*	Info	PI		3d, 3i	
7	Cup Cakes Item 15	M	Know	Info	PI	1j	3i	
7	Cup Cakes Item 16	*	Know	Info	PI	1j		
7	Cup Cakes Item 17	R	*	*	PI	1j	3d, 3h	
8	Dear Ms Donaldson Item 1	U	Know	Info	PI		3h, 3i	
8	Dear Ms Donaldson Item 2	U	Know	Info	PI	1j	3h, 3i	
8	Dear Ms Donaldson Item 3	U	Know	Info	PI	1j	3h	
8	Dear Ms Donaldson Item 4	U	Know	*	PI	1j	3h	
8	Dear Ms Donaldson Item 5	R	Comp	Infer	TC	1i		
9	Making Chocolate Item 23	U	Know	Info	PI	1j	3h	
9	Making Chocolate Item 24	M	*	Info	PI	1j	3h	
9	Making Chocolate Item 25	U	Know	Info	PI	1j	3h	
9	Making Chocolate Item 26	M	*	*	*	1j		
9	Making Chocolate Item 27	R	Know	Info	PI	1j	3h	
9	Making Chocolate Item 28	M	Know	Info	*	1j	3h	
9	Making Chocolate Item 29	*	*	*	*	1j	3h	
10	Scuba Diving Item 11	M	Know	Info	*	1n	3b, 3d	
10	Scuba Diving Item 12	R	Know	*	PI	1i	3b, 3d, 3h	
10	Scuba Diving Item 13	*	*	*	PI	1j	3h	
10	Scuba Diving Item 14	*	Know	Info	PI		3d, 3h	
10	Scuba Diving Item 15	U	Know	Info	PI		3d	
10	Scuba Diving Item 16	U	Know	*	PI	1n	3b	4d
11	Tara's Tennis Lesson Item 23	U	Comp	*	EL	1b, 1j, 1n	3b	
11	Tara's Tennis Lesson Item 24	U	Comp	*	EL	1n	3b	4b
11	Tara's Tennis Lesson Item 25	U	Comp	*	EL	1j, 1n	3b	4b
11	Tara's Tennis Lesson Item 26	U	Comp	*	EL	1j, 1n, 1p		4a, 4b
11	Tara's Tennis Lesson Item 27	U	Comp	Infer	EL	1j, 1n, 1o		
11	Tara's Tennis Lesson Item 28	U	Comp	Infer	EL	1j, 1n		4a, 4b
12	The Tuatara Item 27	U	Comp	Infer	TC	1i, 1j		
12	The Tuatara Item 28	U	Know	Info	PI	1j	3h	
12	The Tuatara Item 29	M	Know	Info	PI	1j	3h	
12	The Tuatara Item 30	*	*	Infer	TC	1j		
12	The Tuatara Item 31	U	Know	Info	PI	1j	3h	

Item Signature Study, Calibration 1, Technical Report 12

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Characteristics of asTTle Assessment Items (continued)

12	The Tuatara Item 32	U	Comp	Info	PI	1j	3h	
13	Simply Delicious Item 1	U	Know	*	PI	1i	3h	
13	Simply Delicious Item 2	U	Know	Info	*		3d	
13	Simply Delicious Item 3	U	Know	Info	PI		3h	
14	Party Invitation Item 4	U	Know	Info	PI		3h, 3i	
14	Party Invitation Item 5	U	Know	Info	PI		3h	
14	Party Invitation Item 6	U	Know	Info	PI		3h	
14	Party Invitation Item 7	U	Know	Info	PI		3h	
14	Party Invitation Item 8	*	Know	Info	PI		3h	
14	Party Invitation Item 9	U	Know	Info	PI		3h	
14	Party Invitation Item 10	U	Know	Info	PI		3h	
15	Bat Poem Item 35	*	*	Infer	PI	1i		
15	Bat Poem Item 36	R	Comp	Infer	TC	1i, 1j		
15	Bat Poem Item 37	*	Know	Info	EL	1n	3f	
15	Bat Poem Item 38	M	Know	Interp	*	1j		
15	Bat Poem Item 39	R	Comp	Interp	TC	1g, 1j		
15	Bat Poem Item 40	U	Know	Info	EL		3h, 3i	
16	Whales Item 18	M	Comp	Info	PI	1j	3h	
16	Whales Item 19	M	Know	Info	TC	1n	3h	
16	Whales Item 20	U	Know	Info	PI	1j, 1n, 1p	3h	
16	Whales Item 21	U	Know	Info	PI		3h, 3i	
16	Whales Item 22	U	Know	Info	PI		3h	
16	Whales Item 23	M	*	Info	PI	1j	3h	
16	Whales Item 24	M	Know	Info	PI	1j	3h, 3i	
17	Contents Page Item 3	U	Know	Interp	*	1i		
17	Contents Page Item 4	*	Know	Info	PI		3h	
17	Contents Page Item 5	U	Know	*	PI	1f, 1n	3g	4d
17	Contents Page Item 6	*	Know	Info	PI		3i	
17	Contents Page Item 7	*	*	Interp	TC	1i, 1j, 1n		
18	Jonah's Surprise Item 4	M	*	Infer	EL	1n		
18	Jonah's Surprise Item 5	R	*	Info	PI	1e, 1g		
18	Jonah's Surprise Item 6	U	Know	Info	PI		3h	
18	Jonah's Surprise Item 7	EA	*	Interp	*	1f, 1i		
19	Operation Skatebowl Item 30	*	*	*	*	1j	3h	
19	Operation Skatebowl Item 31	R	*	*	TC	1i, 1j	3e	
19	Operation Skatebowl Item 32	*	*	*	TC	1d, 1f, 1i	3g	
19	Operation Skatebowl Item 33	*	Comp	*	*	1i, 1j		
19	Operation Skatebowl Item 34	M	*	*	EL	1n, 1p		

19	Operation Skatebowl Item 35	R	*	Interp	TC	1d, 1g, 1j			
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Characteristics of asTTle Assessment Items (continued)

19	Operation Skatebowl Item 36	*	Comp	*	*	1j			
19	Operation Skatebowl Item 37	EA	*	*	TC	1i, 1j			
20	Keas Item 20	U	Know	Info	PI		3h		
20	Keas Item 21	U	Know	Info	PI	1j	3h		
20	Keas Item 22	*	*	Infer	*	1j	3h		
20	Keas Item 23	*	*	*	PI		3h		
20	Keas Item 24	*	Comp	Infer	EL	1j, 1n, 1p			
20	Keas Item 25	R	*	*	PI	1j	3h		
20	Keas Item 26	EA	*	Interp	TC	1i, 1j	3e		
21	Kia Ora Sally Item 8	Item used in training but not rated							
21	Kia Ora Sally Item 9	Item used in training but not rated							
21	Kia Ora Sally Item 10	Item used in training but not rated							
21	Kia Ora Sally Item 11	Item used in training but not rated							
21	Kia Ora Sally Item 12	Item used in training but not rated							
21	Kia Ora Sally Item 13	Item used in training but not rated							
22	Five Sisters Item 1	U	Know	Info	PI	1n, 1o	3h, 3i		4d
22	Five Sisters Item 2	U	Know	Info	PI	1i	3h, 3i		
23	Rimu Valley Fair Item 8	R	*	*	TC	1g			
23	Rimu Valley Fair Item 9	U	Know	Info	PI		3h		
23	Rimu Valley Fair Item 10	U	Know	Info	PI		3h, 3i		
23	Rimu Valley Fair Item 11	U	Know	*	EL				4a
23	Rimu Valley Fair Item 12	M	*	Info	PI		3i		
23	Rimu Valley Fair Item 13	EA	*	Interp	TC	1i, 1j, 1o			
24	Fishermen's Boats Item 33	U	*	*	*	1i			
24	Fishermen's Boats Item 34	M	Know	Info	EL	1n, 1q	3f, 3h		
24	Fishermen's Boats Item 35	M	Comp	*	TC	1b, 1i, 1j, 1n, 1p			
24	Fishermen's Boats Item 36	*	Comp	*	TC	1i			
24	Fishermen's Boats Item 37	R	*	Interp	PI	1g, 1i	3h, 3i		
24	Fishermen's Boats Item 38	*	*	*	*	*	*		*
24	Fishermen's Boats Item 39	EA	*	Interp	TC	1f, 1i			
25	Middle of the Night Item 19	U	Comp	*	EL	1j, 1n			
25	Middle of the Night Item 20	U	Comp	*	EL	1j, 1n			
25	Middle of the Night Item 21	U	Comp	*	EL	1j, 1n			
25	Middle of the Night Item 22	U	Comp	*	EL	1n			
25	Middle of the Night Item 23	U	Comp	*	EL	1j, 1n			
25	Middle of the Night Item 24	U	Comp	*	EL	1j, 1n			

Item Signature Study, Calibration 1, Technical Report 12

26	Write one of following Item 14	*	*	*	EL	1f, 1n		4b
26	Write one of following Item 15	U	Know	*	EL			4a

(continued on next page)

Characteristics of asTTle Assessment Items (continued)

26	Write one of following Item 16	U	Know	Info	EL	1n	3f	4c
26	Write one of following Item 17	U	Know	Info	EL		3f	4c
26	Write one of following Item 18	M	Know	Info	EL		3f	4c
27	Kurapa Library Item 12	M	*	*	PI	1j	3h	
27	Kurapa Library Item 13	*	*	Info	PI	1e, 1j	3i	
27	Kurapa Library Item 14	R	Comp	Infer	TC	1f, 1j		
27	Kurapa Library Item 15	*	*	*	TC			
27	Kurapa Library Item 16	*	*	*	TC	1i, 1j, 1n		
27	Kurapa Library Item 17	M	Comp	Info	PI	1j	3d	
28	Lost Kitten Item 1	U	Know	Info	PI		3h	
28	Lost Kitten Item 2	U	Know	Info	PI	1j	3h	
28	Lost Kitten Item 3	*	Comp	*	*	1i, 1j		
28	Lost Kitten Item 4	U	Know	Info	PI		3h	
29	Postcard to Nana Item 5	U	Know	Info	PI	1n	3h	4c
29	Postcard to Nana Item 6	U	Know	Info	PI		3h	
29	Postcard to Nana Item 7	U	Know	Info	PI		3h	
29	Postcard to Nana Item 8	M	Comp	Infer	PI	1i, 1j	3h	
29	Postcard to Nana Item 9	*	Comp	Infer	*		3g	
29	Postcard to Nana Item 10	*	Comp	Info	PI	1j	3h	
29	Postcard to Nana Item 11	U	Know	Info	PI	1n	3i	4c
30	Choose the best word Item 25	U	*	*	EL	*	*	*
30	Choose the best word Item 26	U	*	*	EL			4c
30	Choose the best word Item 27	U	*	*	EL			4b, 4c
30	Choose the best word Item 28	U	*	*	EL			4b, 4c
31	Anna's Bargain Item 29	R	*	Infer	TC	1b, 1i, 1j		
31	Anna's Bargain Item 30	U	Know	Info	PI		3h	
31	Anna's Bargain Item 31	U	Know	Info	PI	1j	3h	
31	Anna's Bargain Item 32	U	Know	Info	PI	1j	3h	
31	Anna's Bargain Item 33	*	Know	Info	PI	1j	3h	
31	Anna's Bargain Item 34	U	Know	Info	PI	1j	3h	
31	Anna's Bargain Item 35	*	Comp	Infer	*	1i, 1j	3h	
31	Anna's Bargain Item 36	*	*	*	*		3h	
31	Anna's Bargain Item 37	*	Comp	*	PI	1j	3h	
32	It's not worth the Risk Item 17	U	Know	Info	PI		3h	
32	It's not worth the Risk Item 18	R	*	*	TC	1i		
32	It's not worth the Risk Item 19	U	*	Infer	EL	1j, 1n		4c

32	It's not worth the Risk Item 20	U	Know	Info	PI	1j		
32	It's not worth the Risk Item 21	EA	*	Interp	TC	1f, 1i, 1j		
32	It's not worth the Risk Item 22	EA	*	Interp	TC	1f, 1g, 1j		

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Characteristics of asTTle Assessment Items (continued)

33	Shade the bubbles Item 18	U	Know	*	EL			4a
33	Shade the bubbles Item 19	M	Know	*	EL			4a
33	Shade the bubbles Item 20	U	Know	*	EL	1f, 1n	3f	4c
33	Shade the bubbles Item 21	U	Know	*	EL	1n, 1p	3f	4c
33	Shade the bubbles Item 22	U	Know	*	EL	1n, 1q	3f	4c
34	NZ Rugby Union Item 1	U	Know	Info	PI	1j	3h	
34	NZ Rugby Union Item 2	U	*	Info	*	1i, 1j		4d
34	NZ Rugby Union Item 3	U	Know	Info	*		3h	
34	NZ Rugby Union Item 4	U	Know	Info	PI		3h	
34	NZ Rugby Union Item 5	U	Know	Info	PI		3h	
34	NZ Rugby Union Item 6	U	Know	Info	PI	1f, 1i	3h	
35	Banana Smoothie Item 7	R	An	Infer	PI	1i		
35	Banana Smoothie Item 8	U	*	*	EL			4a
35	Banana Smoothie Item 9	M	*	*	EL			4a
36	Back cover Rebound Item 16	U	Know	Info	PI		3h	
36	Back cover Rebound Item 17	U	Know	Info	PI		3h	
36	Back cover Rebound Item 18	*	Comp	Infer	TC	1i, 1j, 1n		4d
36	Back cover Rebound Item 19	U	Know	*	EL			4a
36	Back cover Rebound Item 20	*	*	Interp	TC	*	*	*
36	Back cover Rebound Item 21	EA	*	*	TC		3g	
36	Back cover Rebound Item 22	*	*	*	EL			4a
37	Nature Maps Item 10	U	Know	Info	PI	*	*	*
37	Nature Maps Item 11	U	Know	Info	PI		3h	
37	Nature Maps Item 12	U	Know	Info	PI		3d, 3h	
37	Nature Maps Item 13	*	*	Info	PI	1j	3d, 3h	
37	Nature Maps Item 14	M	*	*	PI		3h	
37	Nature Maps Item 15	*	*	*	*	1f, 1i	3g	
38	E-mail from Alaska Item 33	U	Know	Info	PI		3h	
38	E-mail from Alaska Item 34	M	Comp	*	PI		3h	
38	E-mail from Alaska Item 35	*	*	*	PI		3h	
38	E-mail from Alaska Item 36	M	Know	Info	PI		3h	
38	E-mail from Alaska Item 37	*	*	*	TC	1i, 1j		
38	E-mail from Alaska Item 38	R	Comp	*	TC	1f, 1g		
38	E-mail from Alaska Item 39	U	Know	Info	PI		3h	
39	Letter to Editor Item 38	*	*	*	*	1f		

Item Signature Study, Calibration 1, Technical Report 12

39	Letter to Editor Item 39	*	*	*	*		3h
39	Letter to Editor Item 40	*	*	*	EL	1f, 1n	3c
39	Letter to Editor Item 41	*	*	Interp	TC	1i, 1j, 1n, 1p	
39	Letter to Editor Item 42	*	*	Interp	PI	1d, 1g, 1j	

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Characteristics of asTTle Assessment Items (continued)

39	Letter to Editor Item 43	EA	*	Interp	TC	1i, 1j	
39	Letter to Editor Item 44	R	An	Interp	TC	1d, 1i	
39	Letter to Editor Item 45	EA	*	Interp	TC	1i	
40	Growing a Tree Item 7	U	Know	Info	PI		3h
40	Growing a Tree Item 8	U	Know	Info	PI		3d, 3h
40	Growing a Tree Item 9	U	Know	Info	PI		3d, 3h
40	Growing a Tree Item 10	M	*	*	PI		3d, 3h
41	Turangi Item 19	U	Know	Info	PI		3d, 3h
41	Turangi Item 20	U	Know	Info	PI		3d, 3h
41	Turangi Item 21	M	*	Info	PI		3d, 3h
41	Turangi Item 22	M	*	Info	PI		3d, 3h
41	Turangi Item 23	M	*	*	PI		3d, 3h
41	Turangi Item 24	EA	*	Interp	TC	1i	3d
41	Turangi Item 25	*	*	*	PI		3d, 3h
42	Paper Superplanes Item 11	U	Know	Info	PI		3h
42	Paper Superplanes Item 12	U	Know	Info	PI		3h
42	Paper Superplanes Item 13	U	Know	Info	PI		3h
42	Paper Superplanes Item 14	*	Know	*	TC	*	*
42	Paper Superplanes Item 15	M	*	*	PI		3h
42	Paper Superplanes Item 16	*	*	*	*		3d
42	Paper Superplanes Item 17	U	Know	*	TC	1i	
42	Paper Superplanes Item 18	U	Know	Info	PI		3h
43	Terns Item 41	M	Know	Info	PI		3h
43	Terns Item 42	*	*	*	TC		3d
43	Terns Item 43	*	*	*	EL	1n	
43	Terns Item 44	R	Comp	Interp	TC	1f, 1g	
43	Terns Item 45	U	Know	*	EL		3f
44	Gull Rescue Item 24	U	Know	Info	*	1j	3h
44	Gull Rescue Item 25	*	Comp	*	PI		3h
44	Gull Rescue Item 26	*	Comp	*	*	1i, 1j, 1n	
44	Gull Rescue Item 27	U	*	Info	*	1j	3h
44	Gull Rescue Item 28	U	Know	Info	PI		3h, 3i
44	Gull Rescue Item 29	R	*	Infer	*	1j	
44	Gull Rescue Item 30	R	*	Interp	*	1i, 1j	

Meagher-Lundberg, P., and Brown, G. L. T

44	Gull Rescue Item 31	*	*	*	PI	1j	3h
44	Gull Rescue Item 32	*	Comp	*	EL	1j, 1n	
45	Soccer All Whites Item 33	U	Know	Info	PI		3h, 3i
45	Soccer All Whites Item 34	*	Comp	*	TC	1i, 1j	
45	Soccer All Whites Item 35	U	Know	Info	PI	1j	3h, 3i

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Characteristics of asTTle Assessment Items (continued)

45	Soccer All Whites Item 36	*	Comp	Infer	*	1j	3h	
45	Soccer All Whites Item 37	R	Comp	*	TC	1i, 1n		
45	Soccer All Whites Item 38	U	Know	Info	PI		3h, 3i	
45	Soccer All Whites Item 39	M	Comp	*	*	1i, 1n		
45	Soccer All Whites Item 40	EA	*	Eval	TC	1f		
46	Just in time Item 17	*	Comp	*	*	1n	3c	
46	Just in time Item 18	*	Comp	*	EL	1j, 1n	3c	
46	Just in time Item 19	*	Comp	*	EL	1i, 1j	3c	
46	Just in time Item 20	*	Comp	*	*	1i, 1j, 1n	3c	
46	Just in time Item 21	*	Comp	*	*	1i, 1j, 1n	3c	
46	Just in time Item 22	*	Comp	*	EL	1i, 1j, 1n	3c	
46	Just in time Item 23	*	Comp	*	EL	1i, 1n	3c	
47	Rewrite the sentence Item 13	*	Know	Interp	EL			4a
47	Rewrite the sentence Item 14	U	Know	*	EL			4a
47	Rewrite the sentence Item 15	U	Know	*	EL			4a
47	Rewrite the sentence Item 16	*	Know	*	EL	*	*	*
48	Takahe Facts Item 26	U	Know	Info	PI		3h, 3i	
48	Takahe Facts Item 27	U	Know	Info	PI		3h, 3i	
48	Takahe Facts Item 28	U	Know	Info	PI		3h	
48	Takahe Facts Item 29	U	Know	Info	PI		3h	
48	Takahe Facts Item 30	U	Know	Info	PI		3h	
48	Takahe Facts Item 31	U	Know	Info	PI	1j	3h	
48	Takahe Facts Item 32	M	*	Infer	TC	1i	3h	
49	Wish Item 40	U	Know	Info	PI		3h	
49	Wish Item 41	U	*	Infer	EL			4a
49	Wish Item 42	R	*	*	*	1e		
49	Wish Item 43	U	Comp	Info	EL		3g	
49	Wish Item 44	*	An	Infer	PI	1d	3h	
49	Wish Item 45	R	An	*	*	1e, 1i		
49	Wish Item 46	*	Know	Infer	EL		3c	

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better. Kia Ora Sally Items 8 to 13 were used in training but not rated.

* = no agreement.

Appendix 4: Level of Agreement on Curriculum Level of Texts

Appendix Table 16

Level of Agreement on Curriculum Level and Difficulty within Level of Individual Reading Texts

Text No	Text name	Under L2	Level 2			Level 3			Level 4			Over L4	Level	Difficulty
			Ba	Pr	Ad	Ba	Pr	Ad	Ba	Pr	Ad			
1	Twinkle Twinkle Star					2			2	2		L4	*	
2	Fog					3	2		1			L3	*	
3	Potato Printing		6									L2	Ba	
4	Grandad's Cupboard					2	3		1			L3	*	
5	Rebound					1	1	1	1	2		*	*	
6	Black Noddy						1	2	2	1		*	*	
7	Cup Cakes		1	2	2				1			L2	*	
8	Dear Ms Donaldson		5		1							L2	Ba	
9	Making Chocolate			1		1	2		1	1		*	*	
10	Scuba Diving		1			3	1			1		L3	*	
11	Tara's Tennis Lesson				1		4			1		L3	Pr	
12	The Tuatara				1	1	1		2	1		*	*	
13	Simply Delicious	1	5									L2	Ba	
14	Party Invitation		4	1	1							L2	Ba	
15	Bat Poem				1	2	3					L3	*	
16	Whales		1	2		2	1					*	*	
17	Contents Page		3	3								L2	*	
18	Jonah's Surprise		1	4								L2	Pr	
19	Operation Skatebowl					1	1	1	2	1		*	*	
20	Keas				1	1	3	1				L3	*	
21	Kia Ora Sally		1	8		2						L2	Pr	
22	Five Sisters	1	1	2	2							L2	*	
23	Rimu Valley Fair		1	3	2							L2	*	
24	Fishermen's Boats			1			4	1				L3	Pr	
25	Middle of the Night			1		1	1	2	1			L3	*	
27	Kurapa Library		1	1	1	1	1	1				*	*	
28	Lost Kitten		2	3	1							L2	*	
29	Postcard to Nana			3		1	1	1				*	*	
31	Anna's Bargain						4	1		1		L3	Pr	
32	It's not worth the Risk					2	3	1				L3	*	
34	NZ Rugby Union		1	2	1	2						L2	*	
36	Back cover of Rebound		1			3	2					L3	*	

Item Signature Study, Calibration 1, Technical Report 12

37	Nature Maps	1	3	1	1							L2	*
38	E-mail from Alaska			1	2	1	2					L2	*
39	Letter to Editor				1	1		2	2			L4	*
40	Growing a Tree	3	3									*	*
41	Turangi			3	1	1	1					L2	*
42	Paper Superplanes			2	3				1			L2	*
43	Terns	1	1	2	1				1			L2	*
44	Gull Rescue			1		2	2	1				L3	*
45	Soccer All Whites				1	1	1	1	2			*	*
46	Just in time				1	1	2		1	1		L3	*
48	Takahe Facts	2	1	1	2	2						L3	*
49	Wish	1		1	1	4						L3	Pr

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better. Each text was given six ratings, except Kia Ora Sally, which was used for training by 11 raters. The total numbers of texts agreed on were 10 (level and difficulty), 23 (level only), and 10 no agreement.
 * = no agreement.

Meagher-Lundberg, P., and Brown, G. L. T.
Appendix 5: Resolved Text and Item Characteristics

Appendix Table 17
Characteristics of asTTle Reading Texts – Final Assignment

Paper	Text name	Form	Curriculum Level	Curriculum Difficulty	Purpose	Print Considerateness	Illustration Considerateness	Genre - Purpose	Essential Learning Area
E	Twinkle Twinkle Star	C	L4	Ad	Inf	Cons Print	Cons	Rep	Sci
C	Fog	C	L3	Ad	Lit	Cons Print	Non-Cons	Ent	Lang
E	Potato Printing	NC	L2	Ba	Inf	Cons Print	Cons	Instr	Arts
B	Grandad's Cupboard	C	L3	Ad	Lit	Cons Print	N/A	Ent	Lang
E	Rebound	C	L4	Ba	Lit	Cons Print	Cons	Ent	Lang
D	Black Noddy	C	L4	Pr	Lit	Cons Print	Non-Cons	Ent	Lang
D	Cup Cakes	NC	L2	Ad	Inf	Cons Print	Cons	Instr	Tech
D	Dear Ms Donaldson	C	L2	Pr	Inf	Cons Print	N/A	Expl	Lang
C	Making Chocolate	NC	L4	Pr	Inf	Cons Print	Cons	Expl	Tech
C	Scuba Diving	NC	L3	Pr	Inf	Cons Print	Cons	Instr	Health
D	Tara's Tennis Lesson	C	L3	Pr	Lit	Cons Print	N/A	Ent	Lang
A	The Tuatara	NC	L4	Pr	Inf	Cons Print	Cons	Rep	Sci
C	Simply Delicious	NC	L2	Ba	Lit	Cons Print	Cons	Ent	Lang
C	Party Invitation	C	L2	Pr	Inf	Cons Print	Cons	Instr	Lang
B	Bat Poem	C	L3	Ad	Lit	Cons Print	Cons	Ent	Lang
B	Whales	C	L3	Pr	Inf	Cons Print	Cons	Rep	Sci
A	Contents Page	NC	L2	Pr	Inf	Cons Print	Non-Cons	Inform	Sci
D	Jonah's Surprise	C	L2	Pr	Lit	Cons Print	N/A	Ent	Lang
F	Operation Skatebowl	C	L4	Ba	Inf	Cons Print	Cons	Rep	SocSci
A	Keas	C	L3	Pr	Lit	Cons Print	Cons	Ent	Lang
A	Kia Ora Sally	C	L3	Ba	Lit	Cons Print	Cons	Ent	Lang
A	Five Sisters	NC	L2	Ba	Lit	Cons Print	Cons	Ent	Lang
E	Rimu Valley Fair	NC	L2	Ad	Inf	Cons Print	Cons	Arg	Lang
A	Fishermen's Boats	C	L3	Ad	Lit	Cons Print	Cons	Ent	Lang
E	Middle of the Night	C	L3	Pr	Lit	Cons Print	N/A	Ent	Lang
B	Kurapa Library	NC	L2	Ad	Inf	Cons Print	Cons	Instr	Lang
H	Lost Kitten	NC	L2	Pr	Inf	Cons Print	Cons	Rep	Lang
B	Postcard to Nana	C	L3	Ba	Lit	Cons Print	Cons	Ent	Lang
D	Anna's Bargain	C	L3	Ad	Lit	Cons Print	N/A	Ent	Lang
C	It's not worth the Risk	C	L3	Pr	Inf	Cons Print	Cons	Expl	Health
F	NZ Rugby Union	NC	L2	Ba	Inf	Cons Print	Cons	Inform	Lang
F	Back cover Rebound	C	L3	Pr	Lit	Cons Print	Cons	Ent	Lang
F	Nature Maps	NC	L2	Ad	Inf	Cons Print	Cons	Instr	Sci
G	E-mail from Alaska	C	L3	Pr	Lit	Cons Print	Cons	Ent	Lang

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Item Signature Study, Calibration 1, Technical Report 12

Resolved Characteristics of asTTle Reading Texts (continued)

F	Letter to Editor	C	L4	Ad	Inf	Cons Print	N/A	Arg	Lang
G	Growing a Tree	NC	L2	Ba	Inf	Cons Print	Cons	Instr	Sci
G	Turangi	NC	L2	Ad	Inf	Cons Print	Cons	Inform	SocSci
G	Paper Superplanes	NC	L2	Ad	Inf	Cons Print	Cons	Instr	Tech
H	Terns	NC	L4	Ba	Lit	Cons Print	Cons	Ent	Lang
H	Gull Rescue	C	L4	Ba	Lit	Cons Print	N/A	Ent	Lang
H	Soccer All Whites	C	L4	Ad	Inf	Cons Print	N/A	Rep	SocSci
H	Just in time	C	L3	Ad	Lit	Cons Print	N/A	Ent	Lang
G	Takahe Facts	C	L3	Ad	Inf	Cons Print	Cons	Rep	Sci
G	Wish	C	L4	Ba	Lit	Cons Print	N/A	Ent	Lang

Note. Texts are deemed to have a characteristic where teachers had reached a two-thirds agreement or better or experts had agreed by consensus.

Appendix Table 18

Characteristics of asTTle Assessment Items – Final Assignment

Paper	Item Name & No	SOLO Taxonomy	Processes of Comprehension	Curriculum Area Processes	Curriculum Area Objectives			
					Comprehend	Communicate	Skills	Conventions
E	Twinkle Twinkle Star Item 31	EA	Interp	TC	1b, 1g		3i	
E	Twinkle Twinkle Star Item 32	R	Infer	TC	1b		3h	
E	Twinkle Twinkle Star Item 33	U	Info	PI	1j		3h	
E	Twinkle Twinkle Star Item 34	M	Info	PI	1j		3h	
E	Twinkle Twinkle Star Item 35	M	Info	PI	1j		3h	
E	Twinkle Twinkle Star Item 36	R	Infer	TC	1b, 1j		3h	
E	Twinkle Twinkle Star Item 37	M	Info	PI	1b, 1j		3h	
C	Fog Item 39	R	Infer	TC	1i, 1j			
C	Fog Item 40	U	Info	PI			3h	
C	Fog Item 41	R	Infer	TC	1j		3i	
C	Fog Item 42	R	Infer	TC	1i, 1j			
C	Fog Item 43.1	M	Info	PI	1i		3h	
C	Fog Item 43.2	EA	Eval	TC	1f			
C	Fog Item 44	EA	Interp	TC	1e, 1j			
E	Potato Printing Item 1	R	Info	PI	1e		3d	
E	Potato Printing Item 2	R	Infer	PI	1i, 1p		3d	
E	Potato Printing Item 3	M	Info	PI	1p, 1q		3d, 3h	
B	Grandad's Cupboard Item 41	R	Infer	TC	1e, 1i			
B	Grandad's Cupboard Item 42	M	Info	PI			3h	
B	Grandad's Cupboard Item 43	M	Infer	EL			3h	
B	Grandad's Cupboard Item 44	R	Info	PI	1i, 1j			
B	Grandad's Cupboard Item 45	EA	Eval	EL	1i	2b		
B	Grandad's Cupboard Item 46	EA	Interp	TC				4b
E	Rebound Item 25	R	Info	PI			3h	
E	Rebound Item 26	U	Infer	EL	1n, 1o			
E	Rebound Item 27	U	Infer	PI	1j		3h	
E	Rebound Item 28	R	Interp	TC	1i, 1j			
E	Rebound Item 29	R	Infer	TC	1j			
E	Rebound Item 30	EA	Eval	EL	1f	2b		
D	Black Noddy Item 38	R	Infer	TC			3h, 3i	
D	Black Noddy Item 39	R	Infer	TC	1i		3i	
D	Black Noddy Item 40	M	Infer	EL			3i	
D	Black Noddy Item 41	M	Infer	EL	1j		3b	
D	Black Noddy Item 42	EA	Eval	TC	1i, 1j		3i	
D	Black Noddy Item 43	M	Info	PI	1j		3h	

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Item Signature Study, Calibration 1, Technical Report 12

Resolved characteristics of asTTle Assessment Items (continued)

D	Black Noddy Item 44	R	Interp	TC	1i	3e	
D	Black Noddy Item 45	U	Infer	EL	1j, 1n	3g	
D	Cup Cakes Item 10	R	Infer	PI	1j, 1n, 1p	3d, 3h	4a
D	Cup Cakes Item 11	M	Info	PI	1j	3h	
D	Cup Cakes Item 12	R	Interp	TC		3d	
D	Cup Cakes Item 13	R	Interp	EL	1i, 1j, 1p		
D	Cup Cakes Item 14	R	Info	PI		3d, 3i	
D	Cup Cakes Item 15	M	Info	PI	1j	3i	
D	Cup Cakes Item 16	U	Info	PI	1j		
D	Cup Cakes Item 17	M	Info	PI	1j	3d, 3h	
D	Dear Ms Donaldson Item 1	U	Info	PI		3h, 3i	
D	Dear Ms Donaldson Item 2	R	Info	PI	1j	3h, 3i	
D	Dear Ms Donaldson Item 3	U	Info	PI	1j	3h	
D	Dear Ms Donaldson Item 4	U	Info	PI	1j	3h	
D	Dear Ms Donaldson Item 5	R	Infer	TC	1i		
C	Making Chocolate Item 23	U	Infer	TC	1j	3h	
C	Making Chocolate Item 24	R	Info	PI	1j	3h	
C	Making Chocolate Item 25	U	Info	PI	1j	3h	
C	Making Chocolate Item 26	R	Interp	TC	1j		
C	Making Chocolate Item 27	R	Infer	TC	1j	3h	
C	Making Chocolate Item 28	M	Info	PI	1j	3h	
C	Making Chocolate Item 29	R	Info	PI	1j	3h	
C	Scuba Diving Item 11	M	Infer	EL	1n	3b, 3d	
C	Scuba Diving Item 12	R	Infer	EL	1i	3b, 3d, 3h	
C	Scuba Diving Item 13	R	Infer	TC	1j	3h	
C	Scuba Diving Item 14	M	Info	PI		3d, 3h	
C	Scuba Diving Item 15	M	Info	PI		3d	
C	Scuba Diving Item 16	U	Infer	EL	1n	3b	4d
D	Tara's Tennis Lesson Item 23	R	Infer	EL	1b, 1j, 1n	3b	
D	Tara's Tennis Lesson Item 24	R	Infer	EL	1n	3b	4b
D	Tara's Tennis Lesson Item 25	R	Infer	EL	1j, 1n	3b	4b
D	Tara's Tennis Lesson Item 26	R	Infer	EL	1j, 1n, 1p		4a, 4b
D	Tara's Tennis Lesson Item 27	R	Infer	EL	1j, 1n, 1o		
D	Tara's Tennis Lesson Item 28	R	Infer	EL	1j, 1n		4a, 4b
A	The Tuatara Item 27	EA	Interp	EL	1i, 1j		
A	The Tuatara Item 28	M	Info	PI	1j	3h	
A	The Tuatara Item 29	M	Infer	PI	1j	3h	
A	The Tuatara Item 30	R	Infer	TC	1j		
A	The Tuatara Item 31	M	Info	PI	1j	3h	

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Resolved characteristics of asTTle Assessment Items (continued)

A	The Tuatara Item 32	U	Info	PI	1j	3h	
C	Simply Delicious Item 1	U	Infer	EL	1i	3h	
C	Simply Delicious Item 2	M	Info	PI		3d	
C	Simply Delicious Item 3	U	Infer	EL		3h	
C	Party Invitation Item 4	U	Info	PI		3h, 3i	
C	Party Invitation Item 5	U	Infer	PI		3h	
C	Party Invitation Item 6	U	Info	PI		3h	
C	Party Invitation Item 7	U	Info	PI		3h	
C	Party Invitation Item 8	U	Infer	PI		3h	
C	Party Invitation Item 9	U	Info	PI		3h	
C	Party Invitation Item 10	U	Info	PI		3h	
B	Bat Poem Item 35	R	Infer	TC	1i		
B	Bat Poem Item 36	R	Interp	TC	1i, 1j		
B	Bat Poem Item 37	R	Infer	EL	1n	3f	
B	Bat Poem Item 38	EA	Interp	EL	1j		
B	Bat Poem Item 39	EA	Interp	TC	1g, 1j		
B	Bat Poem Item 40	R	Infer	EL		3h, 3i	
B	Whales Item 18	R	Info	PI	1j	3h	
B	Whales Item 19	EA	Interp	EL	1n	3h	
B	Whales Item 20	M	Info	PI	1j, 1n, 1p	3h	
B	Whales Item 21	R	Info	PI		3h, 3i	
B	Whales Item 22	U	Info	PI		3h	
B	Whales Item 23	M	Info	PI	1j	3h	
B	Whales Item 24	R	Info	PI	1j	3h, 3i	
A	Contents Page Item 3	EA	Interp	EL	1i		
A	Contents Page Item 4	U	Info	PI		3h	
A	Contents Page Item 5	R	Infer	EL	1f, 1n	3g	4d
A	Contents Page Item 6	M	Info	PI		3i	
A	Contents Page Item 7	EA	Interp	TC	1i, 1j, 1n		
D	Jonah's Surprise Item 4	U	Infer	EL	1n		
D	Jonah's Surprise Item 5	R	Info	PI	1e, 1g		
D	Jonah's Surprise Item 6	M	Info	PI		3h	
D	Jonah's Surprise Item 7	EA	Evalu	EL	1f, 1i		
F	Operation Skatebowl Item 30	R	Infer	EL	1j	3h	
F	Operation Skatebowl Item 31	R	Interp	TC	1i, 1j	3e	
F	Operation Skatebowl Item 32	EA	Interp	TC	1d, 1f, 1i	3g	
F	Operation Skatebowl Item 33	R	Infer	TC	1i, 1j		
F	Operation Skatebowl Item 34	U	Infer	EL	1n, 1p		
F	Operation Skatebowl Item 35	R	Infer	TC	1d, 1g, 1j		

Resolved characteristics of asTTle Assessment Items (continued)

F	Operation Skatebowl Item 36	R	Infer	EL	1j		
F	Operation Skatebowl Item 37	EA	Evalu	TC	1i, 1j		
A	Keas Item 20	U	Info	PI		3h	
A	Keas Item 21	R	Infer	TC	1j	3h	
A	Keas Item 22	M	Infer	TC	1j	3h	
A	Keas Item 23	R	Infer	EL		3h	
A	Keas Item 24	U	Infer	EL	1j, 1n, 1p		
A	Keas Item 25	R	Infer	TC	1j	3h	
A	Keas Item 26	EA	Interp	TC	1i, 1j	3e	
A	Kia Ora Sally Item 8	U	Info	PI			
A	Kia Ora Sally Item 9	U	Info	PI			
A	Kia Ora Sally Item 10	U	Info	PI			
A	Kia Ora Sally Item 11	M	Info	PI			
A	Kia Ora Sally Item 12	M	Info	PI			
A	Kia Ora Sally Item 13	R	Infer	TC			
A	Five Sisters Item 1	U	Infer	EL	1n, 1o	3h, 3i	4d
A	Five Sisters Item 2	U	Infer	EL	1i	3h, 3i	
E	Rimu Valley Fair Item 8	R	Interp	TC	1g		
E	Rimu Valley Fair Item 9	U	Info	PI		3h	
E	Rimu Valley Fair Item 10	U	Info	PI		3h, 3i	
E	Rimu Valley Fair Item 11	U	Infer	EL			4a
E	Rimu Valley Fair Item 12	M	Info	PI		3i	
E	Rimu Valley Fair Item 13	EA	Interp	TC	1i, 1j, 1o		
A	Fishermen's Boats Item 33	M	Infer	TC	1i		
A	Fishermen's Boats Item 34	R	Infer	EL	1n, 1q	3f, 3h	
A	Fishermen's Boats Item 35	R	Interp	TC	1b, 1i, 1j, 1n, 1p		
A	Fishermen's Boats Item 36	R	Infer	EL	1i		
A	Fishermen's Boats Item 37	R	Interp	TC	1g, 1i	3h, 3i	
A	Fishermen's Boats Item 38	R	Infer	EL	1e, 1i		
A	Fishermen's Boats Item 39	EA	Evalu	TC	1f, 1i		
E	Middle of the Night Item 19	U	Infer	EL	1j, 1n		
E	Middle of the Night Item 20	U	Infer	EL	1j, 1n		
E	Middle of the Night Item 21	U	Infer	EL	1j, 1n		
E	Middle of the Night Item 22	U	Infer	EL	1n		
E	Middle of the Night Item 23	U	Infer	EL	1j, 1n		
E	Middle of the Night Item 24	U	Infer	EL	1j, 1n		
E	Write one of following Item 14	M	Infer	EL	1f, 1n		4b

E	Write one of following Item 15	M	Infer	EL		4a
(continued on next page)						
Resolved characteristics of asTTle Assessment Items (continued)						
B	Kurapa Library Item 12	M	Info	PI	1j	3h
B	Kurapa Library Item 13	M	Info	PI	1e, 1j	3i
B	Kurapa Library Item 14	EA	Interp	TC	1f, 1j	
B	Kurapa Library Item 15	R	Interp	PI		
B	Kurapa Library Item 16	EA	Interp	TC	1i, 1j, 1n	
B	Kurapa Library Item 17	M	Info	PI	1j	3d
H	Lost Kitten Item 1	U	Info	PI		3h
H	Lost Kitten Item 2	U	Info	PI	1j	3h
H	Lost Kitten Item 3	R	Infer	TC	1i, 1j	
H	Lost Kitten Item 4	U	Info	PI		3h
B	Postcard to Nana Item 5	U	Info	PI	1n	3h
B	Postcard to Nana Item 6	U	Info	PI		3h
B	Postcard to Nana Item 7	U	Info	PI		3h
B	Postcard to Nana Item 8	U	Infer	PI	1i, 1j	3h
B	Postcard to Nana Item 9	R	Infer	TC		3g
B	Postcard to Nana Item 10	M	Info	PI	1j	3h
B	Postcard to Nana Item 11	M	Infer	EL	1n	3i
B	Choose the best word Item 25	U	Infer	EL		3b
B	Choose the best word Item 26	U	Infer	EL		
B	Choose the best word Item 27	U	Infer	EL		
B	Choose the best word Item 28	U	Infer	EL		
D	Anna's Bargain Item 29	R	Infer	TC	1b, 1i, 1j	
D	Anna's Bargain Item 30	R	Infer	TC		3h
D	Anna's Bargain Item 31	U	Info	PI	1j	3h
D	Anna's Bargain Item 32	R	Info	PI	1j	3h
D	Anna's Bargain Item 33	R	Infer	TC	1j	3h
D	Anna's Bargain Item 34	R	Interp	TC	1j	3h
D	Anna's Bargain Item 35	U	Info	PI	1i, 1j	3h
D	Anna's Bargain Item 36	R	Interp	EL		3h
D	Anna's Bargain Item 37	R	Infer	TC	1j	3h
C	It's not worth the Risk Item 17	U	Info	PI		3h
C	It's not worth the Risk Item 18	R	Interp	TC	1i	
C	It's not worth the Risk Item 19	U	Infer	EL	1j, 1n	
C	It's not worth the Risk Item 20	U	Info	PI	1j	
C	It's not worth the Risk Item 21	EA	Interp	EL	1f, 1i, 1j	
C	It's not worth the Risk Item 22	EA	Interp	TC	1f, 1g, 1j	
D	Shade the bubbles Item 18	M	Infer	EL		

Item Signature Study, Calibration 1, Technical Report 12

D	Shade the bubbles Item 19	M	Infer	EL			4a
D	Shade the bubbles Item 20	U	Infer	EL	1f, 1n	3f	4c

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Resolved characteristics of asTTle Assessment Items (continued)

D	Shade the bubbles Item 21	U	Infer	EL	1n, 1p	3f	4c
D	Shade the bubbles Item 22	U	Infer	EL	1n, 1q	3f	4c
F	NZ Rugby Union Item 1	U	Info	PI	1j	3h	
F	NZ Rugby Union Item 2	R	Infer	PI	1i, 1j		4d
F	NZ Rugby Union Item 3	U	Info	PI		3h	
F	NZ Rugby Union Item 4	U	Info	PI		3h	
F	NZ Rugby Union Item 5	U	Info	PI		3h	
F	NZ Rugby Union Item 6	U	Info	PI	1f, 1i	3h	
F	Banana Smoothie Item 7	R	Infer	TC	1i		
F	Banana Smoothie Item 8	M	Infer	EL			4a
F	Banana Smoothie Item 9	M	Infer	EL			4a
F	Back cover Rebound Item 16	U	Infer	TC		3h	
F	Back cover Rebound Item 17	R	Info	PI		3h	
F	Back cover Rebound Item 18	R	Infer	TC	1i, 1j, 1n		4d
F	Back cover Rebound Item 19	U	Infer	EL			4a
F	Back cover Rebound Item 20	EA	Interp	TC		3g	
F	Back cover Rebound Item 21	EA	Eval	EL		3g	
F	Back cover Rebound Item 22	M	Infer	EL			4a
F	Nature Maps Item 10	U	Info	PI		3h	
F	Nature Maps Item 11	M	Info	PI		3h	
F	Nature Maps Item 12	U	Info	PI		3d, 3h	
F	Nature Maps Item 13	U	Info	PI	1j	3d, 3h	
F	Nature Maps Item 14	R	Info	PI		3h	
F	Nature Maps Item 15	R	Interp	TC	1f, 1i	3g	
G	E-mail from Alaska Item 33	U	Info	PI		3h	
G	E-mail from Alaska Item 34	R	Infer	PI		3h	
G	E-mail from Alaska Item 35	R	Infer	TC		3h	
G	E-mail from Alaska Item 36	M	Info	PI		3h	
G	E-mail from Alaska Item 37	EA	Interp	TC	1i, 1j		
G	E-mail from Alaska Item 38	EA	Interp	TC	1f, 1g		
G	E-mail from Alaska Item 39	U	Info	PI		3h	
F	Letter to Editor Item 38	R	Interp	TC	1f		
F	Letter to Editor Item 39	R	Interp	TC		3h	
F	Letter to Editor Item 40	U	Infer	EL	1f, 1n	3c	
F	Letter to Editor Item 41	U	Infer	EL	1i, 1j, 1n, 1p		
F	Letter to Editor Item 42	R	Interp	TC	1d, 1g, 1j		

F	Letter to Editor Item 43	R	Infer	EL	1i, 1j
F	Letter to Editor Item 44	R	Evalu	TC	1d, 1i
F	Letter to Editor Item 45	EA	Evalu	TC	1i

(continued on next page)

Resolved characteristics of asTTle Assessment Items (continued)

G	Growing a Tree Item 7	U	Info	PI		3h
G	Growing a Tree Item 8	U	Info	PI		3d, 3h
G	Growing a Tree Item 9	U	Info	PI		3d, 3h
G	Growing a Tree Item 10	R	Infer	PI		3d, 3h
G	Turangi Item 19	U	Info	PI		3d, 3h
G	Turangi Item 20	M	Info	PI		3d, 3h
G	Turangi Item 21	M	Info	PI		3d, 3h
G	Turangi Item 22	R	Info	PI		3d, 3h
G	Turangi Item 23	R	Info	PI		3d, 3h
G	Turangi Item 24	EA	Interp	TC	1i	3d
G	Turangi Item 25	M	Info	PI		3d, 3h
G	Paper Superplanes Item 11	U	Info	PI		3h
G	Paper Superplanes Item 12	U	Info	PI		3h
G	Paper Superplanes Item 13	U	Info	PI		3h
G	Paper Superplanes Item 14	EA	Interp	TC		3g
G	Paper Superplanes Item 15	M	Infer	EL		3h
G	Paper Superplanes Item 16	M	Infer	TC		3d
G	Paper Superplanes Item 17	EA	Interp	EL	1i	
G	Paper Superplanes Item 18	U	Info	PI		3h
H	Terns Item 41	R	Infer	TC		3h
H	Terns Item 42	EA	Interp	TC		3d
H	Terns Item 43	U	Infer	EL	1n	
H	Terns Item 44	EA	Interp	TC	1f, 1g	
H	Terns Item 45	R	Infer	EL		3f
H	Gull Rescue Item 24	R	Infer	TC	1j	3h
H	Gull Rescue Item 25	R	Info	PI		3h
H	Gull Rescue Item 26	U	Infer	EL	1i, 1j, 1n	
H	Gull Rescue Item 28	U	Info	PI		3h, 3i
H	Gull Rescue Item 29	U	Infer	EL	1j	
H	Gull Rescue Item 30	M	Infer	TC	1i, 1j	
H	Gull Rescue Item 31	U	Infer	TC	1j	3h
H	Gull Rescue Item 32	U	Infer	EL	1j, 1n	
H	Soccer All Whites Item 33	U	Infer	PI		3h, 3i
H	Soccer All Whites Item 34	R	Infer	TC	1i, 1j	
H	Soccer All Whites Item 35	U	Info	PI	1j	3h, 3i

Item Signature Study, Calibration 1, Technical Report 12

H	Soccer All Whites Item 36	U	Infer	EL	1j	3h
H	Soccer All Whites Item 37	R	Infer	EL	1i, 1n	
H	Soccer All Whites Item 38	U	Info	PI		3h, 3i
H	Soccer All Whites Item 39	U	Infer	EL	1i, 1n	

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Resolved characteristics of asTTle Assessment Items (continued)

H	Soccer All Whites Item 40	EA	Evalu	TC	1f		
H	Just in time Item 17	U	Infer	EL	1n	3c	
H	Just in time Item 18	U	Infer	EL	1j, 1n	3c	
H	Just in time Item 19	U	Infer	EL	1i, 1j	3c	
H	Just in time Item 20	U	Infer	EL	1i, 1j, 1n	3c	
H	Just in time Item 21	U	Infer	EL	1i, 1j, 1n	3c	
H	Just in time Item 22	U	Infer	EL	1i, 1j, 1n	3c	
H	Just in time Item 23	U	Infer	EL	1i, 1n	3c	
H	Rewrite the sentence Item 13	M	Infer	EL			4a
H	Rewrite the sentence Item 14	M	Infer	EL			4a
H	Rewrite the sentence Item 15	M	Infer	EL			4a
H	Rewrite the sentence Item 16	M	Infer	EL			4c
G	Takahe Facts Item 26	R	Info	PI		3h, 3i	
G	Takahe Facts Item 27	U	Info	PI		3h, 3i	
G	Takahe Facts Item 28	U	Info	PI		3h	
G	Takahe Facts Item 29	U	Info	PI		3h	
G	Takahe Facts Item 30	R	Info	PI		3h	
G	Takahe Facts Item 31	U	Info	PI	1j	3h	
G	Takahe Facts Item 32	R	Infer	EL	1i	3h	
G	Wish Item 40	U	Info	PI		3h	
G	Wish Item 41	R	Interp	EL			4a
G	Wish Item 42	M	Infer	PI	1e		
G	Wish Item 43	R	Infer	EL		3g	
G	Wish Item 44	R	Infer	TC	1d	3h	
G	Wish Item 45	R	Infer	EL	1e, 1i		
G	Wish Item 46	U	Infer	EL		3c	
G	Choose four words Item 1	U	Infer	EL			4b
G	Choose four words Item 2	U	Infer	EL			4b
G	Choose four words Item 3	U	Infer	EL			4b
G	Choose four words Item 4	U	Infer	EL			4b
G	Use correct punctuation Item 5	M	Infer	EL			4a
G	Use correct punctuation Item 6	M	Infer	EL			4a

Note. Texts are deemed to have a characteristic where there is a two-thirds agreement or better or experts had agreed by consensus.

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