

Is Item Signature Study: Report on the Characteristics of Reading Texts and Items from Calibration 2

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This is the report of the second item signature study conducted with Project asTTle reading assessment items. Six practising teachers determined the cognitive and curriculum characteristics of 222 assessment items and the curriculum and structural characteristics of 33 reading texts. Ratings were conducted in whole group, individual, and pair conditions, with the pair condition providing excellent dependability ($\phi > 0.80$) and efficiency. The improved inter-rater agreement from the first item signature study (Technical Report 12) can be attributed to revised training and supervision procedures.

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Introduction

The Assessment Tools for Teaching and Learning Project (Project asTTle), a partnership between the University of Auckland and the Educational Testing Centre, University of NSW, Australia, is developing, under contract to the Ministry of Education, new literacy and numeracy assessment tools for use with students in Years 5 to 7, in English and in Maori.

These tools, to be supplied on a CD-ROM, will extend the range of voluntary-use assessment tools currently available to primary schools. Using the asTTle item “banks” of reading assessment items (or tasks) on the CD-ROM, schools will be able to analyse and aggregate information about the achievement of individual students and/or groups of students within the school in relation to national standards at any time during the year. All assessment items in the banks have been initiated and reviewed by New Zealand teachers and have been calibrated on a nationally representative sample of students.

Reading texts and assessment items used in the first calibration of asTTle reading assessment (November, 2000) were classified in an item signature study to ascertain their literacy-relevant characteristics (Meagher-Lundberg & Brown, 2001). These characteristics will be specified by test users (usually teachers) in compiling tests from assessment items in the bank using the program on the CD-ROM. Using a similar method to that used in the first item signature study, this study ascertained the characteristics of the reading texts and assessment items calibrated in May 2001 for the asTTle item bank.

Purpose of the Study

The purpose of the study was to critically classify reading texts and assessment items from the second calibration – Papers 7 to 12 – for the Close Reading strand of the English curriculum, to ensure they met quality standards. A small set of assessment items from Paper A that had been used for training in the first study and had not been rated were included in this study.

Goals of the Study

The goals of the study were:

1. to discuss and reach consensus on definitions for the Close Reading strand of the English curriculum (see Appendix Table 12 for definitions);
2. to train teachers to consistently rate assessment items according to the definitions; and
3. to rate the reading texts and assessment items from Paper A and Papers 7 to 12 according to the definitions.

In addition, information on the characteristics of the teacher raters, relevant to their expertise in literacy, was obtained.

Methodology

Definition Development

In the first item signature study (Meagher-Lundberg & Brown, 2001), definitions for key literacy categories were initially developed by asTTle team members (see Appendix 1 for the sources used in developing these definitions). The literacy categories covered both text features and comprehension processes (i.e., the processes involved in answering an assessment item or task). Where the teachers rating the characteristics of reading texts and assessment items in that study did not reach agreement, the characteristics were resolved by a group of experts, and some definitions were amended during this process.

The definitions of these literacy categories were further developed during a series of standard-setting workshops and then presented to teachers participating in the item signature study reported here. The definitions of categories and variables used in this study are given in Appendix 2. Definitions were developed from English curriculum documents, international assessment programmes, and reports of various research projects conducted for Project asTTle (see Appendix 1).

Categories and Variables used to Classify Reading Texts

The 33 reading texts were rated according to the literacy categories listed below. 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. A brief definition of each category is 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 (Purpose)* – 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 222 assessment items were classified according to the categories listed below. These 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. A brief definition of each category is 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.

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- *PIRLS 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. Curriculum Area Objectives included in this study comprised deep and surface features. The deep features were: find information; knowledge; understanding; connections; and inference. The surface features were: grammar; punctuation; and spelling. Appendix Table 10 lists these objectives.
- *Curriculum Area Processes* – The English curriculum identifies three cognitive processes integral to the development of literacy.

Of the 222 assessment items included in this study, 199 assessed comprehension of the 33 reading texts. The remaining 23 items were stand-alone assessment items that were not linked to a reading text. Rating responses were mutually exclusive for SOLO Taxonomy, PIRLS Processes of Comprehension, and Curriculum Area Processes. Curriculum Area Objectives were single-value choices, with raters assigning as many objectives as they considered applicable to each assessment item.

Workshop and Quality Control Processes

A three-day workshop was run to critically classify, or rate, the reading texts and assessment items from Paper A and Papers 7 to 12 according to the definitions provided for and refined within the workshop. One reading text from Paper A, and the six assessment items linked to it, were used for training in both the first item signature study and the present study. These items were then rated as part of this study.

Six teachers – all with English curriculum and teaching experience, and previous experience of the classification work from the first item signature study – took part in the workshop. (Details of the teachers' qualifications and experience are given in the Rater Characteristics section below.)

The presenters of the workshop were: a person with expertise in literacy to train the participants on definitions of the categories and associated variables (second author); and a co-ordinator to assist with the workshop process and to write up the results (first author).

The key task required of participants in the workshop was for them to rate the reading texts and assessment items according to the categories and associated variables outlined above (see Appendix 2 for a detailed description). Following recommendations based on the outcomes of the first item signature study, a particular emphasis of this study was on training raters to ensure that they understood and agreed on definitions of the variables under each category and that they consistently rated assessment items according to these definitions.

Day One and part of Day Two of the three-day workshop focused on understanding and using the definitions for rating reading texts. For the remainder of Day Two and all of Day Three, the focus was on understanding and using the definitions for rating assessment items. Definitions given to teachers for rating reading texts included new definitions of Curriculum Level and Difficulty within Curriculum Level, based on standards set in previous workshops (see Appendix Table 2). Also, the definitions for rating assessment items included revisions to the Curriculum Area Objectives, also achieved in the earlier standard-setting workshops (see Appendix Table 10).

Rating procedure. The procedure devised for the teachers to rate the reading texts and assessment items was as follows: (a) discussion of definitions as a whole group and rating of the some texts/items as a group to ensure group understanding of definitions (calibration); (b) rating of texts/items by individual teachers; and (c) where there was disagreement (i.e., where two-thirds majority agreement was not reached) on the rating of a text/item in one or more category, group discussion of definitions; followed by (d) group discussion of the best rating for the text/item until a consensus was reached.

An iterative procedure was used to resolve lack of agreement on the signatures of reading texts and assessment items. When rating texts and items individually, teachers handed in their score sheets, which were then tallied. Where there was not a two-thirds majority agreement on a characteristic, a group discussion – involving checking definitions and reviewing previous benchmark decisions – took place until a consensus was reached.

The procedure for rating the reading texts was essentially as outlined above. Texts from Paper A and Papers 7 and 8 were rated under whole group conditions. For Papers 9 to 12, raters assigned text characteristics individually, then in a whole group discussion. Consensus was sought where there was not a two-thirds majority agreement. Reading texts that had their curriculum level and difficulty set in the first item signature study were used as anchors for assigning Curriculum Levels and Difficulty with Level to reading texts in this study.

The rating of assessment items followed the same procedure as the rating of reading texts, with a small but importance difference: The rating conditions (i.e., group, and individual) were expanded to include pair rating. Assessment items from Paper A were assigned characteristics during training with the whole group, and raters worked individually to assign characteristics to assessment items from Papers 7 and 8. However, following discussion by the group and an examination of outcomes during the process, teachers worked in pairs to rate Papers 9 to 12. For assessment items where two of the three pairs did not reach agreement, whole group discussion was used to reach a consensus.

It was apparent to both the teachers and the researchers that working in pairs led to greater levels of agreement much more quickly than either whole group discussion or individual rating. The dependability of the ratings of assessment items, calculated using the Brennan and Kane Dependability Index (ϕ)¹, is reported in Tables 15 and 16 below.

Rater Characteristics

The teachers taking part in the workshop were asked to complete a questionnaire on their teaching and literacy backgrounds, and their training and qualifications. (See Appendix 3 for copy of the questionnaire.) Their responses are summarised below.

Teaching Background

Teaching experience. Five of the six teachers taking part in the item signature workshop had more than ten years' teaching experience. One teacher had six to ten years' experience.

Current and previous teaching levels. Three of the six teachers taking part in the item signature workshop were currently teaching at the senior primary school level (Years 4 to 6). Two were teaching at the intermediate level (Years 7 to 8) and one was teaching in the junior school (Years 2 to 3).

Five of the six participating teachers had previously taught at the senior school level. Half the teachers had previously taught at the junior school level, half had taught at the new entrant level (Years 0 to 1), and half had taught at the intermediate level.

One teacher had taught at all levels, from new entrant to intermediate, and another teacher had taught from new entrants to senior primary level.

Thus, five of the six teachers were currently teaching within the Year levels for which the assessment materials are being developed and the sixth teacher had recent experience with these Year levels.

Curriculum responsibilities. Each of the six teachers participating in the workshop had overall responsibility for curriculum co-ordination in their school. Five of the six were also curriculum team leaders. The same five were also members of various curriculum teams.

Teachers were responsible for a wide range of curriculum areas. Each of the six teachers was responsible for at least two areas. All six had responsibilities in the area of English, four had

¹ For details see Shavelson, R. J., & Webb, N. M. (1991). *Generalizability Theory. A Primer*. Newbury Park, CA: Sage.

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responsibilities to do with Mathematics, and four had responsibilities in Gifted and Talented Education. One teacher each had responsibilities in the areas of: Social Studies; English for Speakers of Other Languages (ESOL); Art, Drama, and/or Music; Science; Health and Physical Education; and Special Needs.

Literacy responsibilities. Each of the six teachers was responsible for a range of tasks in the area of literacy in their schools. Each teacher had more than one role.

Five teachers were responsible for programme co-ordination or decisions, five for teaching literacy programmes, and five for analysis of literacy assessments. Three teachers had responsibility for all three of these tasks. Three teachers were responsible for resources or budgeting in the literacy area and two were leaders of the curriculum team dealing with literacy. One teacher was responsible for ESOL and another for staff professional development in the literacy area.

Responsibilities for assessment. All six teachers had a range of different assessment responsibilities in their schools. Five teachers had two or more roles.

Five of the six teachers were responsible for analysis of data and/or scoring assessment tasks. Four of the six were responsible for curriculum assessment, while three teachers were responsible for English assessments, one for Mathematics, and one for Gifted and Talented Education. Selection of assessment or testing procedures was the responsibility of four teachers and coordination of testing the responsibility of three. Three teachers undertook school leadership in assessment.

Literacy Projects/Contract Involvement

All six teachers had been involved in projects and contracts focused on literacy. The projects and contracts, and teachers' roles in them were:

- Project asTTle workshops – all six teachers had participated.
- Project AbeL:
 - one teacher as a facilitator supporting schools with assessment issues;
 - one teacher developed writing assessments.
- Writing exemplars for the Ministry of Education (two teachers).
- Ministry of Education contracts, as participants in the areas of:
 - leading and managing schools;
 - literacy leadership;
 - appraisals;
 - English;
 - Mathematics;
 - NESB (non-English-speaking background) students.
- School-based professional development in literacy (one teacher).
- North Shore principals literacy contract (one teacher was a participant).
- Writing English exemplars for Unitec (one teacher).

Training and Qualifications

Teacher qualifications. Although the participant group had a wide and rich experience in literacy and assessment, only two had completed undergraduate degrees. One teacher had completed a BA majoring in Languages. The other did not specify the type of undergraduate degree held. The teacher who held a BA, and another teacher who had partially completed the Advanced Diploma of Teaching, had also completed papers towards a Masters Degree in Education. One teacher held two tertiary diplomas, one in School Management and another in Library Skills.

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

- seminars in the USA on literacy;
- literacy leadership contract;
- North Shore principals literacy contract;
- Project asTTle workshops.

Findings

Characteristics of Reading Texts

The characteristics of the 33 reading texts in the second item signature study are presented below. The characteristics of the individual texts across all of the categories are given in Appendix Table 12 (in Appendix 4).

Text Form

Nearly all (94%) of the 33 reading texts were characterised as continuous (see Table 1); that is, composed of sentences and organised into paragraphs. Just two reading texts were characterised as non-continuous; that is, organised or formatted differently from continuous text, using, for example, lists and diagrams.

Table 1
Characteristics of Text Form

Text Form	Number	% of Total
Continuous	31	94%
Non continuous	2	6%
Total	33	100%

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

Text Purpose (PIRLS)

Of the 33 reading texts in this study, nearly three-quarters (73%) were assigned the characteristic *acquire and use information* and slightly over a quarter were deemed to provide a *literary experience* (see Table 2).

Table 2
Characteristics of Text Purpose (PIRLS)

Text Purpose (PIRLS)	Number	% of Total
Information	24	73%
Literary experience	9	27%
Total	33	100%

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

Curriculum Level and Difficulty

Table 3 shows the assignment of reading texts to Curriculum Level and Difficulty with Level. Over half (55%) the reading texts were assigned to Level 3 of the curriculum, with a fifth (21%) each assigned to Levels 2 and 4, and one text (3%) assigned to Level 5. Within their designated curriculum levels, a total of 49% of all reading texts were classified as basic, 21% as proficient, and 30% as advanced.

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As Table 3 shows, the largest proportion (31%) of the 33 texts were classified as Level 3 basic. Half as many were classified as Level 3 advanced (15%) and Level 3 proficient (9%). Slightly fewer were categorised as Level 2 proficient (12%), Level 2 advanced (9%), and as Level 4 basic (15%). Two texts (6%) were rated as Level 4 advanced, and the one Level 5 text was classified as basic difficulty within that level.

Table 3
Text Characteristics by Curriculum Level and Difficulty

Curriculum Difficulty	Level 2		Level 3		Level 4		Level 5	
	Number	% of total	Number	% of total	Number	% of total	Number	% of total
Basic	0	–	10	31%	5	15%	1	3%
Proficient	4	12%	3	9%	0	–	0	–
Advanced	3	9%	5	15%	2	6%	0	–
Total	7	21%	18	55%	7	21%	1	3%

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 Print Considerateness

Print Considerateness	Number	% of Total
Considerate Print	33	100%
Non-considerate Print	0	–
Total	33	100%

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

Illustration Considerateness

Considerate illustrations assist readers to comprehend the content of the reading text. Eleven of the 33 reading texts were not applicable to this category, as they had no illustrations. The remaining 22 texts were all characterised as having considerate illustrations (see Table 5).

Table 5
Characteristics of Illustration Considerateness

Illustration Considerateness	Number	% of Total Applicable
Considerateness of Illustration	22	100%
Non-considerateness of Illustration	0	–
Not Applicable	11	
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 range of processes (entertaining, reporting, instructing, arguing or persuading, explaining, and informing) used to produce texts that reflect a purpose and

audience. The purpose of the text, not its form, determines the genre; for example, a letter can explain or argue.

Over a third (36%) of all reading texts were characterised as *reporting* and just over a quarter (27%) as *entertaining* (see Table 6). Of the remaining reading texts, five were characterised as *instructing*, three each as *explaining* and *informing*, and one as *arguing*.

Table 6
Characteristics of Genre (Purpose)

Genre (Purpose)	Number	% of Total
Report	12	36%
Entertain	9	27%
Instruct	5	15%
Explain	3	9%
Inform	3	9%
Argue	1	3%
Total	33	100% ^a

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

^a Percentages appear not to add to 100% due to rounding.

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. Six of the seven essential learning areas were considered applicable to the 33 reading texts. Mathematics was not assigned to any text.

As Table 7 shows, 13 (39%) of the 33 reading texts were characterised as relevant to Language. Eight (24%) were characterised as relevant to Science, six (18%) to Technology, and just two each to Social Sciences, The Arts, and Health.

Table 7
Characteristics of Essential Learning Area

Essential Learning Area	Number	% of Total
Language	13	39%
Science	8	24%
Technology	6	18%
Social Sciences	2	6%
The Arts	2	6%
Health	2	6%
Mathematics	0	–
Total	33	100% ^a

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

^a Percentages appear not to add to 100% due to rounding.

Characteristics of Assessment Items

The characteristics of the 222 assessment items in the second item signature study are presented below. The characteristics of the individual assessment items across all of the categories are given in Appendix Table 13 (in Appendix 4). Items are listed in order of Paper.

SOLO Taxonomy

For the SOLO cognitive processing taxonomy, the largest proportions of the 222 assessment items were characterised as either relational (40%) or unistructural (35%) (see Table 8).

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Multistructural items made up 21% of the total, while just 4% of items were rated as extended abstract. Surface items (i.e., unistructural and multistructural) accounted for over half (56%) of the items and deep items (i.e., relational and extended abstract) made up the balance (44%).

Table 8
Characteristics of Items by SOLO Taxonomy

SOLO Taxonomy	Number	% of Total
Unistructural	77	35%
Multistructural	47	21%
Relational	89	40%
Extended Abstract	9	4%
Total	222	100%

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

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 largest proportions of assessment items were characterised as either *inference* (42%) or *information* (36%) (see Table 9). Around a fifth (22%) were characterised as *interpreting*. *Evaluation* was not assigned to any assessment items.

Table 9
Characteristics of Items by Processes of Comprehension

Processes of Comprehension	Number	% of Total
Information	79	36%
Inference	94	42%
Interpret	49	22%
Evaluation	0	–
Total	222	100%

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

Curriculum Area Processes

There are three curriculum area processes. These require the student to: (a) *explore* how the English language is constructed; (b) *think critically* about language and meaning and develop the skills of literary criticism; and (c) use processes by which *information* is identified, understood, stored, organised, retrieved, combined, and communicated. Over half (55%) of all assessment items were characterised as *processing information*. *Exploring language* was assigned to 29% of the items and *thinking critically* to 16% (see Table 10).

Table 10
Characteristics of Items by Curriculum Area Processes

Curriculum Area Processes	Number	% of Total
Exploring Language	65	29%
Processing Information	122	55%
Thinking Critically	35	16%
Total	222	100%

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

Curriculum Area Objectives

Unlike characteristics for all other categories, Curriculum Area Objectives were not mutually exclusive. Raters assigned as many objectives as they considered relevant to each of the 222 assessment items.

Curriculum Area Objectives comprise deep feature and surface feature objectives. In this item signature study, deep feature Curriculum Area Objectives were grouped under the headings: Find Information; Knowledge; Understanding; Connections; and Inference. Surface feature objectives were grouped under the headings: Grammar; Punctuation; and Spelling.

Of the deep feature objectives that were assigned to the 222 assessment items, four of the five Find Information objectives were used. Five of the six Understanding objectives and all of the six Connections and five Inference objectives were also assigned. However, just one of the six Knowledge objectives (vocabulary) was assigned. All surface feature objectives were assigned to assessment items.

The three objectives most commonly assigned to assessment items were deep feature objectives under the Find Information and Understanding headings. They were: (1b) *find, select, and retrieve information* (Find Information), 55% of items; (1c) *skim/scan for information* (Find Information), 47% of items; and (3d) *use understandings and information gained from texts* (Understanding), 41% of items (see Table 11). A further two deep feature objectives, one pertaining to Understanding – (3a) *consistently read for meaning* – and the other to Inference – (5b) *make inferences from texts* – were assigned to just over a quarter of all assessment items (27% and 26%, respectively). Smaller proportions of assessment items were categorised as (4b) *make links between aspects of text* (Connections), 17% of assessment items; (2b) *Vocabulary* (Knowledge), 14%; and (3b) *identify main ideas in texts* (Understanding), 13%. Other deep feature objectives were assigned to only one to eight items.

Table 11

Curriculum Area Objectives – Deep Features Assigned to Assessment Items

Deep Features				
1 Find Information	2 Knowledge	3 Understanding	4 Connections	5 Inference
(1a) Question to locate and retrieve information (1 item, 0.5%)	(2b) Use and understand vocabulary (31 items, 14%)	(3a) Consistently read for meaning (60 items, 27%)	(4a) Compare similarities and differences both within and between texts (3 items, 1%)	(5a) Explore author's purpose and question author's intention (5 items, 2%)
(1b) Find, select, and retrieve information (121 items, 55%)		(3b) Identify main ideas in texts (29 items, 13%)	(4b) Make links between aspects of text (38 items, 17%)	(5b) Make inferences from texts (58 items, 26%)
(1c) Skim/scan for information (105 items, 47%)		(3c) Provide detail to support main ideas (1 item, 0.5%)	(4c) Make use of prior knowledge (script implicit) (2 items, 1%)	(5c) Read critically a range of texts for bias, stereotyping, and propaganda (1 item, 0.5%)
(1d) Note take in a variety of ways; e.g., using graphic organisers (1 item, 0.5%)		(3d) Use understandings and information gained from texts (91 items, 41%)	(4d) Understand and organise material in appropriate sequences (4 items, 2%)	(5d) Predict possible outcomes (2 items, 1%)
		(3f) Discuss texts and identify aspects; e.g., plot, characters, setting, theme, style (1 item, 0.5%)	(4e) Empathise with characters and situations in texts (3 items, 1%)	(5e) Identify and discuss purposes of text types (1 item, 0.5%)
			(4f) Make links between verbal and visual information (8 items, 4%)	
(4 of 5 objectives)	(1 of 6 objectives)	(5 of 6 objectives)	(6 of 6 objectives)	(5 of 5 objectives)

Note. Figures show the numbers and percentages of the 222 items that were assigned to each objective.

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Objectives were not mutually exclusive.

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

Assignment of the surface feature objectives is shown in Table 12. Objective (6b) *use grammatically correct structures* was assigned to nine percent of the assessment items. Although all surface feature objectives were assigned to at least one item, other surface feature objectives were applied to only one to eight items.

Five of the seven deep feature objectives not assigned to any assessment item were knowledge objectives. Also not assigned were one objective under Find Information and one under Understanding (see Table 13).

Table 12

Curriculum Area Objectives – Surface Features Assigned to Assessment Items

Surface Features		
6 Grammar	7 Punctuation	8 Spelling
(6a) Identify some parts of word classes (2 items, 1%)	(7a) Use appropriately a variety of punctuation conventions: commas, full stops, capital letters, exclamation marks, question marks, quotation marks, brackets (7 items, 3%)	(8a) Spell correctly (8 items, 4%)
(6b) Use grammatically correct structures; e.g., sentences, tense (21 items, 9%)		
(6c) Identify features/characteristics of text types (5 items, 2%)		
(3 of 3 objectives)	(1 of 1 objective)	(1 of 1 objective)

Note. Figures show the numbers and percentages of the 222 items that were assigned to each objective.

Objectives were not mutually exclusive.

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

Table 13

Curriculum Area Objectives Not Assigned to Assessment Items

Deep Features		
Find Information	Knowledge	Understanding
(1e) Use effectively a dictionary, thesaurus, or atlas	(2a) Identify fiction and non-fiction texts (2c) Use and understand poetic and figurative language use (rhyme and metaphor) (2d) Make confident use of semantic (e.g., context or setting), syntactic, visual (e.g., illustrations, diagrams), and grapho-phonetic cues (2e) Use strategies to solve unknown words and gain meaning: anticipate/predict, re-read, self-correct, question, confirm (2f) Use and understand text and publishing conventions	(3e) Question to clarify meaning in texts
(1 of 5 objectives)	(5 of 6 objectives)	(1 of 6 objectives)

Level of Agreement

Agreement on Texts

Agreement on the assigning of text characteristics improved as raters' experience in rating the texts increased. Also, involving the whole group in the iterative process ensured that consensus was reached in most cases, with only one reading text causing difficulty (in assigning Genre (Purpose) to one text. Although there were more discrepancies between ratings assigned by individuals, the resolution and calibration processes resulted in a diminishing number of reading texts on which

raters could not agree. It was clearly evident that assigning Curriculum Level caused the greatest difficulty, followed distantly by Essential Learning Area and Genre (Purpose). (See Table 14.)

Table 14
Number of Texts on which No Agreement was Reached by Rating Condition and Category

Rating Condition	Total Number of Texts	Number of Texts on which No Agreement was Reached on Characteristic						
		Form	Curriculum Level	Purpose (PIRLS)	Text Considerateness	Illustration Considerateness	Genre (Purpose)	Essential Learning Area
Group condition	12	0	0	0	0	0	1	0
Individual condition	21	0	10	2	0	1	3	4
Total	33	0	10	2	0	1	4	4

Note. Agreement was deemed to be reached when there was a two-thirds agreement or better.

Agreement on Assessment Items

When teachers began to rate assessment items in pairs rather than individually, the number of items on which agreement was not reached diminished across all item characteristics (Table 15).

When rating was undertaken individually for Papers 7 and 8, little or no improvement was achieved in the number of assessment items agreed upon from one paper to the next (in fact, agreement on Curriculum Area Processes worsened). However, when rating was undertaken by teachers in pairs, beginning at Paper 9, the number of assessment items on which there was no agreement immediately decreased markedly across all characteristics (see Table 15). In addition, by the time teachers rated Paper 12, their level of agreement had improved to the point where agreement was reached on all assessment items for the SOLO Taxonomy, Curriculum Area Processes, and Curriculum Area Objectives; and there was disagreement on just one item for PIRLS Processes of Comprehension.

Rater dependability. For the 177 assessment items from Papers 8 to 12 where rating was undertaken either individually or in pairs (note the first 45 items from Paper 7 were rated in the whole group condition), the dependability of rater scoring was measured using the Brennan and Kane Dependability Index.

The Brennan and Kane Dependability Index (ϕ) is calculated by obtaining the *between-subjects effects error mean square*, and dividing it by the sum of the *absolute error variance of the set of ratings* and itself:

$$\phi = \sigma_p^2 / (\sigma_p^2 + \sigma_{ABS}^2) \quad (1)$$

Values greater than .80 are considered dependable. In spite of the higher level of disagreement among raters in the individual rating condition (Papers 7 and 8), the dependability of these ratings is quite acceptable ($\phi = .833$ to $.909$) (see Table 16 for full results of dependability calculations). Dependability was, however, slightly improved in the pair rating condition ($\phi = .839$ to $.944$), with ratings for SOLO Taxonomy showing the greatest improvement ($.833$ in the individual condition, to $.918$ with the pairs).

Overall then, all the ratings for SOLO Taxonomy, PIRLS Processes of Comprehension, and Curriculum Area Processes were dependable, as the values for the dependability index exceeded the .80 threshold, for both the individual and the pair rating conditions.

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Table 15

Number of Assessment Items by Paper and Category where No Agreement was Reached

Rating Condition	Total Number of Items	Number of Items on which No Agreement was Reached on Characteristic						
		SOLO Taxonomy	PIRLS Processes of Comprehension		Curriculum Area Processes	Curriculum Area Objectives		
		No. of Items	No. of Items	No. of Items	No. of Items ^a			
Individual condition	38	24	.833	23	.847	9	.909	2
Pair condition	139	6	.918	11	.839	0	.944	1
Total	177	30		34		9		3

Note. Agreement was deemed to be reached when there was a two-thirds agreement or better.

^a Indicates the number of items where there was no objective was agreed on. Curriculum area objectives are not mutually exclusive; therefore the dependability of ratings is not calculated.

Table 16

Calculation of the Brennan and Kane Dependability Index (ϕ) – Results of the Calculations

Rating Condition and Category	No. of Raters	No. of Items	σ^2_i	σ^2_p	$\sigma^2_{pi,e}$	σ^2_{ABS}	
Individual Condition							
Curriculum Area Processes	6	38	3.177	0.884	0.178	0.088	0.909
PIRLS Processes of Comprehension	6	38	2.208	0.368	0.323	0.067	0.847
SOLO Cognitive Processing	6	38	4.225	0.607	0.398	0.122	0.833
Pair Condition							
Curriculum Area Processes	3	139	2.160	0.273	0.106	0.016	0.944
PIRLS Processes of Comprehension	3	139	2.114	0.0918	0.333	0.018	0.839
SOLO Cognitive Processing	3	139	1.893	0.175	0.291	0.016	0.918

Note. Of the total 222 items, 177 were rated either individually (38 items) or in pairs (139 items). The remaining 45 items were rated by the whole group; hence, the dependability of these ratings is not calculated.

Summary of Findings

Rater Characteristics

The key characteristics of teachers taking part in the second item signature workshop were captured via a questionnaire.

Raters were highly experienced, with most having more than 10 years' teaching experience. At the time of the study, they were currently teaching, or had recently taught, within the Year levels for which the assessment materials are being developed. The raters had wide-ranging teaching experience from new entrant to intermediate level. At the time of the study, the raters had senior level responsibility for English curriculum development in their schools and responsibility for literacy leadership, programmes, and assessment in their schools. They had often been involved with literacy projects and/or literacy contracts.

The educational qualifications held by the raters, other than a Diploma of Teaching, were generally at a tertiary Diploma level – e.g., Advanced Diploma of Teaching. Two teachers had undergraduate degrees and two were currently working towards a Masters of Education.

Characteristics of the Reading Texts

- *Print Considerateness and Illustration Considerateness* – All 33 reading texts were rated as being print considerate, and all 22 text that were illustrated were rated as having considerate illustrations.
- *Text Form* – Nearly all (94%) of the 33 texts were classified as continuous (i.e., composed of sentences and organised into paragraphs).
- *Purpose (PIRLS)* – The majority (73%) were classified as requiring the reader to *acquire and use information*, while the remaining 27% provided a *literary experience*.
- *Genre (Purpose)* – Thirty-six percent of the texts had the Genre of *reporting* to the reader, with 27% classified as *entertaining* the reader. Other Genres included *instructing* (15%), *explaining* (9%), *informing* (9%), and *arguing* (1 text).
- *Essential Learning Area* – Many reading texts (40%) focused on the Essential Learning Area of Language. Science and Technology were covered by 24% and 18% of the reading texts respectively. Other areas covered were Social Sciences, the Arts, and Health.
- *Curriculum Level and Difficulty with Curriculum Level* – Over half (55%) of the reading texts were assigned to Level 3 of the curriculum, with 21% each assigned to Levels 2 and 4, and one text (3%) assigned to Level 5. Within their designated curriculum levels, a total of 49% of all reading texts were classified as basic, 21% as proficient, and 30% as advanced. The largest proportion (31%) of the 33 texts were classified as Level 3 basic. Half as many were classified as Level 3 advanced (15%) and as Level 4 basic (15%).

Characteristics of Assessment Items

- *SOLO Taxonomy* – The 222 assessment items largely focused on relational processes (40%), unistructural processes (35%), and multistructural processes (21%).
- *PIRLS Processes of Comprehension* – The largest proportions of the assessment items were characterised as either making *inferences* (42%) or retrieving explicitly stated *information* (36%). Other assessment items covered *interpreting* and *integrating* information (22%).
- *Curriculum Area Processes* – Of the 222 assessment items, 55% were characterised as *processing information*. The process of *exploring language* was assigned to 29% of items and *thinking critically* to 16%.
- *Curriculum Area Objectives* – The objectives (all deep feature objectives) that were most commonly assigned to assessment items were: (1b) *find, select, and retrieve information* (Find

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Information), 55% of items; (1c) *skim/scan for information* (Find Information), 47%; and (3d) *use understandings and information gained from texts* (Understanding), 41%. Also commonly assigned to items were: (3a) *consistently read for meaning* (Understanding), 27% of items; (5b) *make inferences from texts* (Inference), 26%; (4b) *make links between aspects of text* (Connections), 17%; (2b) *Vocabulary* (Knowledge), 14%; and (3b) *identify main ideas in texts* (Understanding), 13%. The one surface feature objective that was most frequently assigned was (6b) *use grammatically correct structures* (Grammar), which was assigned to 9% of the items.

Level of Agreement

The key quality control measure of ongoing monitoring of rater agreement ensured that contentious issues were discussed and clarified. The iterative process of monitoring, ongoing discussion, checking of definitions, and review of previous decisions ensured that the raters were able to reach consensus during the course of the workshop. Thus, agreement resolution by a group of literacy experts, as in the first item signature study, was not necessary.

The results of the assessment item rating suggest that the level of consensus is improved when raters work as pairs. In addition, comments made in the workshop evaluation indicate that the level of teacher satisfaction with the work increased markedly when rating was undertaken with a partner.

Rater scoring measured using the Brennan and Kane Dependability Index showed that, when raters worked in pairs, results were (with one exception) somewhat more dependable. Ratings are dependable enough to use for decision-making because they all exceed the .80 threshold for this index.

Recommendations for Future Studies

It is recommended that future studies incorporate the following features:

- rating is undertaken in pairs;
- group discussion is used as a means to reach consensus;
- rater agreement is monitored throughout the rating work, to ensure that rating issues are dealt with as they arise.

References

- Baker, E. L., Aschbacher, P. R., Niemi, D., & Sato, E. (1992). *CRESST performance assessment models: Assessing content area explanations*. Los Angeles: University of California, National Center for Research on Evaluation, Standards, and Student Testing.
- Biggs, J. B., & Collis, K. F. (1982) *Evaluating the Quality of Learning – The SOLO Taxonomy*. New York: Academic Press
- Burstein, L., Koretz, D., Linn, R., Sugrue, B, Novak, J., Baker, E. L., & Harris, E. L. (1995/1996). Describing performance standards: Validity of the 1992 National Assessment of Educational Progress achievement level descriptors as characterizations of mathematics performance. *Educational Assessment* 3(1), 9–51.
- Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. New York: McKay.
- Campbell, J. R., Kelly, D. L., Mullis, I. V. S., Martin, M. O., & Sainsbury, M. (2001). *Framework and Specifications for PIRLS Assessment 2001*. Chestnut Hill, MA: Boston College, PIRLS International Study Center.
- Glasswell, K., Parr, J., & Aikman, A. (2001). *Development of the asTTle Writing Assessment Scoring Rubrics*. Technical Report 6. University of Auckland, Project asTTle.

- Hattie, J., & Purdie, N. (1998). The SOLO model: Addressing fundamental measurement issues. In B. Dart & G. Boulton-Lewis (Eds.), *Teaching and Learning in Higher Education*. (pp. 145–176). Melbourne, Aus.: ACER.
- Kirsch, I., Mendelovits, J., & McQueen, J. (2000, July). *Assessing reading literacy in an international context: The OECD programme for international student assessment (PISA)*. Paper presented to the International Reading Association 18th World Congress, Auckland, NZ.
- Limbrick, L., Keenan, J., & Girven, A. (2000). *Mapping the English Curriculum*. Technical Report 4. University of Auckland, Project asTTle.
- Ministry of Education. (1993). *New Zealand Curriculum Framework*. Wellington, NZ: Learning Media.
- Ministry of Education. (1994). *English in the New Zealand Curriculum*. Wellington, NZ: Learning Media.
- Ministry of Education. (1996). *Exploring language: A handbook for teachers*. Wellington, NZ: Learning Media.
- NCES. (2001). *The NAEP Reading Achievement Levels*, [World Wide Web]. Available: <http://nces.ed.gov/nationsreportcard/reading/achieve.asp> [2002, 23 January].

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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).
- 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 (Close Reading)

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 and Difficulty within Level

Level 2			
According to the curriculum, students should:			
<ul style="list-style-type: none"> Respond to (i.e., perform answering or corresponding action; show sensitiveness to by behaviour or change; say or do something in reply or as a reaction to): language, meanings, and ideas in different texts. Relate to (i.e., bring into relation, establish relation between; establish a causal connection between): personal experiences. 			
Students make a general link to their own world when responding to the text. Comparisons are simple, literal, and list-like.			
Level 2 students can:			
<ul style="list-style-type: none"> Use cues in text to help understand; but tend to rely on personal experience; Respond or react to messages or text using own experience; Retrieve and locate facts; Recall and retell; Ask questions; Understand word beginnings, endings, and medial sounds (e.g., digraphs, diphthongs, blends, rhymes); Put facts or events into simple beginning, middle, and end sequence; Infer at a simple level – one-step thinking; Use connection between visual and text to get basic understanding of title page, cover, or illustrations; Predict what happens next; Distinguish between fact and fiction. 			
Characteristic	Level 2 Basic	Level 2 Proficient	Level 2 Advanced
Text	<p>The text is written at a simple 8 to 10 reading age. Language of task, question, and text being read should be easy for children at this level.</p> <p>The text <i>Are You My Mother</i> is Level 2 basic.</p> <p>Texts that are less than Level 2: are supported by illustrations; have single-syllable words; have a simple structural order and single-clause sentences; are highly repetitive; and will use the 200 base words plus interest words.</p>	<p>The text, such as a letter, invitation, or narrative, requires reading at the 8 to 10 reading age. The language of the text being read provides some challenge for children at this level.</p> <p>Indicators of a Level 2 proficient text are: blended words; consonant clusters; contractions (e.g., he's); polysyllabic words; sentences with two clauses, compound sentences through either co-ordination or subordination; the use of a variety of sentence beginnings (i.e., not just "I..."), and use of the active voice.</p> <p><i>The Cat in the Hat Comes Back</i> typifies a Level 2 proficient text.</p>	<p>The language of text being read is challenging for children at the 8 to 10 reading age. Basic text forms, such as a letter, invitation, or narrative, are read with ease.</p>

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Student Response	Students refer literally to their own experience. Their responses may appear to be tangential or irrelevant. However, these responses will make sense to the student. Students are focused more on the mechanics of reading.	Reference to student's own experience is explicitly related to the text.	Able to reflect beyond the text. Empathises with character(s) through their own experiences. Students can respond to an overarching theme in text rather than just express a literal relationship to own life.
Task: Deeper Features	Students retrieve verbatim information from the text. Only one step is required to answer the task. Meaning is gained from the text in a literal way (i.e., repeating the text words).	Task requires students to locate information in almost identical words or very close to the prompts in the text. No inference is required to understand terms. Two steps can be handled to answer the task. Can consistently locate verbatim material. Able to handle simple sequencing tasks. Some inferring tasks are handled orally not in writing. May give one part to a two-part question. Retelling of text is still highly dependent on text.	Task requires students to use substitution or synonymy to answer the task. Straightforward inference may be necessary. Three or more steps are required to answer the task. Involvement with one piece of information demonstrated. Able to make simple reorganisation or restructuring of information such as beginning, middle, and end. Able to recognise text purpose, intention, or audience of basic text forms, such as a letter, invitation, or narrative.
Task: Surface Features	Some level of difficulty with spelling frequent common words.	Sentence beginnings and endings handled accurately (i.e., capitals for first word and proper nouns; and final punctuation mark; i.e., full stop or question mark). Other punctuation marks are infrequent.	Reasonably accurate tense usage but not consistent. Accurate spelling of all of the 300 most frequent common words.

<p>Level 3</p> <p>According to the curriculum, students should:</p> <ul style="list-style-type: none"> • Discuss (i.e., examine by argument, debate; talk about so as to reach a decision; talk or write about a topic in detail): language, meanings, and ideas in a range of texts. • Relate understandings to (i.e., bring into relation, establish relation between; establish a causal connection between): personal experiences; and other texts. <p>Discussion involves comparison, classification, and contrast. No longer do students just relate the text to their personal experience, and when links are made, they are much more specific. Students are much more able to interpret and explore text than they were in Level 2.</p> <p>Level 3 students can:</p> <ul style="list-style-type: none"> • Retrieve and reorganise facts and locale; • Recall and retell in own words, and use retelling to predict; • Ask questions; • Use cues in text and own understanding to help understand; • Synthesise and sequence ideas; • Understand word beginnings, endings, and medial sounds (digraphs, diphthongs, blends, rhymes); • Skim, scan, and select key ideas;

<ul style="list-style-type: none"> • Summarise and analyse the message in text, using imagery and syntax; • Use and understand synonyms and antonyms; • Infer and interpret the underlying meaning of a text; • Use opinion based on the text or own understanding; • Use visual language to interpret the title, illustrations, formats; • React to messages and detect author's message; • Answer questions logically; • Compare and contrast messages, ideas, facts; • Explore imagery literally but not at deeper levels; • Employ high level lateral thinking; • Skim factual questions, but infer answers to higher order questions. 			
Characteristic	Level 3 Basic	Level 3 Proficient	Level 3 Advanced
Text	Language of text being read is easy for children at the 10 to 12 reading age.	The text requires reading at the 10 to 12 reading age. Language of text being read provides some challenge for children at this level. At this level, there is increasing diversity of text layout or format including tables, graphic display, and embedded text forms. Indicators of a Level 3 proficient text are: compound and/or complex sentences; sentences with two or more clauses; use of the passive voice; use of the conditional/past perfect tense; the meaning of words has to be inferred from the text not from illustrations. <i>Sneetches</i> typifies a Level 3 proficient text.	Only the best readers within the level can read this text easily or quickly. Language of text being read is challenging for children at this level.
Student Response	Reference to own experience is subsumed to that of the text. Low-level understanding of text is shown.	Inconsistent success with answers still evident. Deeper links to text are made.	Consistency in answering questions correctly is evident. Clear understanding of text themes is shown. Students can retrieve information accurately and consistently.
Task: Deeper Features	High frequency affixation of vocabulary (e.g., negatives – 'un', 'in', 'dis') is recognised and understood. More synonyms are known. Only one step is required to answer the task. Location and verbatim copying of text is required. Students are able to suggest alternative endings. Simple, straightforward	Task requires students to use synonymy or find words with the same meaning. Two steps may be required to answer the task. The student needs to look in more than one place in the text. Reorganisation of information in text is required. Students use text for inference and meaning, and don't just rely on prior vocabulary	Task requires students to use substitution or synonymy or to restate meaning using different words. Two to three steps may be required to answer the task. A statement of reason may be required. Information may have to be transformed, reorganised, or restructured. Students are able to identify the text's purpose,

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	inferences are made. Links between ideas and meanings in text are beginning to be made. Starting to use text cues to make inferences. Able to locate information in graphs and tables.	knowledge. Make links within texts. Students make explicit references to text – for example, for detail or support.	intention, or audience, though not required to offer an explanation or justification.
Task: Surface Features	Able to independently recognise and use speech marks. Complex sentence structures (i.e., one subordinate clause per sentence) used and recognised. Consistent tense use. Has spelling conscience [consciousness?] and awareness.		

Level 4			
According to the curriculum, students should:			
<ul style="list-style-type: none"> • Discuss (i.e., examine by argument, debate; talk about so as to reach a decision; talk or write about a topic in detail): language, meanings, and ideas in a range of texts. The task requires more reasoning about decisions than Level 3 in the form of explicit statements. • Relate understandings to (i.e., bring into relation, establish relation between; establish a causal connection between): experiences, purposes, audiences, and other texts. 			
At Level 4, the author's intention and the purpose of the text are important. Students should be able to determine the audience, intent, or purpose from a relatively long (more than 250-word) prose or poetic text. At this level, students have to infer and construct in their own words what they understand the text's audience, purpose, or intent to be. In addition, students are expected to handle the nature of the language used in the text; that is, the language features, characteristics of text, and the effect of those characteristics. In other words, what are the language features that contribute to a text's meaning?			
At Level 4, texts are longer and more difficult, while the task is subtler and requires inference. Low frequency vocabulary occurs – e.g., "inquisitive" – and there is little or no support in the text. Students are expected to evaluate the qualities of a text.			
Level 4 students can:			
<ul style="list-style-type: none"> • Possess a rich vocabulary including phrases; • Use more adult-like understanding of vocabulary, and general life brought to text by reader; • Paraphrase text; • Evaluate, compare, and contrast messages, ideas, and facts; • Interpret and infer underlying meanings; • Evaluate the merit or worth of author's language (providing one reason for their response); • Identify language techniques and their effects, providing at least one reason for opinion; • Attend to the writer's voice, technique, effect; • Link parts of text to understand text as a whole; • Relate parts of text to each other to answer questions (cross referencing). 			
Characteristic	Level 4 Basic	Level 4 Proficient	Level 4 Advanced
Text	The language of the text being read is easy for children at the 12 to 14 reading age.	The text requires reading at the 12 to 14 reading age. The language of the text being read provides some challenge for	Only the best readers within the level read this text easily or quickly. The language of the text being read is challenging for

		<p>children at this level. Typography of texts is relatively dense (e.g., smaller font, use of multiple columns). These texts will contain embedded texts of a different format or purpose.</p> <p>Indicators of a Level 4 proficient text are: text length (250 words or more); the typography; use of low frequency vocabulary, idioms, and technical terms.</p>	<p>children at this level. Specialised, longer, and inconsiderate (e.g., muddled sequence) texts are understood within time limits.</p>
Student Response	Able to predict kinds of texts that well-known people might enjoy.		
Task: Deeper Features	<p>Recognises low frequency vocabulary and able to generate understanding from word parts and connections in text. Less dependent on context for word knowledge. Able to retell intention of a text in own words relying on key words and exploiting the thematic issues of a text rather than just literal verbatim repetition. Begins to analyse character, plot, and theme of text. Recognise message of text. Close attention to detail paid. Use of text to support ideas. Able to clarify, summarise, and justify opinions.</p>	<p>Low frequency vocabulary or connotations are understood. Abstract generalised inferences are made. Evaluations and decisions are made about the text. Alternatives are developed. Students are able to compare texts written by an author with those written at other times by the same author or those written by different authors, and speculate on reasons for differences (e.g., different audience). Students have to infer and construct in their own words what they understand the text's audience, purpose, or intent to be.</p>	<p>Task requires students to use substitution or synonymy to answer the task. Students are expected to handle the nature of the language used in the text; that is, the language features, characteristics of text, and the effect of those characteristics. In other words, they are expected to understand what language features contribute to a text's meaning.</p>

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Appendix Table 3

Definition of Reading Text Purpose (PIRLS)

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 4

Definition of Reading Text Print Considerateness

Code	Print Considerateness – The level of effectiveness of the text.	
Cons Print	Considerateness of Print	Considerate text that assists readers in Years 5 to 7 to comprehend the content of the text. 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.) 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.
Non-cons Print	Non-considerateness of Print	Non-considerate text that is poorly structured, organised, confusing or lacks in organisational signalling. 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.

Appendix Table 5

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	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.
Non-Cons Illus	Non-considerateness of Illustrations	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.
N/A Cons Illus	Not applicable to considerateness of Illustrations	No illustrations, so illustration considerateness is not applicable.

Appendix Table 6

Definition of Reading Text Genre (Purpose)

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	To inform	To indicate how information may be obtained or located. Navigation devices that enable rapid location of information such as: a table of contents, index, publishing or copyright page, etc.

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Appendix Table 7

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 8

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 9

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	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. Reading tasks that exemplify this type of text processing include: <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	Making inferences allows the reader to move beyond the surface of texts and fill in the “gaps” in meaning that often occur in texts. 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. 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. Reading tasks that exemplify this type of text processing include: <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;

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		<ul style="list-style-type: none"> 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 task.</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 10

Definition of Assessment Item Curriculum Area Objectives

Curriculum Area Objectives – Deep Features	
Find Information	<ul style="list-style-type: none"> (1a) Question to locate and retrieve information. (1b) Find, select, and retrieve information. (1c) Skim/scan for information. (1d) Note take in a variety of ways; e.g., using graphic organisers. (1e) Use effectively a dictionary, thesaurus, or atlas.
Knowledge	<ul style="list-style-type: none"> (2a) Identify fiction and non-fiction texts. (2b) Use and understand vocabulary. (2c) Use and understand poetic and figurative language use (rhyme, metaphor). (2d) Make confident use of semantic (e.g., context or setting), syntactic, visual (e.g., illustrations, diagrams), and grapho-phonetic cues. (2e) Use strategies to solve unknown words and gain meaning: anticipate/predict, re-read, self-correct, question, confirm. (2f) Use and understand text publishing conventions. <p style="text-align: right;">(continues over the page)</p>

Curriculum Area Objectives (continued)	
Understanding	<ul style="list-style-type: none"> • (3a) Consistently read for meaning. • (3b) Identify main ideas in texts. • (3c) Provide detail to support main ideas. • (3d) Use understandings and information gained from texts. • (3e) Question to clarify meaning in texts. • (3f) Discuss texts and identify aspects; e.g., plot, characters, setting, and theme.
Connections	<ul style="list-style-type: none"> • (4a) Compare similarities and differences both within and between texts. • (4b) Make links between aspects of text. • (4c) Make use of prior knowledge (script implicit). • (4d) Understand and organise material in appropriate sequences. • (4e) Empathise with characters and situations in texts. • (4f) Make links between verbal and visual information.
Inference	<ul style="list-style-type: none"> • (5a) Explore author's purpose and question author's intentions. • (5b) Make inferences from texts. • (5c) Read critically a range of texts for bias, stereotyping, and propaganda. • (5d) Predict possible outcomes. • (5e) Identify and discuss purposes of text types.
Curriculum Area Objectives – Surface Features	
Grammar	<ul style="list-style-type: none"> • (6a) Identify some parts of word classes. • (6b) Use grammatically correct structures; e.g., sentences, tense. • (6c) Identify features/characteristics of text types.
Punctuation	<ul style="list-style-type: none"> • (7a) Use appropriately a variety of punctuation conventions: commas, full stops, capital letters, exclamation marks, question marks, quotation marks.
Spelling	<ul style="list-style-type: none"> • (8a) Spell correctly.

Appendix Table 11

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.

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Appendix 3 – Participant Questionnaire: asTTle Item Signature Workshop



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Thank you for participating in this second asTTle Item Signature Workshop. It would help our work if you could take the time to complete this questionnaire. Please return it to the workshop co-ordinator, before leaving the workshop.

The information from this questionnaire will be used to keep us up to date on the teaching and literacy backgrounds, and training and qualifications of teachers taking part in this workshop.

Your responses will be held in complete confidence. No individual person or school will be identifiable in any information reported from this questionnaire.

This questionnaire should take about ten to fifteen minutes to complete.

A: TEACHING BACKGROUND

The following section asks about your teaching background and areas of responsibility in your school.

1. How many years have you been teaching?

(Tick one option)

- a) 0-2 years
- b) 3 – 5 years
- c) 6 – 10 years
- d) more than 10 years

2. What year levels are you currently teaching?

(Tick all that apply)

- a) Years 0 – 1 (new entrants)
- b) Years 2 – 3 (junior school)
- c) Years 4 – 6 (senior school)
- d) Years 7 – 8 (Intermediate)

3. What year levels have you taught previously?

(Tick all that apply)

- a) Years 0 – 1 (new entrants)
- b) Years 2 – 3 (junior school)
- c) Years 4 – 6 (senior school)
- d) Years 7 – 8 (Intermediate)

4. Which of the following curriculum responsibilities do you have (or have you had) in your school? (Tick all that apply)

- a) Curriculum Co-ordinator for whole school
- b) Curriculum team leadership
- c) Curriculum team member
- d) Other *(Please specify)* _____

5. Which curriculum area do your responsibilities cover? (Tick all that apply)

- a) English
- b) Maths
- c) ESOL
- d) Science

- e) Social Studies
- f) Arts/ Music/Drama
- g) Gifted and Talented Education
- h) Special Needs
- i) Physical Education
- j) Other *(Please specify)* _____

6. Which of the following responsibilities do you have for literacy in your school?

- a) Leadership of curriculum team
- b) Programme co-ordination/decisions
- c) Resources/budgeting
- d) Teaching literacy programmes
- e) ESOL
- f) Analysis of literacy assessment
- g) Other *(Please specify)* _____

7. Which of the following responsibilities do you have for assessment in your school?

- a) School leadership for assessment
- b) Assessment for a curriculum area *(Please specify area)* _____
- c) Co-ordination of testing
- d) Analysis of data/scoring
- e) Selection of assessment/testing procedures
- f) Other *(Please specify)* _____

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B: PROJECT/CONTRACT ACTIVITIES

The following section asks about activities, focused on literacy, that you may currently be involved in or have taken part in previously.

8. Which of the following projects or contract, have you been involved in either currently or previously?

- a) Project as TTe workshops
- b) Writing exemplars for the Ministry of Education
- c) Ministry of Education contracts (*specify the contract and your role*) _____

- d) Other projects/ Education contracts (*specify the contract and your role*) _____

9.1 Please identify any qualifications which are literacy focused e.g. BA - English major)

10. Please name any training courses you have undertaken to do with literacy.

E: BACKGROUND INFORMATION

11. Name _____

12. School Name _____

D: TRAINING AND QUALIFICATIONS

The following section asks about your qualifications and other training you may have undertaken.

9. What educational qualifications do you hold?

- a) Advanced Diploma of Teaching
- b) University degree – undergraduate
- c) Papers toward postgraduate degree
- d) Postgraduate degree
- d) Tertiary Diploma (*Please specify*) _____

- e) Certificate (*Please specify*) _____

- f) Other (*Please name below*) _____

THANK YOU FOR COMPLETING THIS
QUESTIONNAIRE

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Appendix 4 – Tables Showing Characteristics of Individual asTTle Reading Texts and Assessment Items

Appendix Table 12

Characteristics of asTTle Reading Texts – Paper A and Papers 7 to 12

Paper	Text Name	Form	PIRLS Purpose	Print Considerateness	Illustration Considerateness	Genre (Purpose)	Essential Learning Area	Curriculum Level & Difficulty
A	Kia Ora Sally	Cont	Literary	Cons	Cons	Entertain	Language	3 Basic
7	Hardest Thing to do	Cont	Literary	Cons	N/A	Entertain	Language	3 Basic
7	How soil is made	Cont	Information	Cons	N/A	Report	Science	3 Prof
7	Collecting Spiders' Webs	Cont	Information	Cons	Cons	Instruct	Arts	3 Basic
7	Races	Cont	Information	Cons	Cons	Instruct	Health	3 Basic
7	Our Cousin Anna	Cont	Literary	Cons	N/A	Entertain	Language	4 Basic
7	Ruru the Morepork	Cont	Information	Cons	Cons	Explain	Soc Sciences	4 Adv
8	Flames vs Stingers	Non cont	Information	Cons	N/A	Inform	Technology	2 Prof
8	Handmade Sweets	Cont	Information	Cons	Cons	Report	Technology	3 Prof
8	Fox and Crow	Cont	Literary	Cons	Cons	Entertain	Language	2 Adv
8	So much to tell you	Cont	Literary	Cons	N/A	Entertain	Language	4 Basic
8	Navigating by the Stars	Cont	Information	Cons	Cons	Explain	Science	4 Basic
9	Seafood	Cont	Literary	Cons	N/A	Entertain	Language	3 Prof
9	Giraffes	Cont	Information	Cons	Cons	Report	Science	2 Adv
9	Excursion Note	Cont	Information	Cons	Cons	Report	Language	3 Basic
9	Ruth Park	Cont	Information	Cons	Cons	Report	Language	3 Adv
9	Remember Me	Cont	Literary	Cons	N/A	Entertain	Language	3 Adv
10	Read the Invitation	Cont	Information	Cons	Cons	Inform	Language	2 Prof
10	Make your own kick ball	Cont	Information	Cons	Cons	Instruct	Technology	3 Basic
10	Bad Breath	Cont	Literary	Cons	Cons	Entertain	Language	2 Adv
10	Sea Survey	Cont	Information	Cons	N/A	Report	Science	4 Basic
10	Where the Dinosaur Roams	Cont	Literary	Cons	Cons	Entertain	Language	4 Adv
11	Alien Mask Voice Changer	Cont	Information	Cons	Cons	Argue	Technology	3 Basic
11	Party Drinks	Cont	Information	Cons	Cons	Instruct	Technology	3 Basic
11	Making an Umu	Cont	Information	Cons	N/A	Report	Soc Sciences	3 Basic
11	Flying Positions	Cont	Information	Cons	Cons	Explain	Health	3 Adv
11	Look but Don't Touch	Cont	Information	Cons	Cons	Report	Science	3 Adv
11	Te Wiata's Exit	Cont	Information	Cons	N/A	Report	Arts	5 Basic

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Characteristics of asTTle Reading Texts continued

12	Library overdue notice	Non cont	Information	Cons	N/A	Inform	Language	2 Prof
12	Birds	Cont	Information	Cons	Cons	Report	Science	3 Basic
12	How to make Pizza	Cont	Information	Cons	Cons	Instruct	Technology	2 Prof
12	Estuaries and Beaches	Cont	Information	Cons	Cons	Report	Science	3 Adv
12	Weta	Cont	Information	Cons	Cons	Report	Science	4 Basic

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

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Appendix Table 13

Characteristics of asTTle Assessment Items – Paper A and Papers 7 to 12

Paper	Text Name & Item Number	SOLO Taxonomy	Processes of Comprehension	Curriculum Area Processes	Curriculum Area Objectives					
					Deep Features					Surface Features
					Find Information	Knowledge	Understanding	Connections	Inference	Grammar/Punctuation/Spelling
A	Kia Ora Sally Item 8	U	Info	PI	1b, 1c					
A	Kia Ora Sally Item 9	U	Info	PI	1b, 1c					
A	Kia Ora Sally Item 10	U	Info	PI	1b, 1c					
A	Kia Ora Sally Item 11	M	Infer	PI	1a, 1b, 1c		3a, 3d	4b		
A	Kia Ora Sally Item 12	M	Info	PI	1b, 1c		3a			
A	Kia Ora Sally Item 13	R	Interp	EL	1b, 1c		3a	4a	5b	7a
7	The Hardest Thing Item 5	R	Interp	TC			3a, 3d		5b	
7	The Hardest Thing Item 6	EA	Interp	TC		2b	3a, 3b, 3d	4b, 4e	5b	
7	The Hardest Thing Item 7	EA	Interp	TC	1c		3b, 3d	4e	5a, 5b, 5d	
7	The Hardest Thing Item 8	R	Interp	TC			3a, 3b, 3d	4e	5b	
7	The Hardest Thing Item 9	M	Infer	PI	1b, 1c		3b	4b		
7	The Hardest Thing Item 10	R	Interp	PI			3d	4b, 4c	5d	
7	How soil is made Item 11	U	Infer	EL						6b
7	How soil is made Item 12	U	Infer	EL						6b
7	How soil is made Item 13	U	Infer	EL						6b
7	How soil is made Item 14	U	Infer	EL						6b
7	How soil is made Item 15	U	Infer	EL						6b
7	How soil is made Item 16	U	Infer	EL						6b
7	Collecting spiders' webs Item 17	U	Info	PI	1b, 1c					
7	Collecting spiders' webs Item 18	U	Info	PI	1b, 1c					
7	Collecting spiders' webs Item 19	M	Info	PI	1b, 1c					
7	Collecting spiders' webs Item 20	U	Info	PI	1b, 1c					
7	Collecting spiders' webs Item 21	R	Interp	TC			3b, 3d		5b	
7	Collecting spiders' webs Item 22	M	Info	PI	1b, 1c					

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Characteristics of asTTle Assessment Items (continued)

7	Collecting spiders' webs Item 23	R	Interp	PI	1b, 1c		3a		
7	Races Item 24	M	Info	PI	1b, 1c				
7	Races Item 25	U	Info	PI	1b, 1c				
7	Races Item 26	U	Infer	PI	1b, 1c		3a		
7	Races Item 27	R	Interp	EL			3f		6c
7	Races Item 28	U	Info	PI	1b, 1c				
7	Races Item 29	U	Info	PI	1b, 1c				
7	Our cousin Anna Item 35	R	Infer	PI	1b			5c	
7	Our cousin Anna Item 36	R	Interp	TC			3d	5b	
7	Our cousin Anna Item 37	M	Info	PI	1b		3d		
7	Our cousin Anna Item 38	R	Infer	EL				5b	7a
7	Our cousin Anna Item 39	R	Infer	PI			3d	5b	
7	Our cousin Anna Item 40	EA	Interp	TC			3b, 3d	5a, 5b	
7	Ruru the Morepork Item 41	R	Infer	EL	1b, 1c	2b	3a	4b	
7	Ruru the Morepork Item 42	U	Info	PI	1b, 1c				
7	Ruru the Morepork Item 43	U	Info	PI	1b, 1c				
7	Ruru the Morepork Item 44	M	Infer	PI	1b, 1c			5b	
7	Ruru the Morepork Item 45	R	Interp	EL					7a
7	Ruru the Morepork Item 46	M	Infer	EL					6b
7	Ruru the Morepork Item 47	M	Infer	EL					6a
7	Ruru the Morepork Item 48	EA	Interp	EL			3d	4a	
8	Flames vs Stingers Item 1	U	Info	PI	1b				
8	Flames vs Stingers Item 2	U	Info	PI	1b, 1c				
8	Flames vs Stingers Item 3	U	Info	PI	1b, 1c				
8	Flames vs Stingers Item 4	U	Info	PI	1b, 1c				
8	Shade the bubble Item 5	U	Infer	EL			3a		6b
8	Shade the bubble Item 6	U	Infer	EL			3a		6b
8	Shade the bubble Item 7	U	Infer	EL			3a		6b
8	Shade the bubble Item 8	U	Infer	EL			3a		6b
8	Which word is missing Item 9	M	Info	EL				4c	
8	Handmade sweets Item 16	U	Info	PI	1b, 1c				
8	Handmade sweets Item 17	M	Info	PI	1b, 1c				
8	Handmade sweets Item 18	U	Info	PI	1b, 1c				
8	Handmade sweets Item 19	M	Info	PI	1b, 1c				
8	Handmade sweets Item 20	M	Info	PI	1b, 1c				
8	The Fox and the Crow Item 21	U	Info	PI	1b, 1c				

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Characteristics of asTTle Assessment Items (continued)

8	The Fox and the Crow Item 22	R	Infer	TC			3b, 3d		5b
8	The Fox and the Crow Item 23	R	Interp	EL			3b, 3d		
8	The Fox and the Crow Item 24	R	Interp	EL			3d		5b
8	The Fox and the Crow Item 25	M	Infer	PI	1c		3d		5b
8	The Fox and the Crow Item 26	M	Info	PI			3b, 3d	4b	
8	The Fox and the Crow Item 27	R	Infer	TC			3b, 3d		5b
8	The Fox and the Crow Item 28	R	Infer	TC			3b, 3d		5b
8	The Fox and the Crow Item 29	R	Infer	TC			3b, 3d		5b
8	The Fox and the Crow Item 30	U	Interp	TC			3b, 3d		5b
8	So much to tell you Item 36	M	Info	PI	1b, 1c				
8	So much to tell you Item 37	R	Interp	EL					7a
8	So much to tell you Item 38	R	Infer	PI	1d		3d		
8	So much to tell you Item 39	EA	Interp	TC			3a, 3d		5b
8	So much to tell you Item 40	R	Infer	EL		2b			
8	So much to tell you Item 41	EA	Interp	TC			3d		
8	So much to tell you Item 42	R	Infer	TC		2b	3d	4b	5b
8	So much to tell you Item 43	R	Interp	EL					6c
8	Navigating by the Stars Item 44	R	Infer	PI	1b, 1c				
8	Navigating by the Stars Item 45	M	Infer	PI	1b, 1c				
8	Navigating by the Stars Item 46	U	Info	PI	1b, 1c				
8	Navigating by the Stars Item 47	R	Infer	PI	1b		3a, 3d	4b	
8	Navigating by the Stars Item 48	R	Infer	TC			3d		5b

8	Navigating by the Stars Item 49	R	Interp	TC				4b, 4f	
9	Seafood Item 5	R	Interp	TC			3a, 3b, 3d		5b
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Characteristics of asTTle Assessment Items (continued)									
9	Seafood Item 6	R	Interp	EL		2b	3a, 3d		5b
9	Seafood Item 7	M	Infer	PI	1b, 1c		3d		
9	Seafood Item 8	EA	Interp	TC			3d		5b
9	Seafood Item 9	R	Infer	EL	1b				6a
9	Giraffes Item 10	M	Infer	PI	1b, 1c		3a, 3b		
9	Giraffes Item 11	M	Infer	PI	1b, 1c		3b	4b	
9	Giraffes Item 12	M	Infer	PI	1b, 1c		3a, 3d		
9	Giraffes Item 13	M	Interp	PI	1b, 1c			4f	
9	Write five of the words Item 14	U	Infer	EL		2b			6b
9	Write five of the words Item 15	U	Infer	EL		2b			6b
9	Write five of the words Item 16	U	Infer	EL		2b			6b
9	Write five of the words Item 17	U	Infer	EL		2b			6b
9	Write five of the words Item 18	U	Infer	EL		2b			6b
9	Excursion note Item 25	U	Info	PI	1b, 1c				
9	Excursion note Item 26	U	Info	PI	1b, 1c				
9	Excursion note Item 27	M	Info	PI	1b, 1c				
9	Excursion note Item 28	U	Info	PI	1b				
9	Excursion note Item 29	R	Interp	EL				4f	6c
9	Excursion note Item 30	R	Interp	EL					6c
9	Ruth Park Item 31	U	Info	PI	1b				
9	Ruth Park Item 32	R	Infer	PI	1b		3a, 3d	4b	
9	Ruth Park Item 33	U	Info	PI	1b, 1c				
9	Ruth Park Item 34	U	Info	PI	1b, 1c				
9	Ruth Park Item 35	U	Info	PI	1b, 1c				
9	Ruth Park Item 36	R	Infer	EL		2b	3a, 3d		5b
9	Ruth Park Item 37	R	Interp	TC			3a, 3b, 3d		5a
9	Ruth Park Item 38	M	Infer	PI	1b, 1c		3d		
9	Ruth Park Item 39	R	Infer	EL		2b	3a, 3d		5b
9	Ruth Park Item 40	R	Interp	EL		2b	3a, 3d		5b
9	Remember Me Item 41	R	Infer	PI			3a, 3d	4b	5b
9	Remember Me Item 42	M	Info	PI	1b, 1c		3d		

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9	Remember Me Item 43	R	Infer	EL	1b		3a, 3d		5b
9	Remember Me Item 44	R	Interp	TC			3a, 3b, 3d	4b	5b
9	Remember Me Item 45	M	Info	PI	1b, 1c		3a, 3d	4b	
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Characteristics of asTTle Assessment Items (continued)									
9	Remember Me Item 46	R	Infer	PI	1b		3d	4b	5b
9	Remember Me Item 47	M	Infer	EL		2b			7a
10	Read the invitation Item 5	U	Info	PI	1b, 1c				
10	Read the invitation Item 6	U	Info	PI	1b				
10	Read the invitation Item 7	R	Infer	PI	1b, 1c		3d		5b
10	Read the invitation Item 8	M	Info	PI	1b, 1c				
10	Correct the spelling Item 9	U	Infer	EL					8a
10	Correct the spelling Item 10	U	Infer	EL					8a
10	Correct the spelling Item 11	U	Infer	EL					8a
10	Correct the spelling Item 12	U	Infer	EL					8a
10	Correct the spelling Item 13	U	Infer	EL					8a
10	Correct the spelling Item 14	U	Infer	EL					8a
10	Correct the spelling Item 15	U	Infer	EL					8a
10	Correct the spelling Item 16	U	Infer	EL					8a
10	Make your own kick ball Item 17	M	Interp	PI	1b, 1c		3a, 3d	4b	
10	Make your own kick ball Item 18	R	Interp	PI	1b, 1c		3a, 3d	4b	5b
10	Make your own kick ball Item 19	R	Info	PI	1b, 1c		3d		
10	Make your own kick ball Item 20	R	Infer	EL		2b	3d		5b
10	Make your own kick ball Item 21	U	Infer	PI	1b, 1c		3d		5b
10	Make your own kick ball Item 22	R	Infer	PI	1b, 1c		3d	4b	5b
10	Bad Breath Item 23	M	Info	PI	1b, 1c				
10	Bad Breath Item 24	U	Info	PI	1b, 1c				
10	Bad breath Item 25	R	Infer	EL		2b	3a, 3d		5b
10	Bad Breath Item 26	R	Infer	TC			3a, 3d	4b	5b
10	Bad Breath Item 27	R	Infer	PI	1b, 1c		3a, 3d		
10	Bad Breath Item 28	M	Info	PI	1b, 1c		3b	4d	
10	Sea Survey Item 34	R	Infer	PI	1b, 1c		3a, 3d	4b	5b
10	Sea Survey Item 35	M	Infer	PI	1b, 1c		3d		5b

10	Sea Survey Item 36	M	Interp	PI			3d	4b
10	Sea Survey Item 37	R	Interp	TC		2b	3a, 3d	4b
10	Where the Dinosaur Roams Item 38	M	Info	PI	1b, 1c			

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Characteristics of asTTle Assessment Items (continued)

10	Where the Dinosaur Roams Item 39	U	Infer	EL					6c
10	Where the Dinosaur Roams Item 40	U	Info	PI	1b, 1c				
10	Where the Dinosaur Roams Item 41	M	Info	PI	1b, 1c				
10	Where the Dinosaur Roams Item 42	R	Infer	EL		2b			5b
10	Where the Dinosaur Roams Item 43	R	Infer	PI	1b, 1c		3a, 3d	4b	
11	Alien Mask Voice Changer Item 1	U	Info	PI	1b, 1c				
11	Alien Mask Voice Changer Item 2	U	Info	PI	1b, 1c				
11	Alien Mask Voice Changer Item 3	R	Infer	EL		2b	3a, 3d		5b
11	Alien Mask Voice Changer Item 4	R	Interp	TC			3a, 3b, 3d	4b	
11	Alien Mask Voice Changer Item 5	R	Infer	EL		2b		4b	5b
11	Party Drinks Item 12	R	Info	PI	1b, 1c				5b
11	Party Drinks Item 13	U	Info	PI	1b				
11	Party Drinks Item 14	U	Info	PI	1b, 1c				
11	Party Drinks Item 15	U	Info	PI	1b, 1c				
11	Party Drinks Item 16	M	Info	PI	1b, 1c			4b	
11	Party Drinks Item 17	R	Infer	EL		2b	3d		
11	Party Drinks Item 18	R	Interp	TC			3b, 3d	4b	
11	Making an Umu Item 19	U	Info	PI	1b, 1c				
11	Making an Umu Item 20	M	Info	PI	1b, 1c			4b	
11	Making an Umu Item 21	M	Info	PI	1b, 1c			4d	5b
11	Making an Umu Item 22	M	Info	PI	1b, 1c				
11	Flying Positions Item 23	M	Info	PI	1b, 1c				
11	Flying Positions Item 24	R	Infer	PI	1b		3a, 3d		5b
11	Flying Positions Item 25	R	Infer	EL	1b	2b	3a, 3d		

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11	Flying Positions Item 26	R	Interp	EL						7a
11	Flying Positions Item 27	R	Interp	PI		3d	4b, 4f	5b		
11	Flying Positions Item 28	R	Interp	TC		3b, 3d	4b			
11	Look but don't touch Item 29	R	Infer	PI	1b, 1c					
11	Look but don't touch Item 30	R	Infer	PI	1b, 1c	3a, 3d	4b			
										(continued next page)
Characteristics of asTTle Assessment Items (continued)										
11	Look but don't touch Item 31	R	Interp	TC		3a, 3b, 3d	4b			
11	Look but don't touch Item 32	M	Info	PI	1b, 1c					
11	Look but don't touch Item 33	U	Info	PI	1b, 1c		4f			
11	Look but don't touch Item 34	R	Interp	TC		3b, 3d	4b			
11	Te Wiata's Exit Item 35	R	Info	PI	1b, 1c	3d	4d			
11	Te Wiata's Exit Item 36	U	Info	PI	1b, 1c					
11	Te Wiata's Exit Item 37	R	Infer	EL		2b	3a, 3d		5b	
11	Te Wiata's Exit Item 38	R	Infer	EL		2b	3a, 3d	4b	5b	
11	Te Wiata's Exit Item 39	R	Interp	EL		2b	3a, 3d	4c		
11	Te Wiata's Exit Item 40	EA	Interp	TC		3a, 3b, 3c	4a, 4b, 4c			
11	Te Wiata's Exit Item 41	R	Interp	TC	1b	3a, 3b, 3d	4b		5b	
11	Te Wiata's Exit Item 42	R	Interp	TC		3b, 3d	4b		5a	
12	Library overdue notice Item 5	U	Info	PI	1b, 1c					
12	Library overdue notice Item 6	U	Info	PI	1b, 1c					
12	Library overdue notice Item 7	M	Info	PI	1b, 1c					
12	Library overdue notice Item 8	M	Info	PI	1b, 1c					
12	Shade as many bubbles Item 9	M	Infer	EL						7a
12	Choose four of the words Item 10	U	Infer	EL		2b				6b
12	Choose four of the words Item 11	U	Infer	EL		2b				6b
12	Choose four of the words Item 12	U	Infer	EL		2b				6b
12	Choose four of the words Item 13	U	Infer	EL		2b				6b
12	Birds Item 14	U	Info	PI	1b, 1c					
12	Birds Item 15	R	Infer	PI	1b, 1c	3a, 3d		5b		
12	Birds Item 16	R	Interp	PI		3a, 3d				6b
12	Birds Item 17	U	Info	PI	1b, 1c					
12	Birds Item 18	R	Infer	EL		2b	3a, 3d		5b	
12	How to make pizza Item 19	R	Infer	PI	1b	3a, 3b, 3d				

12	How to make pizza	Item 20	R	Interp	PI	1b	3a, 3d	4b, 4f	
12	How to make pizza	Item 21	R	Infer	PI	1b, 1c	3a, 3d	4d	
12	How to make pizza	Item 22	R	Info	PI	1b, 1c	3a, 3d	4d	
12	How to make pizza	Item 23	R	Infer	TC	1b, 1c	3a, 3d		5b
12	How to make pizza	Item 24	R	Infer	PI	1b, 1c	3a, 3d	4f	5b
12	How to make pizza	Item 25	R	Infer	PI	1b	3d		5b

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Characteristics of asTTle Assessment Items (continued)

12	Estuaries and Beaches	Item 26	U	Info	PI	1b, 1c			
12	Estuaries and Beaches	Item 27	M	Info	PI	1b, 1c			
12	Estuaries and Beaches	Item 28	M	Info	PI	1b, 1c			
12	Estuaries and Beaches	Item 29	EA	Interp	TC		3b, 3d		5a
12	Weta	Item 30	U	Info	PI	1b, 1c			
12	Weta	Item 31	U	Info	PI	1b, 1c			
12	Weta	Item 32	R	Infer	PI	1b, 1c	3a, 3d		5b
12	Weta	Item 33	R	Infer	EL	1b, 1c	3a, 3d		5b
12	Weta	Item 34	R	Infer	TC		3a, 3d	2b	5b
12	Weta	Item 35	U	Info	PI	1b, 1c			
12	Weta	Item 36	R	Interp	TC		3a, 3d	4f	5e

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