REPORT

Alignment Analysis of Mathematics Learning goals and Assessments

Illinois

Grades 3-8

Norman L. Webb

October 28, 2006

REPORT

Alignment Analysis of Mathematics Learning goals and Assessments

Illinois
Grades 3-8

Norman L. Webb

October 28, 2006

Acknowledgements

Reviewers

Rob Ely (Group Leader), Mathematics Education Graduate Student, Univ of WI-Madison
Lynn Raith, Pittsburgh Public Schools Mathematics Surpervisor, Retired, PA
Leslie Knicl, Grades 6-12 Math Coordinator, Champaign, IL
Mary Modene, Grade K-6 Math Facilitator, St. Clair, IL
Breida Roach, K-12 Math Coordinator, Decatur Public Schools, IL

The State of Illinois and the Illinois State Board of Education funded this analysis. Rebecca McCabe, Division Administrator, and Megan Forness, Principal Consultant for Mathematics of the Student Assessment Division were the main contact people for the Illinois State Board of Education and oversaw the coordination of the study.

Table of Contents

Executive Summary iii

Introduction 1

Alignment Criteria Used for This Analysis 2
- Categorical Concurrence 3
- Depth-of-Knowledge Consistency 3
- Range-of-Knowledge Correspondence 5
- Balance of Representation 6
- Source of Challenge 6

Findings 7
- Learning goals 7
- Alignment of Curriculum Learning goals and Assessments 8
- Source of Challenge Issue Comments 12
- Reviewers' Comments 12
- Reliability Among Reviewers 13

Summary 13

References 14

Appendix A
Group Consensus Values for Illinois Mathematics Learning goals and Objectives

Appendix B
Data Analysis Tables Illinois Grades 3-8 Mathematics

Appendix C
Reviewers' Notes and Source of Challenge Comments

Appendix D
Debrief Summary Notes

Executive Summary

This is a report of the results of a three-day Alignment Analysis Institute conducted September 27-29, 2006 in Springfield, Illinois. Five people, including mathematics content experts, district mathematics supervisors, and mathematics teachers, met to analyze the agreement between the state's mathematics learning goals and assessments for Grades 3-8. Three of the reviewers were from Illinois and two, including the group leader, were from other states.

This analysis indicates that the alignment is quite good. For Grades 3, 5, 6, and 7, all of the alignment criteria are fully satisfied when item weighting is taken into account. Grade 4 has a minor Balance weakness with respect to Goal 10. Grade 8 has a minor DOK weakness for Goal 10 and a Balance weakness for Goal 7. The most important alignment weakness is with respect to Source-of-Challenge issues for Grades 7 and 8. Three items for each of these grades were found to differentially report student knowledge based on the type of calculators students used on the assessments. All of the alignment weaknesses could be fully addressed by replacing a total of nine items across the six grades. It is the finding of this alignment institute that the alignment between the Illinois mathematics learning goals and assessments for Grades 3-8 is acceptable.

Alignment Analysis of Mathematics Learning goals and Assessments

Illinois
Grades 3-8

Norman L. Webb

Introduction

The alignment of expectations for student learning with assessments for measuring students' attainment of these expectations is an essential attribute for an effective learning goals-based education system. Alignment is defined as the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide an education system toward students learning what they are expected to know and do. As such, alignment is a quality of the relationship between expectations and assessments and not an attribute of any one of these two system components. Alignment describes the match between expectations and assessment that can be legitimately improved by changing either student expectations or the assessments. As a relationship between two or more system components, alignment is determined by using the multiple criteria described in detail in a National Institute of Science Education (NISE) research monograph, *Criteria for Alignment of Expectations and Assessments in Mathematics and Science Education* (Webb, 1997).

A three-day Alignment Analysis Institute was conducted September 27-29, 2006 in Springfield, Illinois. Five people, including mathematics content experts, district mathematics supervisors, and mathematics teachers, met to analyze the agreement between the state's mathematics learning goals and assessments for Grades 3-8. Three of the reviewers were from Illinois and two, including the group leader, were from other states.

The State of Illinois uses the terminology of *learning goals, learning goals, and performance indicators* in their mathematics content expectations. The state had five mathematics learning goals (example: *Number Sense*—Demonstrate and apply a knowledge and sense of numbers, including numeration and operations, patterns, ratios and proportions.). Each of these learning goals was further described using three or four learning goals. For this analysis some of the learning goals were combined. Under the learning learning goals were performance indicators (or sometimes referred to as objectives) with 3 to 11 of these for each learning goal. For this analysis, data was coded using the performance indicators (objectives) and reported by the five learning goals. The goals, learning goals, and performance indicators (objectives) are reproduced in Appendix A.

Reviewers were trained to identify the depth-of-knowledge of objectives and assessment items. This training included reviewing the definitions of the four depth-of-knowledge (DOK) levels and then reviewing examples of each. Then for each grade, the

reviewers participated in 1) a consensus process to determine the depth-of-knowledge levels of the objectives and 2) individual analyses of the assessment items.

To derive the results from the analysis, the reviewers' responses are averaged. Any variance among reviewers is considered legitimate, with the true depth-of-knowledge level for the item falling somewhere in between the two or more assigned values. Such variation could signify a lack of clarity in how the objectives were written, the robustness of an item that can legitimately correspond to more than one objective, and/or a depth of knowledge that falls in between two of the four defined levels. Reviewers were allowed to identify one assessment item as corresponding to up to three objectives—one primary hit (objective) and up to two secondary hits. However, reviewers could only code one depth-of-knowledge level to each assessment item even if the item corresponded to more than one objective. Finally, in addition to learning the process, reviewers were asked to provide suggestions for improving the process.

Reviewers were instructed to focus primarily on the alignment between the state learning goals and assessments. However, they were encouraged to offer their opinion on the quality of the learning goals, or of the assessment activities/items, by writing a note about the item. Reviewers could also indicate whether there was a source-of-challenge issue with the item—i.e., a problem with the item that might cause the student who knows the material to give a wrong answer, or enable someone who does not have the knowledge being tested to answer the item correctly. For example, a mathematics item that involves an excessive amount of reading may represent a source-of-challenge issue because the skill required to answer is more a reading skill than a mathematics skill.

The results produced from the institute pertain only to the issue of agreement between the Illinois state goals and the state assessment instruments. Note that this alignment analysis does not serve as external verification of the general quality of the state's goals or assessments. Rather, only the degree of alignment is discussed in these results. For these results, the averages of the reviewers' coding were used to determine whether the alignment criteria were met.

This report describes the results of an alignment study of learning goals and grade- level operational tests in mathematics for grades 3-8 in Illinois. The study addressed specific criteria related to the content agreement between the state learning goals and grade-level assessments. Four criteria received major attention: categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence, and balance of representation.

Alignment Criteria Used for This Analysis

This analysis judged the alignment between the learning goals and the assessments on the basis of four criteria. Information is also reported on the quality of items by identifying items with Sources-of-Challenge and other issues. For each

alignment criterion, an acceptable level was defined by what would be required to assure that a student had met the learning goals.

Categorical Concurrence

An important aspect of alignment between learning goals and assessments is whether both address the same content categories. The categorical-concurrence criterion provides a very general indication of alignment if both documents incorporate the same content. *The criterion of categorical concurrence between learning goals and assessments is met if the same or consistent categories of content appear in both documents.* This criterion was judged by determining whether the assessment included items measuring content from each learning goal. The analysis assumed that the assessment had to have at least six items for measuring content from a learning goal in order for an acceptable level of categorical concurrence to exist between the learning goal and the assessment. The number of items, six, is based on estimating the number of items that could produce a reasonably reliable subscale for estimating students' mastery of content on that subscale. Of course, many factors have to be considered in determining what a reasonable number is, including the reliability of the subscale, the mean score, and cutoff score for determining mastery. Using a procedure developed by Subkoviak (1988) and assuming that the cutoff score is the mean and that the reliability of one item is .1, it was estimated that six items would produce an agreement coefficient of at least .63. This indicates that about 63% of the group would be consistently classified as masters or nonmasters if two equivalent test administrations were employed. The agreement coefficient would increase if the cutoff score is increased to one standard deviation from the mean to .77 and, with a cutoff score of 1.5 standard deviations from the mean, to .88. Usually states do not report student results by learning goals or require students to achieve a specified cutoff score on subscales related to a learning goal. If a state did do this, then the state would seek a higher agreement coefficient than .63. Six items were assumed as a minimum for an assessment measuring content knowledge related to a learning goal, and as a basis for making some decisions about students' knowledge of that learning goal. If the mean for six items is 3 and one standard deviation is one item, then a cutoff score set at 4 would produce an agreement coefficient of .77. Any fewer items with a mean of one-half of the items would require a cutoff that would only allow a student to miss one item. This would be a very stringent requirement, considering a reasonable standard error of measurement on the subscale.

Depth-of-Knowledge Consistency

Learning goals and assessments can be aligned not only on the category of content covered by each, but also on the basis of the complexity of knowledge required by each. *Depth-of-knowledge consistency between learning goals and assessment indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the learning goals.* For consistency to exist between the assessment and the learning goal, as judged in this analysis, at least 50% of the items corresponding to a learning goal had to be at or above the level of knowledge of the learning goal: 50%, a conservative cutoff point, is based on

the assumption that a minimal passing score for any one learning goal of 50% or higher would require the student to successfully answer at least some items at or above the depth-of-knowledge level of the corresponding learning goal. For example, assume an assessment included six items related to one learning goal and students were required to answer correctly four of those items to be judged proficient—i.e., 67% of the items. If three, 50%, of the six items were at or above the depth-of-knowledge level of the corresponding learning goals, then for a student to achieve a proficient score would require the student to answer correctly at least one item at or above the depth-of-knowledge level of one learning goal. Some leeway was used in this analysis on this criterion. If a learning goal had between 40% and 50% of items at or above the depth-of-knowledge levels of the learning goals, then it was reported that the criterion was "weakly" met.

Interpreting and assigning depth-of-knowledge levels to both objectives within learning goals and assessment items is an essential requirement of alignment analysis. These descriptions help to clarify what the different levels represent in mathematics:

Level 1 (Recall) includes the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple algorithm or applying a formula. That is, in Mathematics a one-step, well defined, and straight algorithmic procedure should be included at this lowest level. Other key words that signify a Level 1 include "identify," "recall," "recognize," "use," and "measure." Verbs such as "describe" and "explain" could be classified at different levels, depending on what is to be described and explained.

Level 2 (Skill/Concept) includes the engagement of some mental processing beyond a habitual response. A Level 2 assessment item requires students to make some decisions as to how to approach the problem or activity, whereas Level 1 requires students to demonstrate a rote response, perform a well-known algorithm, follow a set procedure (like a recipe), or perform a clearly defined series of steps. Keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data," and "compare data." These actions imply more than one step. For example, to compare data requires first identifying characteristics of the objects or phenomenon and then grouping or ordering the objects. Some action verbs, such as "explain," "describe," or "interpret," could be classified at different levels depending on the object of the action. For example, interpreting information from a simple graph, or requiring mathematics information from the graph, also is at Level 2. Interpreting information from a complex graph that requires some decisions on what features of the graph need to be considered and how information from the graph can be aggregated is at Level 3. Level 2 activities are not limited solely to number skills, but can involve visualization skills and probability skills. Other Level 2 activities include noticing and describing non-trivial patterns; explaining the purpose and use of experimental procedures; carrying out experimental procedures; making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts.

Level 3 (Strategic Thinking) requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. In most instances, requiring students to explain their thinking is at Level 3. Activities that require students to make conjectures are also at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. An activity, however, that has more than one possible answer and requires students to justify the response they give would most likely be at Level 3. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and using concepts to solve problems.

Level 4 (Extended Thinking) requires complex reasoning, planning, developing, and thinking most likely over an extended period of time. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as Level 2. However, if the student is to conduct a river study that requires taking into consideration a number of variables, this would be at Level 4. At Level 4, the cognitive demands of the task should be high and the work should be very complex. Students should be required to make several connections—relate ideas *within* the content area or *among* content areas—and to select one approach among many alternatives on how the situation should be solved, in order to be at this highest level. Level 4 activities include developing and proving conjectures; designing and conducting experiments; making connections between a finding and related concepts and phenomena; combining and synthesizing ideas into new concepts; and critiquing experimental designs.

Range-of-Knowledge Correspondence

For learning goals and assessments to be aligned, the breadth of knowledge required on both should be comparable. *The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a learning goal is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the assessment items/activities.* The criterion for correspondence between span of knowledge for a learning goal and an assessment considers the number of objectives within the learning goal with one related assessment item/activity. Fifty percent of the objectives for a learning goal had to have at least one related assessment item in order for the alignment on this criterion to be judged acceptable. This level is based on the assumption that students' knowledge should be tested on content from over half of the domain of knowledge for a learning goal. This assumes that each objective for a learning goal should be given equal weight. Depending on the balance in the distribution of items and the need to have a low number of items related to any one objective, the requirement that assessment items need to be related to more than 50% of the objectives for an learning goal increases the likelihood that students will have to demonstrate knowledge on more than one objective per learning goal to achieve a

minimal passing score. As with the other criteria, a state may choose to make the acceptable level on this criterion more rigorous by requiring an assessment to include items related to a greater number of the objectives. However, any restriction on the number of items included on the test will place an upper limit on the number of objectives that can be assessed. Range-of-knowledge correspondence is more difficult to attain if the content expectations are partitioned among a greater number of learning goals and a large number of objectives. If 50% or more of the objectives for a learning goal had a corresponding assessment item, then the Range-of-knowledge correspondence criterion was met. If between 40% and 50% of the objectives for a learning goal had a corresponding assessment item, the criterion was "weakly" met.

Balance of Representation

In addition to comparable depth and breadth of knowledge, aligned learning goals and assessments require that knowledge be distributed equally in both. The range-of-knowledge criterion only considers the number of objectives within a learning goal hit (an objective with a corresponding item); it does not take into consideration how the hits (or assessment items/activities) are distributed among these objectives. *The balance-of-representation criterion is used to indicate the degree to which one objective is given more emphasis on the assessment than another.* An index is used to judge the distribution of assessment items. This index only considers the objectives for a learning goal that have at least one hit—i.e., one related assessment item per objective. The index is computed by considering the difference in the proportion of objectives and the proportion of hits assigned to the objective. An index value of 1 signifies perfect balance and is obtained if the hits (corresponding items) related to a learning goal are equally distributed among the objectives for the given learning goal. Index values that approach 0 signify that a large proportion of the hits are on only one or two of all of the objectives hit. Depending on the number of objectives and the number of hits, a unimodal distribution (most items related to one objective and only one item related to each of the remaining objectives) has an index value of less than .5. A bimodal distribution has an index value of around .55 or .6. Index values of .7 or higher indicate that items/activities are distributed among all of the objectives at least to some degree (e.g., every objective has at least two items) and is used as the acceptable level on this criterion. Index values between .6 and .7 indicate the balance-of-representation criterion has only been "weakly" met.

Source-of-Challenge Criterion

The Source-of-Challenge criterion is only used to identify items on which the major cognitive demand is inadvertently placed and is other than the targeted mathematics objective, concept, or application. Cultural bias or specialized knowledge could be reasons for an item to have a Source-of-Challenge problem. Such item characteristics may result in some students not answering an assessment item, or answering an assessment item incorrectly, or at a lower level, even though they possess the understanding and skills being assessed.

Findings

Learning goals

The consensus DOK value for each mathematics performance indicator (objective) can be found in Appendix A. Table 1 shows the percentages of objectives at each DOK level. Only 3% of all the objectives were found to be at a Level 3, and there were no objectives at Level 4. A progression can be observed in the DOK values for the objectives; as the grades get higher there are fewer Level 1 objectives and more Level 3 objectives.

Table 1
Percent of Objectives by Depth-of-Knowledge (DOK) Levels for Grades 3-8 Illinois Alignment Analysis for Mathematics

Grade	Total number of objectives	DOK Level	# of objs by Level	% within std by Level
3	42	1 2	20 22	47 52
4	48	1 2	20 28	41 58
5	55	1 2 3	19 35 1	34 63 1
6	56	1 2 3	18 36 2	32 64 3
7	58	1 2 3	14 42 2	24 72 3
8	57	1 2 3	13 38 6	22 66 10

Table 2
Items Coded to Generic Objectives by More Than One Reviewer, Illinois Alignment Analysis for Mathematics, Grades 3-8

Grade	Assessment Item	Generic Objective (Number of Reviewers)
4	13	6B,C (2)
4	14	6B,C (3)
5	74	6B,C (2)
5	50	9A (4)
6	51	7A,B,C (2)
7	26	9A (2)

If no particular objective is targeted by a given assessment item, reviewers are instructed to code the item at the level of a learning goal or a standard. This coding to a generic objective sometimes indicates that the item is inappropriate for the grade level. However, if the item is grade-appropriate, then this situation may instead indicate that there is a piece of content not expressly or precisely described in the objectives. These items may highlight areas in the objectives that should be changed or made more precise. Table 2 displays the assessment items coded to generic objectives by more than one reviewer.

Reviewers' debriefing comments also highlight some ambiguities in the objectives. These comments can be found in Appendix D.

Alignment of Curriculum Learning goals and Assessments

The results of the analysis for each of the four alignment criteria are summarized in Tables 4.1-4.6. More detailed data on each of the criteria are given in the Appendix B in the first three tables. With each table and for each grade is a description of the satisfaction of the alignment criteria for the given grade. The reviewers' debriefing comments provide more detail about the individual reviewers' impressions of the alignment.

Table 3 displays the number of items and points for each assessment form. In the analysis that follows, multiple-point items are weighted extra for alignment purposes. For example, a 3-point item is counted towards the alignment as 3 identically coded 1-point items.

Table 3
Number of items and point value by grade for Illinois Assessments, Grades 3-8

Grade Level	Number of Items	Number of Multi-Point Items	Total Point Value
3	68	3	81
4	68	3	81
5	68	3	81
6	68	3	81
7	68	3	81
8	68	3	81

In Tables 4.1-4.6, "YES" indicates that an acceptable level was attained between the assessment and the learning goal on the criterion. "WEAK" indicates that the criterion was nearly met, within a margin that could simply be due to error in the system. "NO" indicates that the criterion was not met by a noticeable margin—10% over an acceptable level for Depth-of-Knowledge Consistency, 10% over an acceptable level for Range-of-

Knowledge Correspondence, and .1 under an index value of .7 for Balance of Representation.

Table 4
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grades 3-8 Learning Goals and Assessments for Illinois Alignment Analysis

Grade 3

The alignment between the Grade 3 learning goals and assessment is acceptable. All of the alignment criteria are met with respect to each goal. The apparent Balance weakness with respect to Goal 8 is not an alignment problem, but is simply due to the fact that item 74 is an algebra item and is worth 12 points.

Table 4.1
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 3 Learning goals and Assessments for Illinois Alignment Analysis

Grade 3	***Alignment Criteria***			
Learning goals	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	YES
Goal 8 - Algebra	YES	YES	YES	WEAK
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Grade 4

The alignment between the Grade 4 learning goals and assessment is reasonable. All of the alignment criteria are met with respect to each goal, with the minor exception of a Balance weakness with respect to Goal 10. This weakness could be corrected by removing or changing one of the items targeting 10.4.1, addressing graph-reading. The apparent Balance weakness with respect to Goal 7 is not really an alignment problem, but is simply due to the fact that item 74 is a measurement item and is worth 12 points.

Table 4.2
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 4 Learning Goals and Assessments for Illinois Alignment Analysis

Grade 4	***Alignment Criteria***			
Learning goals	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	NO
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	WEAK

Grade 5

The alignment between the Grade 5 learning goals and assessment is acceptable. All of the alignment criteria are met with respect to each goal. The apparent Balance weakness with respect to Goal 6 is not really an alignment problem, but is simply due to the fact that item 74 is a number sense item and is worth 12 points.

Table 4.3
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 5 Learning Goals and Assessments for Illinois Alignment Analysis

Grade 5	***Alignment Criteria***			
Learning goals	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
Goal 6 - Number Sense	YES	YES	YES	WEAK
Goal 7 – Measurement	YES	YES	YES	YES
Goal 8 – Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Grade 6

The alignment between the Grade 6 learning goals and assessment is acceptable. All of the alignment criteria are met with respect to each goal. The apparent Balance weakness with respect to Goal 7 is not really an alignment problem, but is simply due to the fact that item 74 is a measurement item and is worth 12 points.

Table 4.4
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 6 Learning Goals and Assessments for Illinois Alignment Analysis

Grade 6	***Alignment Criteria***			
Learning goals	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 – Measurement	YES	YES	YES	NO
Goal 8 – Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Grade 7

The alignment between the Grade 7 learning goals and assessment is acceptable. All of the alignment criteria are met with respect to each goal. The apparent Balance weakness with respect to Goal 6 is not really an alignment problem, but is simply due to the fact that item 74 is a number sense item and is worth 12 points.

Table 4.5
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 7 Learning goals and Assessments for Illinois Alignment Analysis

Grade 7	***Alignment Criteria***			
Learning goals	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
Goal 6 - Number Sense	YES	YES	YES	NO
Goal 7 - Measurement	YES	YES	YES	YES
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Grade 8

The alignment between the Grade 8 learning goals and assessment is reasonable. The only two alignment criteria that are not fully satisfied are Depth-of-Knowledge Consistency with respect to Goal 10 and Balance of Representation with respect to Goals 7 and 10. The apparent Balance weakness for Goal 10 is not really an alignment problem, but is simply due to the fact that item 74 is worth 12 points. The Balance weakness for the measurement goal is caused by too many items targeting objective 7.8.02. Reviewers'

debriefing comments in Appendix D suggest that there are too many items addressing areas and circumferences of circles. Changing or removing one or two such items would correct this balance weakness. The DOK Consistency weakness for Goal 10 is due to the fact that five of the objectives under the Data Analysis, Statistics, and Probability learning goal have a DOK Level of 3, although none of the four items that target one of these objectives are at a DOK Level of 3. Replacing items 19, 39, or 53 with those that have a DOK level 3 would fully correct this alignment weakness.

Table 4.6
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 8 Learning Goals and Assessments for Illinois Alignment Analysis

Grade 8	***Alignment Criteria***			
Learning goals	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	WEAK
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	WEAK	YES	NO

Source of Challenge Issue Comments

Reviewers were instructed to comment about any items that contained an inappropriate source of challenge. Their comments can be found in Tables (grade).5 in Appendix C. Several items were noted by more than one reviewer as having issues with source of challenge—Grade 7 items 2, 38, and 54, and Grade 8 items 3, 9, 10, and 35. All of these issues arose because the students are allowed to use calculators on the assessments. Scientific calculators, which some students will have and others will not, can directly solve order-of-operations items and fraction-decimal-percent conversion items without the student understanding the targeted concept. These items should be strongly considered for revision or replacement.

Reviewers' Comments

Along with Source-of-Challenge issue comments, reviewers were asked to provide any other notes they may have. These comments can be found in Tables (grade).7 in Appendix C. After coding each grade-level assessment, reviewers also were asked to respond to five debriefing questions. All of the comments made by the reviewers are given in Appendix D. The notes in general offer an opinion on the item or give an explanation of the reviewers' coding.

Reliability Among Reviewers

The overall intraclass correlation among the mathematics reviewers' assignment of DOK levels to items was moderately high to high for five reviewers (Table 5). An intraclass correlation value greater than 0.8 generally indicates a high level of agreement among the reviewers. A pairwise comparison is used to determine the degree of reliability of reviewer coding at the objective level and at the learning goal level. The learning goal pairwise comparison values are very high, while the objective values are well within reasonable bounds and exceed the values attained in most alignment studies. This is one indication of the clarity of objectives in that reviewers were able to distinguish among objectives to assign items.

Table 5
Intraclass and Pairwise Comparisons, Illinois Alignment Analysis for Mathematics Grades 3–8 Assessments

Grade	Intraclass Correlation	Pairwise Comparison:	Pairwise: Objective	Pairwise: Learning goal
3	.85	.73	.79	.92
4	.85	.70	.70	.91
5	.79	.71	.62	.90
6	.79	.69	.74	.90
7	.84	.77	.70	.91
8	.72	.67	.62	.85

Summary

This analysis indicates that the alignment between the Illinois mathematics learning goals and assessments for Grades 3-8 is quite good. For Grades 3, 5, 6, and 7, all of the alignment criteria are fully satisfied when item weighting is taken into account. Grade 4 has a minor Balance weakness with respect to Goal 10. Grade 8 has a minor DOK weakness for Goal 10 and a Balance weakness for Goal 7. The most important alignment weakness is with respect to Source-of-Challenge issues for Grades 7 and 8. Three items for each of these grades were found to differentially report student knowledge based on the type of calculators students used on the assessments. All of the alignment weaknesses could be fully addressed by replacing nine items total across the six grades.

References

Subkoviak, M. J. (1988). A practitioner's guide to computation and interpretation of reliability indices for mastery tests. *Journal of Educational Measurement, 25*(1), 47-55.

Webb, N. L. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education*. Council of Chief State School Officers and National Institute for Science Education Research Monograph No. 6. Madison: University of Illinois, Illinois Center for Education Research.

Appendix A

Illinois
Grades 3-8 Mathematics
Standards and Group Consensus
DOK Values

Table 3.14
Group Consensus
IL Math Assmt Framework Grade 3, Mathematics, Grade 3

Level	Description	DOK
Goal 6	Number Sense	1
6A	Representations and Ordering	1
6.3.01	Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000.	1
6.3.02	Identify and write (in words and standard form) whole numbers up to 100,000.	1
6.3.03	Recognize a fraction represented with a pictorial model.	1
6.3.04	Represent multiplication as repeated addition.	1
6.3.05	Order and compare whole numbers up to 10,000 using symbols (>, <, or =) and words (e.g., greater (more) than, less than, equal to, between).	1
6.3.06	Order and compare decimals expressed using monetary units.	1
6.3.07	Identify and locate whole numbers and halves on a number line.	1
6.3.08	Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than).	2
6B,C	Computation, Operations, Estimation, and Properties	2
6.3.09	Solve problems and number sentences involving addition and subtraction with regrouping.	2
6.3.10	Solve problems involving the value of a collection of bills and coins whose total value is $10.00 or less, and make change.	2
6.3.11	Model and apply basic multiplication facts (up to 10×10), and apply them to related multiples of 10 (e.g., 3×4=12, 30×4=120).	1
6.3.12	Use the inverse relationships between addition and subtraction to complete basic fact sentences and solve problems (e.g., 5 + 3 = 8 and 8 - 3 = __).	1
6.3.13	Solve problems involving the multiplicative identity of one (e.g., 3×1 =3) and the additive identity of zero (e.g., 3+0 =3).	1
6.3.14	Make estimates appropriate to a given situation with whole numbers.	2
Goal 7	Measurement	2
7A,B,C	Units, Tools, Estimation, and Applications	2
7.3.01	Solve problems involving simple elapsed time in compound units (e.g., hours, minutes, days).	1
7.3.02	Select and use appropriate standard units and tools to measure length (to the nearest inch or cm), time (to the nearest minute), and temperature (to the nearest degree).	2
7.3.03	Solve problems involving the perimeter of a polygon with given side lengths or a given non-standard unit (e.g., paperclip).	2
7.3.04	Solve problems involving the area of a figure when whole and half square units are shown within the figure.	2
7.3.05	Compare and estimate length (including perimeter), area, and weight/mass using referents.	2
7.3.06	Determine the volume of a solid figure that shows cubic units.	2
7.3.07	Solve problems involving simple unit conversions within the same measurement system for time and length.	2
Goal 8	Algebra	2
8A	Representations, Patterns, and Expressions	2
8.3.01	Determine a missing term in a pattern (sequence), describe a pattern (sequence), and	2

Table 3.14
Group Consensus
IL Math Assmt Framework Grade 3, Mathematics, Grade 3

Level	Description	DOK
	extend a pattern (sequence) when given a description or pattern (sequence).	
8.3.02	Write an expression to represent a given situation.	2
8C,D	Writing, Interpreting, and Solving Equations	2
8.3.03	Represent simple mathematical relationships with number sentences (equations and inequalities).	2
8.3.04	Solve one-step addition and subtraction equations that have a missing number or missing operation sign (e.g., 3+?=5, 6 ? 1=7).	1
8.3.05	Solve word problems involving unknown quantities.	2
Goal 9	Geometry	1
9A	Properties of Single Figures and Coordinate Geometry	1
9.3.01	Identify, describe, and sketch two-dimensional shapes (triangles, squares, rectangles, pentagons, hexagons, and octagons) according to the number of sides, length of sides, and number of vertices.	1
9.3.02	Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).	2
9.3.03	Locate and identify points using numbers and symbols on a grid, and describe how points relate to each other on a grid (e.g., ? is 2 units below ¤, point A is 3 units to the right of point B).	1
9.3.04	Identify whether or not a figure has a line of symmetry, and sketch or identify the line of symmetry.	1
9.3.05	Identify images resulting from flips (reflections), slides (translations), or turns (rotations).	2
9.3.06	Identify parallel lines.	1
9B	Relationships Between and Among Multiple Figures	2
9.3.07	Identify the two-dimensional components of a three-dimensional object (e.g., a cube has square faces).	2
9.3.08	Identify a three-dimensional object from its net.	2
9.3.09	Predict the result of putting shapes together (composing) and taking them apart (decomposing).	2
9.3.10	Identify congruent and similar figures by visual inspection.	1
9.3.11	Determine the distance between two points on the number line in whole numbers.	1
Goal 10	Data Analysis, Statistics, and Probability	2
10A,B	Data Analysis and Statistics	2
10.3.01	Read and interpret data represented in a pictograph, bar graph, Venn diagram (with two circles), tally chart, or table.	2
10.3.02	Complete missing parts of a pictograph, bar graph, tally chart, or table for a given set of data.	2
10.3.03	Determine the mode, given a set of data or a graph.	1
10C	Probability	2
10.3.04	Classify events using words such as certain, most likely, equally likely, least likely, possible, and impossible.	1

Table 3.14
Group Consensus
IL Math Assmt Framework Grade 3, Mathematics, Grade 3

10.3.05	Describe the chances associated with a context presented visually, including using the response format "3 out of 4."	2

Table 4.14
Group Consensus
IL Math Assmt Framework Grade 4, Mathematics, Grade 4

Level	Description	DOK
Goal 6	Number Sense	1
6A	Representations and Ordering	1
6.4.01	Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 1,000,000.	1
6.4.02	Identify and write (in words and standard form) whole numbers up to 1,000,000.	1
6.4.03	Read, write, recognize, and model equivalent representations of fractions; divide regions or sets to represent a fraction.	2
6.4.04	Represent multiplication as repeated addition.	1
6.4.05	Order and compare whole numbers up to 100,000.	1
6.4.06	Order and compare decimals through hundredths.	1
6.4.07	Order and compare fractions having like denominators with or without models.	1
6.4.08	Identify and locate whole numbers, halves, and fourths on a number line.	1
6.4.09	Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than).	2
6B,C	Computation, Operations, Estimation, and Properties	2
6.4.10	Solve problems and number sentences involving addition and subtraction with regrouping and multiplication (up to three-digit by one-digit).	2
6.4.11	Solve problems involving the value of a collection of bills and coins whose total value is $100.00 or less, and make change.	2
6.4.12	Model and apply basic multiplication and division facts (up to 12×12), and apply them to related multiples of 10(e.g., 3×9=27, 30×9=270, 6÷3=2, 600÷3=200).	1
6.4.13	Model situations involving addition and subtraction of fractions with like denominators.	2
6.4.14	Solve problems involving the commutative and distributive properties of operations on whole numbers [e.g., 8 + 7 = 7 + 8, 27 × 5 = (20×5) + (7×5)].	2
6.4.15	Use the inverse relationships between addition/subtraction and multiplication/division to complete basic fact sentences and solve problems (e.g., 4×3=12, 12÷3=__).	1
6.4.16	Make estimates appropriate to a given situation with whole numbers	2
Goal 7	Measurement	2
7A,B,C	Units, Tools, Estimation, and Applications	2
7.4.01	Solve problems involving elapsed time in compound units (e.g., 1 hour and 40 minutes) that occur in the same half day (a.m. only or p.m. only).	1
7.4.02	Select and use appropriate standard units and tools to measure length (to the nearest ½ inch or ½ cm), time, and temperature.	2
7.4.03	Solve problems involving the perimeter of a polygon with given side lengths and the area of a square, rectangle, or irregular shape composed of rectangles using diagrams, models, and grids or by measuring (may include sketching a figure from its description).	2
7.4.04	Compare and estimate length (including perimeter), area, volume, and weight/mass using referents	2
7.4.05	Determine the volume of a solid figure that shows cubic units.	2
7.4.06	Solve problems involving unit conversions within the same measurement system for time, length, and weight/mass.	2
Goal 8	Algebra	2
8A	Representations, Patterns, and Expressions	2

Table 4.14
Group Consensus
IL Math Assmt Framework Grade 4, Mathematics, Grade 4

Level	Description	DOK
8.4.01	Determine a missing term in a pattern (sequence), describe a pattern (sequence), and extend a pattern (sequence) when given a description or pattern (sequence).	2
8.4.02	Write an expression using letters or symbols to represent an unknown quantity.	2
8.4.03	Evaluate algebraic expressions with a whole number variable value (e.g., evaluate 3 + m when m = 4).	1
8B	Connections Using Tables, Graphs, and Symbols	2
8.4.04	Identify or represent situations with well-defined patterns using words, tables, and graphs (e.g., represent temperature and time in a line graph).	2
8.4.05	Translate between different representations (table, written, or pictorial) of whole number relationships.	2
8C,D	Writing, Interpreting, and Solving Equations	2
8.4.06	Represent simple mathematical relationships with number sentences (equations and inequalities).	2
8.4.07	Solve for the unknown in an equation with one operation (e.g., 10=?+3+2, ?-1=3).	2
8.4.08	Solve word problems involving unknown quantities.	2
Goal 9	Geometry	1
9A	Properties of Single Figures and Coordinate Geometry	1
9.4.01	Identify, describe, and sketch two-dimensional shapes (triangles, quadrilaterals, pentagons, hexagons, and octagons) according to the number of sides, length of sides, number of vertices, and right angles.	1
9.4.02	Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).	2
9.4.03	Differentiate between polygons and non-polygons	1
9.4.04	Graph, locate, identify points, and describe paths using ordered pairs (first quadrant).	1
9.4.05	Identify whether or not a figure has one or more lines of symmetry, and sketch or identify all lines of symmetry.	2
9.4.06	Identify images resulting from flips (reflections), slides (translations), or turns (rotations).	2
9.4.07	Identify and sketch parallel and perpendicular lines.	1
9.4.08	Identify and sketch right angles.	1
9B	Relationships Between and Among Multiple Figures	2
9.4.09	Identify the two-dimensional components of a three-dimensional object.	2
9.4.10	Identify a three-dimensional object from its net.	2
9.4.11	Predict the result of composing or decomposing shapes or figures.	2
9.4.12	Identify congruent and similar figures by visual inspection.	1
9.4.13	Determine the distance between two points on the number line in whole numbers.	1
Goal 10	Data Analysis, Statistics, and Probability	2
10A,B	Data Analysis and Statistics	2
10.4.01	Read and interpret data represented in a pictograph, bar graph, line (dot) plot, Venn diagram (with two circles), tally chart, table, line graph, or circle graph.	2
10.4.02	Create a pictograph, bar graph, tally chart, or table for a given set of data.	2
10.4.03	Determine the mode and range, given a set of data or a graph.	1
10C	Probability	2

Table 4.14
Group Consensus
IL Math Assmt Framework Grade 4, Mathematics, Grade 4

Level	Description	DOK
10.4.04	Classify events using words such as certain, most likely, equally likely, least likely, possible, and impossible.	1
10.4.05	Describe the chances associated with a context presented visually, including using the response format "3 out of 4" or ¾.	2

Table 5.14
Group Consensus
IL Math Assmt Framework Grade 5, Mathematics, Grade 5

Level	Description	DOK
Goal 6	Number Sense	2
6A	Representations and Ordering	1
6.5.01	Read, write, recognize, and model equivalent representations of whole numbers and their place values up to 100,000,000.	1
6.5.02	Read, write, recognize, model, and interpret numerical expressions from a given description or situation.	2
6.5.03	Read, write, recognize, and model equivalent representations of fractions, including improper fractions and mixed numbers.	2
6.5.04	Recognize, translate between, and model multiple representations of decimals, fractions less than one (halves, quarters, fifths, and tenths), and percents (0%, 25%, 50%, 75%, and 100%).	2
6.5.05	Read, write, recognize, and model decimals and their place values through thousandths.	1
6.5.06	Represent multiplication as repeated addition.	1
6.5.07	Order and compare whole numbers up to 1,000,000.	1
6.5.08	Order and compare decimals through hundredths.	1
6.5.09	Order and compare fractions having like or unlike denominators with or without models.	2
6.5.10	Identify and locate whole numbers, halves, fourths, and thirds on a number line.	1
6.5.11	Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than, square numbers).	2
6B,C	Computation, Operations, Estimation, and Properties	2
6.5.12	Solve problems and number sentences involving addition, subtraction, multiplication, and division using whole numbers.	2
6.5.13	Solve problems and number sentences involving addition and subtraction of decimals through hundredths (with or without monetary labels).	2
6.5.14	Model situations involving addition and subtraction of fractions.	2
6.5.15	Solve problems involving the commutative, distributive, and identity properties of operations on whole numbers (e.g., 37 × 46 = 46 × 37, 270×5= (200×5) + (70×5)].	2
6.5.16	Make estimates appropriate to a given situation with whole numbers, fractions, and decimals.	2
6D	Ratios, Proportions, and Percents	2
6.5.17	Identify and express ratios using appropriate notation (i.e., a/b, a to b), and identify equivalent ratios.	2
6.5.18	Solve problems involving proportional relationships, including unit pricing (e.g., one apple costs 20¢, so four apples cost 80¢).	2
6.5.19	Read, write, recognize, and model percents (0%, 25%, 50%, 75%, and 100%).	1
Goal 7	Measurement	2
7A,B,C	Units, Tools, Estimation, and Applications	2
7.5.01	Solve problems involving elapsed time in compound units.	1
7.5.02	Select and use appropriate standard units and tools to measure length (to the nearest ¼ inch or mm), mass/weight, capacity, and angles.	2
7.5.03	Solve problems involving the perimeter and area of a triangle, rectangle, or irregular shape using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).	2

Table 5.14
Group Consensus
IL Math Assmt Framework Grade 5, Mathematics, Grade 5

Level	Description	DOK
7.5.04	Compare and estimate length (including perimeter), area, volume, weight/mass, and angles (0° to 180°) using referents.	2
7.5.05	Determine the volume of a right rectangular prism using an appropriate formula or strategy.	1
7.5.06	Solve problems involving unit conversions within the same measurement system for time, length, and weight/mass, including compound units (e.g., 5ft 5in, 2lbs 2oz).	2
7.5.07	Solve problems involving map interpretation (e.g., one inch represents five miles, so two inches represent ten miles).	2
Goal 8	Algebra	2
8A	Representations, Patterns, and Expressions	2
8.5.01	Determine a missing term in a sequence, extend a sequence, and identify errors in a sequence when given a description or sequence.	2
8.5.02	Construct and identify a rule that can generate the terms of a given sequence.	2
8.5.03	Write an expression using variables to represent unknown quantities.	2
8.5.04	Evaluate algebraic expressions with a whole number variable value (e.g., evaluate m + m + 3 when m = 4).	1
8B	Connections Using Tables, Graphs, and Symbols	2
8.5.05	Demonstrate, in simple situations, how a change in one quantity results in a change in another quantity (e.g., input-output tables).	2
8.5.06	Translate between different representations (table, written, or pictorial) of whole number relationships.	2
8C,D	Writing, Interpreting, and Solving Equations	2
8.5.07	Represent problems with equations and inequalities.	2
8.5.08	Solve for the unknown in an equation with one operation (e.g., 2+n=20, n÷2=6).	1
8.5.09	Solve word problems involving unknown quantities.	2
Goal 9	Geometry	2
9A	Properties of Single Figures and Coordinate Geometry	1
9.5.01	Classify, describe, and sketch two-dimensional shapes (triangles, quadrilaterals, pentagons, hexagons, and octagons) according to the number of sides, length of sides, number of vertices, and interior angles (right, acute, obtuse).	1
9.5.02	Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).	2
9.5.03	Solve problems using properties of triangles (e.g., sum of interior angles of a triangle is 180 degrees).	2
9.5.04	Identify, describe, and sketch circles, including radius and diameter.	1
9.5.05	Graph, locate, identify points, and describe paths using ordered pairs (first quadrant).	1
9.5.06	Identify whether or not a figure has one or more lines of symmetry, and sketch or identify all lines of symmetry.	2
9.5.07	Identify, describe, and predict results of reflections, translations, and rotations of two-dimensional shapes.	2
9.5.08	Identify and sketch parallel, perpendicular, and intersecting lines.	1
9.5.09	Identify and sketch acute, right, and obtuse angles.	1
9B	Relationships Between and Among Multiple Figures	2

Table 5.14
Group Consensus
IL Math Assmt Framework Grade 5, Mathematics, Grade 5

Level	Description	DOK
9.5.10	Identify the two-dimensional components of a three-dimensional object.	2
9.5.11	Identify a three-dimensional object from its net.	2
9.5.12	Predict the result of composing or decomposing shapes or figures.	2
9.5.13	Identify congruent and similar figures by visual inspection.	1
9.5.14	Determine if figures are similar, and identify relationships between corresponding parts of similar figures.	2
9.5.15	Determine the distance between two points on a horizontal or vertical number line in whole numbers.	1
Goal 10	Data Analysis, Statistics, and Probability	2
10A,B	Data Analysis and Statistics	2
10.5.01	Read, interpret, and make predictions from data represented in a pictograph, bar graph, line (dot) plot, Venn diagram (with two circles), chart/table, line graph, or circle graph.	3
10.5.02	Create a pictograph, bar graph, chart/table, or line graph for a given set of data.	2
10.5.03	Determine the mode, range, median (with an odd number of data points), and mean, given a set of data or a graph.	1
10C	Probability	2
10.5.04	Solve problems involving the probability of a simple event, including representing the probability as a fraction between zero and one.	2
10.5.05	Apply the fundamental counting principle in a simple problem (e.g., How many different combinations of one-scoop ice cream cones can be made with 3 flavors and 2 types of cones?).	2

Table 6.14
Group Consensus
IL Math Assmt Framework Grade 6, Mathematics, Grade 6

Level	Description	DOK
Goal 6	Number Sense	2
6A	Representations and Ordering	2
6.6.01	Read, write, recognize, and model equivalent representations of whole numbers and their place values.	1
6.6.02	Read, write, recognize, model, and interpret numerical expressions from a given description or situation.	2
6.6.03	Read, write, recognize, and model equivalent representations of fractions, including improper fractions and mixed numbers.	2
6.6.04	Recognize, translate between, and apply multiple representations of decimals, fractions, percents (less than 100%), and mixed numbers (halves, quarters, fifths, and tenths).	2
6.6.05	Read, write, recognize, and model equivalent representations of decimals and their place values through thousandths.	1
6.6.06	Represent repeated factors using exponents.	1
6.6.07	Order and compare whole numbers.	1
6.6.08	Order and compare decimals through thousandths.	1
6.6.09	Order and compare fractions and mixed numbers having like or unlike denominators.	2
6.6.10	Identify and locate decimals, fractions, and mixed numbers on a number line.	2
6.6.11	Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., odd/even, factors/multiples, greater than, less than, square numbers, primes).	2
6B,C	Computation, Operations, Estimation, and Properties	2
6.6.12	Solve problems and number sentences involving addition, subtraction, multiplication, and division using whole numbers.	2
6.6.13	Solve problems and number sentences involving addition, subtraction, and multiplication of decimals.	2
6.6.14	Solve problems involving addition and subtraction of fractions and mixed numbers, and express answers in simplest form.	2
6.6.15	Identify and apply order of operations to simplify numeric expressions involving whole numbers.	1
6.6.16	Solve problems involving the commutative, distributive, and associative properties of operations on whole numbers [e.g., $(5\times7)\times2 = 5\times(7\times2)$].	2
6.6.17	Make estimates appropriate to a given situation, and analyze what effect the estimation method used has on the accuracy of results.	3
6D	Ratios, Proportions, and Percents	2
6.6.18	Identify and express ratios using appropriate notation (i.e., a/b, a to b, a:b), identify equivalent ratios, and explain ratios that represent a given situation.	2
6.6.19	Solve problems involving proportional relationships, including unit pricing (e.g., seven apples cost $1.40, so nine apples cost $1.80).	2
6.6.20	Read, write, recognize, and model percents from 0% to 100%.	1
6.6.21	Solve number sentences and problems involving percents.	2
Goal 7	Measurement	2
7A,B,C	Units, Tools, Estimation, and Applications	2
7.6.01	Select and use appropriate standard units and tools to measure length, mass/weight,	2

Table 6.14
Group Consensus
IL Math Assmt Framework Grade 6, Mathematics, Grade 6

Level	Description	DOK
	capacity, and angles.	
7.6.02	Solve problems involving the perimeter and area of a triangle, parallelogram, or irregular shape using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).	2
7.6.03	Compare and estimate length (including perimeter), area, volume, weight/mass, and angles (0° to 180°) using referents.	2
7.6.04	Determine the volume of a right rectangular prism using an appropriate formula or strategy.	1
7.6.05	Solve problems involving unit conversions within the same measurement system for time, length, and weight/mass, including compound units (e.g., 5ft 5in, 2lbs 2oz).	2
7.6.06	Solve problems involving scale drawings and maps.	2
Goal 8	Algebra	2
8A	Representations, Patterns, and Expressions	2
8.6.01	Determine a missing term in a sequence, extend a sequence, and construct and identify a rule that can generate the terms of a given sequence (e.g., 3, 6, 9, . . . is explained by the rule 3n, for n =1).	2
8.6.02	Write an expression using variables to represent unknown quantities.	2
8.6.03	Evaluate algebraic expressions with up to two whole number variable values (e.g., evaluate 3m + n + 3 when m = 4 and n = 2).	1
8B	Connections Using Tables, Graphs, and Symbols	2
8.6.04	Determine a rule having two operations from an input-output table (e.g., multiply by 3 and add 2).	2
8.6.05	Select a table of values that satisfies a linear equation, and recognize the ordered pairs on a rectangular coordinate system.	2
8.6.06	Translate between different representations (table, written, or pictorial) of whole number relationships.	2
8.6.07	Identify graphs of inequalities on a number line.	2
8C,D	Writing, Interpreting, and Solving Equations	2
8.6.08	Represent problems with equations and inequalities.	2
8.6.09	Solve for the unknown in an equation with one operation (e.g., 8x = 24, m÷2=25).	1
8.6.10	Solve word problems involving unknown quantities.	2
Goal 9	Geometry	1
9A	Properties of Single Figures and Coordinate Geometry	1
9.6.01	Classify, describe, and sketch regular and irregular two-dimensional shapes according to the number of sides, length of sides, number of vertices, and interior angles.	2
9.6.02	Identify and describe three-dimensional shapes (cubes, spheres, cones, cylinders, prisms, and pyramids) according to their characteristics (faces, edges, vertices).	1
9.6.03	Solve problems using properties of triangles and quadrilaterals (e.g., sum of interior angles of a quadrilateral is 360°).	2
9.6.04	Identify, describe, and sketch circles, including radius, diameter, and chord.	1
9.6.05	Graph, locate, identify points, describe paths, and plot figures using ordered pairs (first quadrant).	1
9.6.06	Identify, describe, and predict results of reflections, translations, and rotations of two-	2

Table 6.14
Group Consensus
IL Math Assmt Framework Grade 6, Mathematics, Grade 6

Level	Description	DOK
	dimensional shapes.	
9.6.07	Identify and sketch parallel, perpendicular, and intersecting lines.	1
9.6.08	Identify and sketch acute, right, and obtuse angles.	1
9B	Relationships Between and Among Multiple Figures	2
9.6.09	Identify a three-dimensional object from its net.	2
9.6.10	Recognize which attributes (such as shape, perimeter, and area) change or don't change when plane figures are composed, decomposed, or rearranged.	2
9.6.11	Identify congruent and similar figures by visual inspection.	1
9.6.12	Determine if figures are similar, and identify relationships between corresponding parts of similar figures.	2
9.6.13	Determine the distance between two points on a horizontal or vertical number line.	1
Goal 10	Data Analysis, Statistics, and Probability	2
10A,B	Data Analysis and Statistics	2
10.6.01	Read, interpret, and make predictions from data represented in a bar graph, line (dot) plot, Venn diagram (with two circles), chart/table, line graph, or circle graph.	3
10.6.02	Compare different representations of the same data.	2
10.6.03	Create a bar graph, chart/table, line graph, or circle graph with common referents (1/4, 50%, .75) for a given set of data.	2
10.6.04	Determine the mode, range, median, and mean, given a set of data or a graph.	1
10C	Probability	2
10.6.05	Solve problems involving the probability of a simple event, including representing the probability as a fraction, decimal, or percent.	2
10.6.06	Apply the fundamental counting principle in a simple problem (e.g., How many different 3-digit numbers can be made with the digits 1, 2, and 2?).	2

Table 7.14
Group Consensus
IL Math Assmt Framework Grade 7, Mathematics, Grade 7

Level	Description	DOK
Goal 6	Number Sense	2
6A	Representations and Ordering	2
6.7.01	Read, write, and recognize equivalent representations of positive powers of 10.	1
6.7.02	Read, write, recognize, model, and interpret integers, including translating numerical expressions.	2
6.7.03	Recognize, translate between, and apply multiple representations of rational numbers (decimals, fractions, mixed numbers, and percents less than 100%).	2
6.7.04	Represent repeated factors using exponents.	1
6.7.05	Order and compare integers, terminating decimals, fractions, and mixed numbers.	2
6.7.06	Identify and locate integers, decimals, and fractions/mixed numbers on a number line, and estimate the locations of square roots.	2
6.7.07	Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., square numbers, prime/composite, prime factorization, greatest common factor, least common multiple).	2
6B,C	Computation, Operations, Estimation, and Properties	2
6.7.08	Solve problems and number sentences involving addition, subtraction, multiplication, and division using integers, fractions, and decimals.	2
6.7.09	Identify and apply order of operations to simplify numeric expressions involving whole numbers (including exponents), fractions, and decimals.	1
6.7.10	Identify and apply the following properties of operations with rational numbers: the commutative and associative properties for addition and multiplication; the distributive property; the additive and multiplicative identity properties;the additive and multiplicative inverse properties; and the multiplicative property of zero.	1
6.7.11	Demonstrate and apply the relationships between addition/subtraction and multiplication/division with rational numbers.	2
6.7.12	Make estimates appropriate to a given situation, and analyze what effect the estimation method used has on the accuracy of results.	3
6.7.13	Estimate the square root of a number less than 1,000 between two whole numbers (e.g., v41 is between 6 and 7)	2
6D	Ratios, Proportions, and Percents	2
6.7.14	Create and explain ratios that represent a given situation.	2
6.7.15	Use proportional reasoning to model and solve problems.	2
6.7.16	Read, write, recognize, model, and interpret percents from 0% to 100%.	1
6.7.17	Solve number sentences and problems involving fractions, decimals, and percents (e.g., 50% of 10 is the same as 1/2 of 10 is the same as 0.5×10, sales tax, tips, interest, discounts).	2
Goal 7	Measurement	2
7A,B,C	Units, Tools, Estimation, and Applications	2
7.7.01	Select and use appropriate standard units and tools to measure length, mass/weight, capacity, and angles. Sketch, with given specifications, line segments, angles, triangles, and quadrilaterals.	2

Table 7.14
Group Consensus
IL Math Assmt Framework Grade 7, Mathematics, Grade 7

Level	Description	DOK
7.7.02	Solve problems involving the perimeter and area of polygons and composite figures using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).	2
7.7.03	Compare and estimate length (including perimeter), area, volume, weight/mass, and angles (0° to 180°) using referents.	2
7.7.04	Determine the volume and surface area of a right rectangular prism using an appropriate formula or strategy.	2
7.7.05	Solve problems involving unit conversions within the same measurement system for length, weight/mass, capacity, and square units (e.g., 1 ft2 = 144 in2).	2
7.7.06	Solve problems involving scale drawings and maps.	2
Goal 8	Algebra	2
8A	Representations, Patterns, and Expressions	2
8.7.01	Determine a missing term in a sequence, extend a sequence, and construct and identify a rule that can generate the terms of an arithmetic or geometric sequence.	2
8.7.02	Write an expression using variables to represent unknown quantities.	2
8.7.03	Simplify algebraic expressions by identifying and combining like terms.	1
8.7.04	Recognize equivalent forms of algebraic expressions.	2
8.7.05	Evaluate or simplify algebraic expressions with one or more integer variable values (e.g., a2 + b for a = 3 and b = -4).	1
8B	Connections Using Tables, Graphs, and Symbols	2
8.7.06	Determine how a change in one variable relates to a change in a second variable.	2
8.7.07	Represent linear equations and quantitative relationships on a rectangular coordinate system, and interpret the meaning of a specific part of a graph.	2
8.7.08	Translate between different representations (table, written, graphical, or pictorial) of whole number relationships and linear expressions.	2
8.7.09	Identify, graph, and interpret inequalities on a number line.	2
8C,D	Writing, Interpreting, and Solving Equations	2
8.7.10	Represent and analyze problems with linear equations and inequalities.	2
8.7.11	Solve linear equations in one variable (e.g., 2x + 3 = 13) and inequalities involving < or > (e.g., 2x<6, x+7>10).	2
8.7.12	Solve word problems involving unknown quantities.	2
Goal 9	Geometry	2
9A	Properties of Single Figures and Coordinate Geometry	1
9.7.01	Classify, describe, and sketch regular and irregular two-dimensional shapes according to the number of sides, length of sides, number of vertices, and interior angles.	1
9.7.02	Solve problems involving two- and three-dimensional shapes.	2
9.7.03	Solve problems using properties of triangles and quadrilaterals (e.g., opposite sides of a parallelogram are congruent).	2
9.7.04	identify, describe, and determine the radius and diameter of a circle.	1
9.7.05	Graph points and identify coordinates of points on the Cartesian coordinate plane (all four quadrants).	1
9.7.06	Represent and identify geometric figures using coordinate geometry.	1
9.7.07	Analyze the results of a combination of transformations.	2

Table 7.14
Group Consensus
IL Math Assmt Framework Grade 7, Mathematics, Grade 7

Level	Description	DOK
9.7.08	Identify or analyze relationships of angles formed by intersecting lines.	2
9.7.09	Identify and sketch acute, right, and obtuse angles.	1
9.7.10	Solve problems involving complementary and supplementary angles.	1
9B	Relationships Between and Among Multiple Figures	2
9.7.11	Identify a three-dimensional object from its net.	2
9.7.12	Recognize which attributes (such as shape, perimeter, and area) change or don't change when plane figures are composed, decomposed, or rearranged.	2
9.7.13	Describe the difference between congruence and similarity.	2
9.7.14	Determine if figures are similar, and identify relationships between corresponding parts of similar figures.	2
9.7.15	Determine the distance between two points on a horizontal or vertical number line.	1
Goal 10	Data Analysis, Statistics, and Probability	2
10A,B	Data Analysis and Statistics	2
10.7.01	Read, interpret, and make predictions from data represented in a bar graph, line (dot) plot, Venn diagram (with two circles), chart/table, line graph, scatterplot, circle graph, or histogram.	3
10.7.02	Compare different representations of the same data.	2
10.7.03	Create a bar graph, chart/table, line graph, or circle graph for a given set of data.	2
10.7.04	Identify a reasonable approximation of the line of best fit from a set of data or a scatter plot.	2
10.7.05	Determine and use the mode, range, median, and mean to interpret data.	2
10C	Probability	2
10.7.06	Solve problems involving the probability of a simple or compound event, including representing the probability as a fraction, decimal, or percent.	2
10.7.07	Represent all possible outcomes for simple events.	2
10.7.08	Solve simple problems involving the number of ways objects can be arranged (permutations and combinations).	2

Table 8.14
Group Consensus
IL Math Assmt Framework Grade 8, Mathematics, Grade 8

Level	Description	DOK
Goal 6	Number Sense	2
6A	Representations and Ordering	2
6.8.01	Read, write, and recognize equivalent representations of integer powers of 10.	1
6.8.02	Read, write, recognize, model, and interpret integers, including translating numerical expressions.	1
6.8.03	Recognize, translate between, and apply multiple representations of rational numbers (decimals, fractions, mixed numbers, percents, and roots).	2
6.8.04	Use scientific notation to represent numbers and solve problems.	1
6.8.05	Represent repeated factors using exponents.	1
6.8.06	Order and compare rational numbers.	2
6.8.07	Identify and locate rational and irrational numbers (e.g., pi, v2,v5) on a number line.	2
6.8.08	Solve problems involving descriptions of numbers, including characteristics and relationships (e.g., exponents, roots, prime/composite, prime factorization, greatest common factor, least common multiple).	2
6B,C	Computation, Operations, Estimation, and Properties	2
6.8.09	Solve problems and number sentences involving addition, subtraction, multiplication, and division using rational numbers, exponents, and roots.	2
6.8.10	Identify and apply order of operations to simplify numeric expressions involving integers (including exponents and roots), fractions, and decimals.	1
6.8.11	Identify and apply the following properties of operations with rational numbers: the commutative and associative properties for addition and multiplication;the distributive property; the additive and multiplicative identity properties;the additive and multiplicative inverse properties; and the multiplicative property of zero.	1
6.8.12	Describe the effect of multiplying and dividing by numbers, including the effect of multiplying or dividing a rational number by: a number less than zero; zero;a number between zero and one; and a number greater than one.	2
6.8.13	Select, use, and justify appropriate operations, methods, and tools to compute or estimate with rational numbers. Verify solutions and determine the reasonableness of results.	3
6.8.14	Estimate the square or cube root of a number less than 1,000 between two whole numbers (e.g., 3v 200 is between 5 and 6).	2
6D	Ratios, Proportions, and Percents	2
6.8.15	Use ratios to describe problem situations.	1
6.8.16	Use proportional reasoning to model and solve problems.	2
6.8.17	Read, write, recognize, model, and interpret percents, including those less than 1% and greater than 100%.	2
6.8.18	Solve number sentences and problems involving fractions, decimals, and percents (e.g., percent increase and decrease, interest rates, tax, discounts, tips).	2
Goal 7	Measurement	2
7A,B,C	Units, Tools, Estimation, and Applications	2

Table 8.14
Group Consensus
IL Math Assmt Framework Grade 8, Mathematics, Grade 8

Level	Description	DOK
7.8.01	Select and use appropriate standard units and tools to solve measurement problems, including measurements of polygons and circles.	2
7.8.02	Solve problems involving perimeter/circumference and area of polygons, circles, and composite figures using diagrams, models, and grids or by measuring or using given formulas (may include sketching a figure from its description).	2
7.8.03	Compare and estimate length (including perimeter/circumference), area, volume, weight/mass, and angles (0° to 360°) using referents.	2
7.8.04	Solve problems involving the volume or surface area of a right rectangular prism, right circular cylinder, or composite shape using an appropriate formula or strategy.	2
7.8.05	Solve problems involving unit conversions within the same measurement system for length, weight/mass, capacity, square units, and measures expressed as rates (e.g., converting feet/second to yards/minute).	2
7.8.06	Solve problems involving scale drawings, maps, and indirect measurement (e.g., determining the height of a building by comparing its known shadow length to the known height and shadow length of another object).	2
Goal 8	Algebra	2
8A	Representations, Patterns, and Expressions	2
8.8.01	Analyze, extend, and create sequences or linear functions, and determine algebraic expressions to describe the nth term of a sequence.	3
8.8.02	Write an expression using variables to represent unknown quantities.	2
8.8.03	Simplify algebraic expressions.	1
8.8.04	Recognize and generate equivalent forms of algebraic expressions.	2
8.8.05	Evaluate or simplify algebraic expressions with one or more rational variable values (e.g., 3a2 - b for a = 3 and b = 7).	1
8B	Connections Using Tables, Graphs, and Symbols	2
8.8.06	Recognize, describe, and extend patterns using rate of change.	2
8.8.07	Represent linear equations and quantitative relationships on a rectangular coordinate system, and interpret the meaning of a specific part of a graph.	2
8.8.08	Translate between different representations (table, written, graphical, or pictorial) of whole number relationships and linear expressions.	2
8.8.09	Interpret the meaning of slope and intercepts in linear situations.	2
8.8.10	Identify, graph, and interpret up to two inequalities with a single variable (including the intersection or union of these inequalities) on a number line.	2
8C,D	Writing, Interpreting, and Solving Equations	2
8.8.11	Represent and analyze problems with linear equations and inequalities.	2
8.8.12	Solve linear equations and inequalities in one variable over the rational numbers (e.g., 5x+7= -13, 4x-3= -7x+8, -2x+3>-5).	2
8.8.13	Solve word problems involving unknown quantities.	2
Goal 9	Geometry	2
9A	Properties of Single Figures and Coordinate Geometry	2
9.8.01	Solve problems involving two- and three-dimensional shapes.	2
9.8.02	Solve problems that require knowledge of triangle and quadrilateral properties (e.g., triangle inequality).	2

Table 8.14
Group Consensus
IL Math Assmt Framework Grade 8, Mathematics, Grade 8

Level	Description	DOK
9.8.03	Find the length of any side of a right triangle using the Pythagorean theorem (whole number solutions).	1
9.8.04	Identify, describe, and determine the radius, diameter, and circumference of a circle and their relationship to each other and to pi.	2
9.8.05	Graph points, and identify coordinates of points on the Cartesian coordinate plane (all four quadrants).	1
9.8.06	Represent and identify geometric figures using coordinate geometry, including those resulting from transformations.	2
9.8.07	Analyze the results of a combination of transformations, and determine a different transformation that could produce the same result.	2
9.8.08	Identify or analyze relationships of angles formed by intersecting lines (including parallel lines cut by a transversal) and angles formed by radii of a circle.	2
9.8.09	Solve problems involving vertical, complementary, and supplementary angles.	1
9B	Relationships Between and Among Multiple Figures	2
9.8.10	Identify front, side, and top views of a three-dimensional solid built with cubes.	2
9.8.11	Solve problems involving congruent and similar figures.	2
9.8.12	Relate absolute value to distance on the number line.	1
Goal 10	Data Analysis, Statistics, and Probability	3
10A,B	Data Analysis and Statistics	3
10.8.01	Read, interpret (including possible misleading characteristics), and make predictions from data represented in a bar graph, line (dot) plot, Venn diagram (with two or three circles), chart/table, line graph, scatterplot, circle graph, stem-and-leaf plot, or histogram.	3
10.8.02	Compare and contrast the effectiveness of different representations of the same data.	3
10.8.03	Create a bar graph, chart/table, line graph, or circle graph and solve a problem using the data in the graph for a given set of data.	2
10.8.04	Identify or draw a reasonable approximation of the line of best fit from a set of data or a scatter plot, and use the line to make predictions.	3
10.8.05	Analyze and apply measures of central tendency (mode, range, median, and mean) in problem-solving situations.	3
10C	Probability	2
10.8.06	Solve problems involving the probability of an event composed of repeated trials, compound events (including independent events), or future events with or without replacement.	2
10.8.07	Represent all possible outcomes (sample space) for simple or compound events (e.g., tables, grids, tree diagrams).	2
10.8.08	Solve simple problems involving the number of ways objects can be arranged (permutations and combinations).	2

Appendix B

Data Analysis Tables

Illinois
Grades 3-8 Mathematics

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.1

Standards #	Number of standards plus one for a generic standard for each standard.
Standards #	Average number of standards for reviewers. If the number is greater than the actual number in the standard, then at least one reviewer coded an item for the standard/standard but did not find any standard in the standard that corresponded to the item.
Level	The Depth-of-Knowledge level coded by the reviewers for the standards for each standard.
# of standards by Level	The number of standards coded at each level
% w/in std by Level	The percent of standards coded at each level
Hits	
Mean & SD	Mean and standard deviation number of items reviewers coded as corresponding to standard. The total is the total number of coded hits.
Cat. Conc. Accept.	"Yes" indicates that the standard met the acceptable level for criterion. "Yes" if mean is six or more. "Weak" if mean is five to six. "No" if mean is less than five.

Tables *grade*.2

	First five columns repeat columns from Table 1.
Level of Item w.r.t. Stand	Mean percent and standard deviation of items coded as "under" the Depth-of-Knowledge level of the corresponding standard, as "at" (the same) the Depth-of-Knowledge level of the corresponding standard, and as "above" the Depth-of-Knowledge level of the corresponding standard.
Depth-of-Know. Consistency Accept.	"Yes" indicates that 50% or more of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "Weak" indicates that 40% to 50% of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "No" indicates that less than 40% items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards.

Tables *grade*.3

First five columns repeat columns from Table 1 and 2.

Range of Standards

Standards Hit — Average number and standard deviation of the standards hit coded by reviewers.

% of Total — Average percent and standard deviation of the total standards that had at least one item coded.

Range of Know.

Accept. — "Yes" indicates that 50% or more of the standards had at least one coded standard.
"Weak" indicates that 40% to 50% of the standards had at least one coded standard.
"No" indicates that 40% or less of the standards had at least one coded standard.

Balance Index

% Hits in Std/Ttl Hits — Average and standard deviation of the percent of the items hit for a standard of total number of hits (see total under the Hits column).

Index — Average and standard deviation of the Balance Index.

Note: BALANCE INDEX $1 - (\sum_{k=1} \left| 1/(O) - I_{(k)} /(H) \right|)/2$

Where O = Total number of standards hit for the standard
$I_{(k)}$ = Number of items hit corresponding to standard (k)
H = Total number of items hit for the standard

Bal. of Rep Accept. — "Yes" indicates that the Balance Index was .7 or above (items evenly distributed among standards).
"Weak" indicates that the Balance Index was .6 to .7 (a high percentage of items coded as corresponding to two or three standards).
"No" indicates that the Balance Index was .6 or less (a high percentage of items coded as corresponding to one standard.)

Tables *grade*.4

Summary if standard met the acceptable level for the four criteria by each standard.

Tables *grade*.6

The DOK value for each assessment item given by each reviewer. The intraclass correlation for the group of reviewers is given on the last row.

Tables *grade*.8

The DOK level and standard code assigned by each reviewer for each item.

Tables *grade*.9

This list for each item all of the standards coded by the group of reviewers as corresponding to the item. Repeat of a standard indicates the number of reviewers who coded that standard as corresponding to the item.

Tables *grade*.10

This lists for each standard all of the items coded by the group of reviewers as corresponding to the standard. Repeat of an item indicates the number of reviewers who coded the item as corresponding to the standard.

Tables *grade*.12

This table summarizes the number of reviewers who coded an item as corresponding to a standard. It contains the same information as in Table 10.

Tables *grade*.13

This table can be used to compare the DOK level of a standard to the average DOK level of the items reviewers assigned to the standard. This table is helpful to identify items with a lower DOK level that should be replaced by an item with a higher DOK level to improve the Depth-of-Knowledge Consistency.

Table 3.1
Categorical Concurrence Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 3 Spring 2006
Number of Assessment Items - 68

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
Goal 6 - Number Sense	2	14.8	1 2	10 4	71 28	29.8	6.31	YES
Goal 7 - Measurement	1	7	1 2	1 6	14 85	12.2	0.75	YES
Goal 8 - Algebra	2	5	1 2	1 4	20 80	19.2	0.4	YES
Goal 9 - Geometry	2	11	1 2	6 5	54 45	15.2	1.17	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	1 2	2 3	40 60	11.2	0.98	YES
Total	9	42.8	1 2	20 22	47 52	87.6	6.09	

Table 3.2
Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 3 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
Goal 6 - Number Sense	2	14.8	29.8	6.31	9	21	81	34	10	29	YES
Goal 7 - Measurement	1	7	12.2	0.75	23	39	64	43	13	31	YES
Goal 8 - Algebra	2	5	19.2	0.4	19	35	65	43	16	34	YES
Goal 9 - Geometry	2	11	15.2	1.17	8	26	67	43	25	40	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	11.2	0.98	10	24	83	31	7	22	YES
Total	9	42.8	87.6	6.09	12	28	73	39	15	33	

Table 3.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 3 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Goal 6 - Number Sense	2	14.8	29.8	6.31	13.8	1.47	93	5	YES	34	5	0.73	0.08	YES
Goal 7 - Measurement	1	7	12.2	0.75	6.6	0.49	94	7	YES	14	1	0.75	0.01	YES
Goal 8 - Algebra	2	5	19.2	0.4	3.2	0.4	64	8	YES	22	2	0.60	0.02	WEAK
Goal 9 - Geometry	2	11	15.2	1.17	9.6	0.8	87	7	YES	17	2	0.80	0	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	11.2	0.98	4.6	0.49	92	10	YES	13	1	0.78	0.02	YES
Total	9	42.8	87.6	6.09	7.56	3.88	86	14		20	8	0.73	0.08	

Table 3.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Five Reviewers
IL Mathematics Grade 3 Spring 2006
Number of Assessment Items - 68

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	YES
Goal 8 - Algebra	YES	YES	YES	WEAK
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Table 3.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 3 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	1	1	1	1	1
2	2	1	1	1	1
3	1	1	1	1	1
4	1	1	1	1	1
5	2	1	1	1	1
6	2	2	1	2	1
7	1	1	1	1	1
8	1	2	1	1	1
9	2	2	2	2	2
10	2	2	2	2	2
11	2	2	2	1	1
12	1	1	1	1	1
13	2	2	2	2	2
14	1	1	1	1	1
15	2	2	2	2	2
16	2	2	1	2	1
17	2	1	1	2	2
18	2	1	2	2	2
19	2	2	2	2	2
20	2	2	2	2	2
21	2	2	2	2	2
22	1	2	1	2	2
23	1	1	1	2	1
24	2	2	3	3	2
25	2	2	2	1	1
26	1	1	1	1	1
27	1	2	1	2	2
28	1	2	1	2	1
29	2	2	1	2	1
30	2	1	2	1	1
31	2	2	2	2	2
32	2	2	2	2	2
33	2	2	1	2	2
34	1	1	1	1	1
35	2	1	1	2	2
36	1	1	1	1	1
37	2	1	1	1	2
38	2	1	1	2	2
39	1	1	1	1	1
40	1	1	1	2	2

Table 3.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 3 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
41	1	1	1	1	1
42	2	2	1	2	1
43	2	1	2	2	2
44	2	2	2	2	2
45	2	2	2	2	2
46	1	1	1	1	1
47	1	1	1	1	1
48	2	1	1	2	1
49	1	2	1	2	1
50	1	1	1	1	1
51	2	1	2	2	2
52	2	1	2	2	2
53	2	2	2	2	2
54	1	1	2	1	1
55	2	1	1	1	2
56	1	1	1	1	1
57	2	2	2	2	2
58	1	1	1	1	1
59	2	2	2	2	2
60	2	1	1	1	1
61	2	2	1	2	2
62	2	2	1	2	2
63	2	2	2	2	2
64	2	2	2	2	2
65	1	2	2	2	2
66					
67					
68					
69					
70					
71	2	1	2	2	1
72	2	2	2	2	2
73					
74	2	2	3	3	3
75					

Intraclass Correlation: 0.8504
Pairwise Comparison: 0.7324

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 3 Spring 2006

Item	DOK 0	PObj0	S1Obj 0	DO K1	PObj1	S1Obj 1	S2O bj1	DO K2	PObj2	S1Obj2	S2O bj2	DO K3	PObj3	S1Obj3	DO K4	PObj4	S1Obj4
1	1	6.3.02		1	6.3.02			1	6.3.02			1	6.3.02		1	6.3.02	
2	2	6.3.05		1	6.3.05			1	6.3.05			1	6.3.05		1	6.3.05	
3	1	6.3.01		1	6.3.01			1	6.3.01			1	6.3.01		1	6.3.01	
4	1	6.3.03		1	6.3.03			1	6.3.03			1	6.3.02		1	6.3.03	
5	2	6.3.09		1	6.3.09			1	6.3.10			1	6.3.09		1	6.3.08	
6	2	6.3.06		2	6.3.06			1	6.3.05			2	6.3.06		1	6.3.06	
7	1	6.3.08		1	6.3.07			1	6.3.07			1	6.3.07		1	6.3.07	
8	1	6.3.08		2	6.3.08			1	6.3.08			1	6.3.08		1	6.3.08	
9	2	6A		2	6.3.08			2	6.3.08			2	6.3.08		2	6.3.08	
10	2	6.3.10		2	6.3.10			2	6.3.10			2	6.3.10		2	6.3.10	
11	2	6.3.14		2	6.3.14			2	6.3.14			1	6.3.11		1	6.3.09	
12	1	6.3.11		1	6.3.11			1	6.3.11			1	6.3.11		1	6.3.11	
13	2	7.3.01		2	7.3.01			2	7.3.01			2	7.3.01		2	7.3.01	
14	1	6.3.13		1	6.3.13			1	6.3.13			1	6.3.13		1	6.3.13	
15	2	6.3.09		2	6.3.09			2	6.3.08			2	6.3.09		2	6.3.09	
16	2	6B,C		2	8.3.02			1	8.3.03			2	8.3.02		1	6.3.11	
17	2	8.3.01		1	8.3.01			1	8.3.01			2	8.3.01		2	8.3.01	
18	2	8.3.01		1	8.3.01			2	8.3.01			2	8.3.01		2	8.3.01	
19	2	8.3.01		2	8.3.01			2	8.3.01			2	8.3.01		2	8.3.01	
20	2	10.3.01		2	10.3.01			2	10.3.01			2	10.3.01		2	10.3.01	
21	2	10.3.01		2	10.3.01			2	10.3.01			2	10.3.02		2	10.3.01	
22	1	6.3.09		2	6.3.09			1	6.3.09			2	6.3.09		2	6.3.09	
23	1	10.3.04		1	10.3.04			1	10.3.04			2	10.3.04		1	10.3.04	
24	2	9.3.09		2	9.3.09			3	9.3.09			3	9.3.09		2	9.3.09	
25	2	9.3.03		2	9.3.03			2	9.3.03			1	9.3.03		1	9.3.03	
26	1	9.3.04		1	9.3.04			1	9.3.04			1	9.3.04		1	9.3.04	
27	1	7.3.02		2	7.3.02			1	7.3.02			2	7.3.02		2	7.3.02	
28	1	7.3.02		2	7.3.02			1	7.3.02			2	7.3.02		1	7.3.02	
29	2	7.3.01		2	7.3.01			1	7.3.01			2	7.3.01		1	7.3.01	
30	2	6.3.10		1	6.3.10			2	6.3.10			1	6.3.10		1	6.3.10	
31	2	9.3.09	9.3.02	2	7.3.06			2	7.3.06			2	7.3.06		2	9.3.02	
32	2	8.3.05		2	8.3.05			2	8.3.05			2	8.3.05		2	8.3.05	
33	2	8.3.02		2	8.3.02			1	8.3.02			2	8.3.02		2	8.3.02	
34	1	9.3.06		1	9.3.06			1	9.3.06			1	9.3.06		1	9.3.06	
35	2	9.3.05		1	9.3.05			1	9.3.05			2	9.3.05		2	9.3.05	
36	1	6.3.12		1	6.3.12			1	6.3.12			1	6.3.12		1	6.3.12	
37	2	10.3.05		1	10.3.05			1	10.3.05			1	10.3.05		2	10.3.05	

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 3 Spring 2006

Item	DOK 0	PObj0	S1Obj 0	DO K1	PObj1	S1Obj 1	S2O bj1	DO K2	PObj2	S1Obj2	S2O bj2	DO K3	PObj3	S1Obj3	DO K4	PObj4	S1Obj4
38	2	10.3.01		1	10.3.01			1	10.3.01			2	10.3.01		2	10.3.01	
39	1	6.3.04		1	6.3.04			1	6.3.04			1	6.3.04		1	6.3.04	
40	1	7.3.06		1	7.3.06			1	7.3.06			2	7.3.06		2	7.3.06	
41	1	6.3.12		1	6.3.12			1	6.3.12			1	6.3.12		1	6.3.12	
42	2	9.3.11		2	9.3.11			1	6.3.07			2	9.3.11		1	9.3.11	
43	2	10.3.05		1	10.3.05			2	10.3.05			2	10.3.05		2	10.3.05	
44	2	8.3.05		2	Goal 6			2	7.3.05			2	8.3.05		2	8.3.05	
45	2	7.3.03		2	7.3.03			2	7.3.03			2	7.3.03		2	7.3.03	
46	1	10.3.03		1	10.3.03			1	10.3.03			1	10.3.03		1	10.3.03	
47	1	6.3.04		1	6.3.04			1	6.3.04			1	6.3.04		1	6.3.04	
48	2	7.3.04		1	7.3.04			1	7.3.04			2	7.3.04		1	7.3.04	
49	1	10.3.04		2	10.3.04			1	10.3.04			2	10.3.04		1	10.3.04	
50	1	6.3.11		1	6.3.11			1	6.3.11			1	6.3.11		1	6.3.11	
51	2	7.3.01		1	7.3.01			2	7.3.01			2	7.3.01		2	7.3.01	
52	2	7.3.07		1	7.3.07			2	7.3.07			2	7.3.07		2	7.3.07	
53	2	9.3.10		2	7.3.05			2	9.3.10			2	9.3.10		2	7.3.05	
54	1	9.3.03		1	9.3.03			2	9.3.03			1	9.3.03		1	9.3.01	9.3.03
55	2	9.3.05		1	9.3.05			1	9.3.05			1	9.3.05		2	9.3.05	
56	1	6.3.12		1	6.3.12			1	6.3.12			1	6.3.12		1	6.3.12	
57	2	6.3.09		2	6.3.09			2	6.3.09			2	6.3.09		2	6.3.09	
58	1	9.3.01		1	9.3.01			1	9.3.01			1	9.3.01		1	9.3.01	
59	2	7.3.01		2	7.3.01			2	7.3.01			2	7.3.01		2	7.3.01	
60	2	6.3.10		1	6.3.10			1	6.3.10			1	6.3.10		1	6.3.10	
61	2	9.3.02		2	9.3.02			1	9.3.02			2	9.3.02		2	9.3.02	
62	2	8.3.02		2	9.3.08			1	8.3.02			2	8.3.02		2	8.3.02	
63	2	9.3.08		2	7.3.06			2	9.3.08			2	9.3.08		2	9.3.08	
64	2	7.3.06		2	9.3.02			2	7.3.06			2	7.3.06		2	7.3.06	
65	1	9.3.07		2	6.3.12	8.3.05		2	9.3.02			2	9.3.02		2	9.3.02	
66																	
67																	
68																	
69																	
70																	
71	2	9.3.04		1	9.3.04			2	9.3.04			2	9.3.04		1	9.3.04	
72	2	10.3.01		2	10.3.01			2	10.3.01	10.3.02		2	10.3.01	10.3.02	2	10.3.02	10.3.01
73																	
74	2	8.3.05		2	8.3.05	6B,C		3	8.3.05			3	8.3.05		3	6.3.08	8.3.05

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 3 Spring 2006

Item	DOK 0	PObj0	S1Obj 0	DO K1	PObj1	S1Obj 1	S2O bj1	DO K2	PObj2	S1Obj2	S2O bj2	DO K3	PObj3	S1Obj3	DO K4	PObj4	S1Obj4
75																	

Objective Pairwise Comparison: 0.7868
Standard Pairwise Comparison: 0.9204

Table 3.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 3 Spring 2006

Low		Medium		High
0		5.84		84

1	6.3.02	6.3.02	6.3.02	6.3.02	6.3.02	
2	6.3.05	6.3.05	6.3.05	6.3.05	6.3.05	
3	6.3.01	6.3.01	6.3.01	6.3.01	6.3.01	
4	6.3.02	6.3.03	6.3.03	6.3.03	6.3.03	
5	6.3.08	6.3.09	6.3.09	6.3.09	6.3.10	
6	6.3.05	6.3.06	6.3.06	6.3.06	6.3.06	
7	6.3.07	6.3.07	6.3.07	6.3.07	6.3.08	
8	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08	
9	6A	6.3.08	6.3.08	6.3.08	6.3.08	
10	6.3.10	6.3.10	6.3.10	6.3.10	6.3.10	
11	6.3.09	6.3.11	6.3.14	6.3.14	6.3.14	
12	6.3.11	6.3.11	6.3.11	6.3.11	6.3.11	
13	7.3.01	7.3.01	7.3.01	7.3.01	7.3.01	
14	6.3.13	6.3.13	6.3.13	6.3.13	6.3.13	
15	6.3.08	6.3.09	6.3.09	6.3.09	6.3.09	
16	6B,C	6.3.11	8.3.02	8.3.02	8.3.03	
17	8.3.01	8.3.01	8.3.01	8.3.01	8.3.01	
18	8.3.01	8.3.01	8.3.01	8.3.01	8.3.01	
19	8.3.01	8.3.01	8.3.01	8.3.01	8.3.01	
20	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	
21	10.3.01	10.3.01	10.3.01	10.3.01	10.3.02	
22	6.3.09	6.3.09	6.3.09	6.3.09	6.3.09	
23	10.3.04	10.3.04	10.3.04	10.3.04	10.3.04	
24	9.3.09	9.3.09	9.3.09	9.3.09	9.3.09	
25	9.3.03	9.3.03	9.3.03	9.3.03	9.3.03	
26	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04	
27	7.3.02	7.3.02	7.3.02	7.3.02	7.3.02	
28	7.3.02	7.3.02	7.3.02	7.3.02	7.3.02	
29	7.3.01	7.3.01	7.3.01	7.3.01	7.3.01	
30	6.3.10	6.3.10	6.3.10	6.3.10	6.3.10	
31	7.3.06	7.3.06	7.3.06	9.3.02	9.3.02	9.3.09
32	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
33	8.3.02	8.3.02	8.3.02	8.3.02	8.3.02	
34	9.3.06	9.3.06	9.3.06	9.3.06	9.3.06	
35	9.3.05	9.3.05	9.3.05	9.3.05	9.3.05	
36	6.3.12	6.3.12	6.3.12	6.3.12	6.3.12	
37	10.3.05	10.3.05	10.3.05	10.3.05	10.3.05	
38	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	
39	6.3.04	6.3.04	6.3.04	6.3.04	6.3.04	
40	7.3.06	7.3.06	7.3.06	7.3.06	7.3.06	
41	6.3.12	6.3.12	6.3.12	6.3.12	6.3.12	
42	6.3.07	9.3.11	9.3.11	9.3.11	9.3.11	
43	10.3.05	10.3.05	10.3.05	10.3.05	10.3.05	
44	Goal 6	7.3.05	8.3.05	8.3.05	8.3.05	
45	7.3.03	7.3.03	7.3.03	7.3.03	7.3.03	

Table 3.9

Objectives Coded to Each Item by Reviewers

IL Mathematics Grade 3 Spring 2006

46	10.3.03	10.3.03	10.3.03	10.3.03	10.3.03					
47	6.3.04	6.3.04	6.3.04	6.3.04	6.3.04					
48	7.3.04	7.3.04	7.3.04	7.3.04	7.3.04					
49	10.3.04	10.3.04	10.3.04	10.3.04	10.3.04					
50	6.3.11	6.3.11	6.3.11	6.3.11	6.3.11					
51	7.3.01	7.3.01	7.3.01	7.3.01	7.3.01					
52	7.3.07	7.3.07	7.3.07	7.3.07	7.3.07					
53	7.3.05	7.3.05	9.3.10	9.3.10	9.3.10					
54	9.3.01	9.3.03	9.3.03	9.3.03	9.3.03	9.3.03				
55	9.3.05	9.3.05	9.3.05	9.3.05	9.3.05					
56	6.3.12	6.3.12	6.3.12	6.3.12	6.3.12					
57	6.3.09	6.3.09	6.3.09	6.3.09	6.3.09					
58	9.3.01	9.3.01	9.3.01	9.3.01	9.3.01					
59	7.3.01	7.3.01	7.3.01	7.3.01	7.3.01					
60	6.3.10	6.3.10	6.3.10	6.3.10	6.3.10					
61	9.3.02	9.3.02	9.3.02	9.3.02	9.3.02					
62	8.3.02	8.3.02	8.3.02	8.3.02	9.3.08					
63	7.3.06	9.3.08	9.3.08	9.3.08	9.3.08					
64	7.3.06	7.3.06	7.3.06	7.3.06	9.3.02					
65	6.3.12	8.3.05	9.3.02	9.3.02	9.3.02	9.3.07				
66										
67										
68										
69										
70										
71	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04	9.3.04
72	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01	10.3.01
	10.3.02	10.3.02	10.3.02	10.3.02	10.3.02	10.3.02				
73										
74	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08	6.3.08
	6.3.08	6.3.08	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	
	6B,C	6B,C	6B,C	6B,C	6B,C	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	8.3.05	
	8.3.05	8.3.05								
75										

Table 3.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 3 Spring 2006

Low		Medium		High
0		7.68421		69

Goal 6	44																			
6A	9																			
6.3.01	3	3	3	3	3															
6.3.02	1	1	1	1	1	4														
6.3.03	4	4	4	4																
6.3.04	39	39	39	39	39	47	47	47	47	47										
6.3.05	2	2	2	2	2	6														
6.3.06	6	6	6	6																
6.3.07	7	7	7	7	42															
6.3.08	5	7	8	8	8	8	8	9	9	9	9	15	74	74	74	74	74	74	74	74
	74	74	74	74																
6B,C	16	74	74	74	74	74	74	74	74	74	74	74	74							
6.3.09	5	5	5	11	15	15	15	15	22	22	22	22	22	57	57	57	57	57		
6.3.10	5	10	10	10	10	10	30	30	30	30	30	60	60	60	60	60				
6.3.11	11	12	12	12	12	12	16	50	50	50	50	50								
6.3.12	36	36	36	36	36	41	41	41	41	41	56	56	56	56	56	65				
6.3.13	14	14	14	14	14															
6.3.14	11	11	11																	
Goal 7																				
7A,B,C																				
7.3.01	13	13	13	13	13	29	29	29	29	29	51	51	51	51	51	59	59	59	59	59
7.3.02	27	27	27	27	27	28	28	28	28	28										
7.3.03	45	45	45	45	45															
7.3.04	48	48	48	48	48															
7.3.05	44	53	53																	
7.3.06	31	31	31	40	40	40	40	40	63	64	64	64	64							
7.3.07	52	52	52	52	52															
Goal 8																				
8A																				
8.3.01	17	17	17	17	17	18	18	18	18	18	19	19	19	19	19					
8.3.02	16	16	33	33	33	33	33	62	62	62	62									
8C,D																				
8.3.03	16																			
8.3.04																				
8.3.05	32	32	32	32	32	44	44	44	65	74	74	74	74	74	74	74	74	74	74	74
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	

Table 3.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 3 Spring 2006

	74	74	74	74	74	74	74	74	74	74	74										
Goal 9																					
9A																					
9.3.01	54	58	58	58	58	58															
9.3.02	31	31	61	61	61	61	61	64	65	65	65										
9.3.03	25	25	25	25	25	54	54	54	54	54											
9.3.04	26	26	26	26	26	71	71	71	71	71	71	71	71	71	71						
9.3.05	35	35	35	35	35	55	55	55	55	55											
9.3.06	34	34	34	34	34																
9B																					
9.3.07	65																				
9.3.08	62	63	63	63	63																
9.3.09	24	24	24	24	24	31															
9.3.10	53	53	53																		
9.3.11	42	42	42	42																	
Goal 10																					
10A,B																					
10.3.01	20	20	20	20	20	21	21	21	21	38	38	38	38	38	72	72	72	72	72	72	
	72	72	72	72																	
10.3.02	21	72	72	72	72	72	72														
10.3.03	46	46	46	46	46																
10C																					
10.3.04	23	23	23	23	23	49	49	49	49	49											
10.3.05	37	37	37	37	37	43	43	43	43	43											

Table 3.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 3 Spring 2006

Low		Medium		High
1		2		5

Goal 6	44:1					
6A	9:1					
6.3.01	3:5					
6.3.02	1:5	4:1				
6.3.03	4:4					
6.3.04	39:5	47:5				
6.3.05	2:5	6:1				
6.3.06	6:4					
6.3.07	7:4	42:1				
6.3.08	5:1	7:1	8:5	9:4	15:1	74:1
6B,C	16:1	74:1				
6.3.09	5:3	11:1	15:4	22:5	57:5	
6.3.10	5:1	10:5	30:5	60:5		
6.3.11	11:1	12:5	16:1	50:5		
6.3.12	36:5	41:5	56:5	65:1		
6.3.13	14:5					
6.3.14	11:3					
Goal 7						
7A,B,C						
7.3.01	13:5	29:5	51:5	59:5		
7.3.02	27:5	28:5				
7.3.03	45:5					
7.3.04	48:5					
7.3.05	44:1	53:2				
7.3.06	31:3	40:5	63:1	64:4		
7.3.07	52:5					
Goal 8						
8A						
8.3.01	17:5	18:5	19:5			
8.3.02	16:2	33:5	62:4			
8C,D						
8.3.03	16:1					
8.3.04						
8.3.05	32:5	44:3	65:1	74:5		
Goal 9						
9A						
9.3.01	54:1	58:5				
9.3.02	31:2	61:5	64:1	65:3		

Table 3.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 3 Spring 2006

9.3.03	25:5	54:5		
9.3.04	26:5	71:5		
9.3.05	35:5	55:5		
9.3.06	34:5			
9B				
9.3.07	65:1			
9.3.08	62:1	63:4		
9.3.09	24:5	31:1		
9.3.10	53:3			
9.3.11	42:4			
Goal 10				
10A,B				
10.3.01	20:5	21:4	38:5	72:5
10.3.02	21:1	72:3		
10.3.03	46:5			
10C				
10.3.04	23:5	49:5		
10.3.05	37:5	43:5		

Table 3.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 3 Spring 2006

Low		Medium		High
1		2		5

1	6.3.02:5			
2	6.3.05:5			
3	6.3.01:5			
4	6.3.02:1	6.3.03:4		
5	6.3.08:1	6.3.09:3	6.3.10:1	
6	6.3.05:1	6.3.06:4		
7	6.3.07:4	6.3.08:1		
8	6.3.08:5			
9	6A:1	6.3.08:4		
10	6.3.10:5			
11	6.3.09:1	6.3.11:1	6.3.14:3	
12	6.3.11:5			
13	7.3.01:5			
14	6.3.13:5			
15	6.3.08:1	6.3.09:4		
16	6B,C:1	6.3.11:1	8.3.02:2	8.3.03:1
17	8.3.01:5			
18	8.3.01:5			
19	8.3.01:5			
20	10.3.01:5			
21	10.3.01:4	10.3.02:1		
22	6.3.09:5			
23	10.3.04:5			
24	9.3.09:5			
25	9.3.03:5			
26	9.3.04:5			
27	7.3.02:5			
28	7.3.02:5			
29	7.3.01:5			
30	6.3.10:5			
31	7.3.06:3	9.3.02:2	9.3.09:1	
32	8.3.05:5			
33	8.3.02:5			
34	9.3.06:5			
35	9.3.05:5			
36	6.3.12:5			
37	10.3.05:5			
38	10.3.01:5			
39	6.3.04:5			
40	7.3.06:5			
41	6.3.12:5			

Table 3.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 3 Spring 2006

42	6.3.07:1	9.3.11:4		
43	10.3.05:5			
44	Goal 6:1	7.3.05:1	8.3.05:3	
45	7.3.03:5			
46	10.3.03:5			
47	6.3.04:5			
48	7.3.04:5			
49	10.3.04:5			
50	6.3.11:5			
51	7.3.01:5			
52	7.3.07:5			
53	7.3.05:2	9.3.10:3		
54	9.3.01:1	9.3.03:5		
55	9.3.05:5			
56	6.3.12:5			
57	6.3.09:5			
58	9.3.01:5			
59	7.3.01:5			
60	6.3.10:5			
61	9.3.02:5			
62	8.3.02:4	9.3.08:1		
63	7.3.06:1	9.3.08:4		
64	7.3.06:4	9.3.02:1		
65	6.3.12:1	8.3.05:1	9.3.02:3	9.3.07:1
66				
67				
68				
69				
70				
71	9.3.04:5			
72	10.3.01:5	10.3.02:3		
73				
74	6.3.08:1	6B,C:1	8.3.05:5	
75				

Table 3.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 3 Spring 2006

Low DOK		Matched DOK		High DOK
1		2		5

Goal 6 [1]:	44:1 [2]					
6A [1]:	9:1 [2]					
6.3.01 [1]:	3:5 [1]					
6.3.02 [1]:	1:5 [1]	4:1 [1]				
6.3.03 [1]:	4:4 [1]					
6.3.04 [1]:	39:5 [1]	47:5 [1]				
6.3.05 [1]:	2:5 [1.2]	6:1 [1]				
6.3.06 [1]:	6:4 [1.75]					
6.3.07 [1]:	7:4 [1]	42:1 [1]				
6.3.08 [2]:	5:1 [1]	7:1 [1]	8:5 [1.2]	9:4 [2]	15:1 [2]	74:1 [3]
6B,C [2]:	16:1 [2]	74:1 [2]				
6.3.09 [2]:	5:3 [1.33]	11:1 [1]	15:4 [2]	22:5 [1.6]	57:5 [2]	
6.3.10 [2]:	5:1 [1]	10:5 [2]	30:5 [1.4]	60:5 [1.2]		
6.3.11 [1]:	11:1 [1]	12:5 [1]	16:1 [1]	50:5 [1]		
6.3.12 [1]:	36:5 [1]	41:5 [1]	56:5 [1]	65:1 [2]		
6.3.13 [1]:	14:5 [1]					
6.3.14 [2]:	11:3 [2]					
Goal 7 [2]:						
7A,B,C						

Table 3.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 3 Spring 2006

[2]:				
7.3.01 [1]:	13:5 [2]	29:5 [1.6]	51:5 [1.8]	59:5 [2]
7.3.02 [2]:	27:5 [1.6]	28:5 [1.4]		
7.3.03 [2]:	45:5 [2]			
7.3.04 [2]:	48:5 [1.4]			
7.3.05 [2]:	44:1 [2]	53:2 [2]		
7.3.06 [2]:	31:3 [2]	40:5 [1.4]	63:1 [2]	64:4 [2]
7.3.07 [2]:	52:5 [1.8]			
Goal 8 [2]:				
8A [2]:				
8.3.01 [2]:	17:5 [1.6]	18:5 [1.8]	19:5 [2]	
8.3.02 [2]:	16:2 [2]	33:5 [1.8]	62:4 [1.75]	
8C,D [2]:				
8.3.03 [2]:	16:1 [1]			
8.3.04 [1]:				
8.3.05 [2]:	32:5 [2]	44:3 [2]	65:1 [2]	74:5 [2.6]
Goal 9 [1]:				
9A [1]:				
9.3.01 [1]:	54:1 [1]	58:5 [1]		
9.3.02 [2]:	31:2 [2]	61:5 [1.8]	64:1 [2]	65:3 [2]
9.3.03 [1]:	25:5 [1.6]	54:5 [1.2]		
9.3.04	26:5	71:5		

Table 3.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 3 Spring 2006

[1]:	[1]	[1.6]		
9.3.05 [2]:	35:5 [1.6]	55:5 [1.4]		
9.3.06 [1]:	34:5 [1]			
9B [2]:				
9.3.07 [2]:	65:1 [1]			
9.3.08 [2]:	62:1 [2]	63:4 [2]		
9.3.09 [2]:	24:5 [2.4]	31:1 [2]		
9.3.10 [1]:	53:3 [2]			
9.3.11 [1]:	42:4 [1.75]			
Goal 10 [2]:				
10A,B [2]:				
10.3.01 [2]:	20:5 [2]	21:4 [2]	38:5 [1.6]	72:5 [2]
10.3.02 [2]:	21:1 [2]	72:3 [2]		
10.3.03 [1]:	46:5 [1]			
10C [2]:				
10.3.04 [1]:	23:5 [1.2]	49:5 [1.4]		
10.3.05 [2]:	37:5 [1.4]	43:5 [1.8]		

Table 4.1
Categorical Concurrence Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 4 Spring 2006
Number of Assessment Items - 68

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
Goal 6 - Number Sense	2	16.8	1 2	9 7	56 43	26.6	5.95	YES
Goal 7 - Measurement	1	6	1 2	1 5	16 83	22.4	0.8	YES
Goal 8 - Algebra	3	8.2	1 2	1 7	12 87	10.2	2.04	YES
Goal 9 - Geometry	2	13	1 2	7 6	53 46	17.6	5.64	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	1 2	2 3	40 60	13	0.63	YES
Total	10	49	1 2	20 28	41 58	89.8	6.52	

Table 4.2
Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 4 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
Goal 6 - Number Sense	2	16.8	26.6	5.95	20	33	74	37	6	23	YES
Goal 7 - Measurement	1	6	22.4	0.8	24	33	54	40	22	36	YES
Goal 8 - Algebra	3	8.2	10.2	2.04	18	36	73	41	9	27	YES
Goal 9 - Geometry	2	13	17.6	5.64	7	24	84	34	9	27	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	13	0.63	9	23	87	30	5	21	YES
Total	10	49	89.8	6.52	15	31	76	38	9	26	

Table 4.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 4 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Goal 6 - Number Sense	2	16.8	26.6	5.95	14.2	0.98	84	3	YES	30	6	0.75	0.08	YES
Goal 7 - Measurement	1	6	22.4	0.8	4.2	0.4	70	7	YES	25	3	0.56	0.02	NO
Goal 8 - Algebra	3	8.2	10.2	2.04	5.4	1.2	66	16	YES	11	2	0.78	0.05	YES
Goal 9 - Geometry	2	13	17.6	5.64	10.6	0.49	82	4	YES	19	5	0.74	0.15	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	13	0.63	4.4	0.49	88	10	YES	15	1	0.64	0.02	WEAK
Total	10	49	89.8	6.52	7.76	4.05	78	13		20	8	0.69	0.11	

Table 4.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Five Reviewers
IL Mathematics Grade 4 Spring 2006
Number of Assessment Items - 68

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	NO
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	WEAK

Table 4.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 4 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	1	1	1	1	1
2	1	1	2	2	1
3	2	1	1	1	1
4	1	1	1	1	1
5	1	1	2	1	1
6	2	1	2	1	1
7	2	2	2	2	2
8	2	1	2	2	2
9	2	1	2	2	1
10	2	1	2	2	2
11	1	1	1	1	1
12	2	1	2	2	2
13	3	1	2	2	2
14	1	1	2	1	1
15	2	1	2	1	2
16	2	1	2	2	2
17	2	1	2	2	1
18	2	1	2	2	2
19	2	2	1	2	2
20	2	2	2	2	2
21	2	1	1	1	1
22	2	2	2	1	2
23	2	2	3	2	2
24	1	1	1	1	1
25	1	1	1	1	1
26	1	1	1	1	1
27	2	1	1	2	1
28	2	1	2	2	2
29	2	1	1	2	1
30	2	1	1	1	2
31	1	1	1	1	1
32	2	1	2	2	2
33	2	2	1	2	2
34	2	1	2	2	2
35	2	2	2	2	2
36	2	1	1	2	1
37	2	1	1	1	1
38	2	1	2	1	2
39	2	2	1	2	2
40	1	1	1	1	1

Table 4.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 4 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
41	1	1	1	1	1
42	2	1	1	1	1
43	1	1	1	1	1
44	2	1	2	2	2
45	1	1	1	2	1
46	2	2	2	2	2
47	2	2	2	2	2
48	1	2	1	2	2
49	2	2	2	2	2
50	2	1	2	2	2
51	1	1	1	2	1
52	2	2	2	2	2
53	2	1	1	1	1
54	1	1	1	1	1
55	1	1	1	1	1
56	1	1	1	1	1
57	2	1	1	1	1
58	1	1	1	1	1
59	2	1	2	2	2
60	2	1	1	2	1
61	2	2	2	2	2
62	1	1	1	1	1
63	2	1	1	1	1
64	1	1	2	2	1
65	2	1	2	2	2
66					
67					
68					
69					
70					
71	2	2	2	2	2
72	3	2	3	2	2
73					
74	2	3	3	3	3
75					

Intraclass Correlation: 0.8522
Pairwise Comparison: 0.6956

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 4 Spring 2006

Item	DOK 0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
1	1	6.4.02		1	6.4.02		1	6.4.01		1	6.4.02		1	6.4.02	
2	1	6.4.01		1	6.4.11		2	6.4.10		2	6.4.11		1	6.4.11	
3	2	6.4.10		1	6.4.10		1	6.4.01		1	6.4.01		1	6.4.01	
4	1	6.4.06		1	6.4.06		1	6.4.06		1	6.4.06		1	6.4.06	
5	1	6.4.03		1	6.4.03		2	6.4.03		1	6.4.03		1	6.4.03	
6	2	6.4.03		1	6.4.03		2	6.4.07		1	6.4.03		1	6.4.03	
7	2	6.4.09		2	6.4.09		2	6.4.09		2	6.4.09		2	6.4.09	
8	2	6.4.10		1	6.4.10		2	6.4.10		2	6.4.10		2	8.4.08	
9	2	6.4.16		1	6.4.16		2	6.4.16		2	6.4.16		1	6.4.10	
10	2	10.4.01		1	8.4.06		2	8.4.06		2	8.4.06	10.4.01	2	8.4.06	10.4.01
11	1	6.4.15		1	6.4.15		1	6.4.15		1	6.4.12		1	6.4.15	
12	2	6.4.16		1	6.4.16		2	6.4.09		2	6.4.10		2	6.4.16	
13	3	6.4.10		1	6B,C		2	6.4.10		2	6B,C		2	8.4.08	
14	1	6B,C		1	6B,C		2	8.4.07		1	6B,C		1	8.4.07	
15	2	8.4.01		1	8.4.01		2	8.4.01		1	8.4.01		2	8.4.01	
16	2	8.4.01		1	8.4.01		2	8.4.01		2	8.4.01		2	8.4.01	
17	2	8.4.03		1	8.4.08	8.4.03	2	8.4.08		2	8.4.08		1	8.4.03	
18	2	6.4.11		1	6.4.12		2	6.4.11		2	6.4.10		2	6.4.10	
19	2	10.4.01		2	10.4.01		1	10.4.01		2	10.4.01		2	10.4.01	
20	2	10.4.01		2	10.4.01		2	10.4.01		2	10.4.01	6.4.10	2	10.4.01	
21	2	10.4.04		1	10.4.04		1	10.4.04		1	10.4.04		1	10.4.04	
22	2	10.4.05		2	10.4.05		2	10.4.05		1	10.4.05		2	10.4.05	
23	2	9.4.11		2	9.4.11		3	9.4.11		2	9.4.11		2	9.4.11	
24	1	9.4.04		1	9.4.04		1	9.4.04		1	9.4.04		1	9.4.04	
25	1	9.4.07		1	9.4.07		1	9.4.07		1	9.4.07		1	9.4.07	
26	1	7.4.02		1	7.4.02		1	7.4.02		1	7.4.02		1	7.4.02	
27	2	7.4.01		1	7.4.01		1	7.4.01		2	7.4.01		1	7.4.01	
28	2	7.4.03		1	7.4.02		2	7.4.02		2	7.4.02		2	7.4.02	
29	2	7.4.03		1	7.4.03		1	7.4.03		2	7.4.03		1	7.4.03	
30	2	7.4.02		1	7.4.02		1	7.4.02		1	7.4.02		2	7.4.02	
31	1	6.4.09		1	6.4.09		1	6.4.09		1	6.4.09		1	6.4.09	
32	2	9.4.02		1	9.4.02		2	9.4.02		2	9.4.09		2	9.4.02	
33	2	8.4.08		2	Goal 6		1	7.4.04		2	Goal 8	8.4.08	2	8.4.08	
34	2	6.4.14		1	6.4.14		2	6.4.14		2	6.4.14		2	6.4.14	
35	2	7.4.03		2	7.4.03		2	7.4.03		2	7.4.03		2	7.4.03	
36	2	9.4.03		1	9.4.03		1	9.4.03		2	9.4.03		1	9.4.03	
37	2	8.4.03		1	8.4.03	8.4.07	1	8.4.03		1	6.4.10		1	8.4.03	

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 4 Spring 2006

Item	DOK 0	PObj0	S1Obj0	DOK 1	PObj1	S1Obj1	DOK 2	PObj2	S1Obj2	DOK 3	PObj3	S1Obj3	DOK 4	PObj4	S1Obj4
38	2	10.4.05		1	10.4.05		2	10.4.05		1	10.4.05		2	10.4.05	
39	2	8.4.04		2	8.4.04		1	10.4.01		2	10.4.01		2	8.4.04	
40	1	6.4.01		1	6.4.01		1	6.4.02		1	6.4.01		1	6.4.01	
41	1	6.4.05		1	6.4.05		1	6.4.05		1	6.4.05		1	6.4.05	
42	2	9.4.02		1	9.4.01		1	9.4.02		1	9.4.01		1	9.4.01	
43	1	9.4.12		1	9.4.12		1	9.4.12		1	9.4.12		1	9.4.12	
44	2	9.4.06		1	9.4.06		2	9.4.06		2	9.4.06		2	9.4.06	
45	1	6.4.04		1	6.4.04		1	6.4.04		2	6.4.04		1	6.4.04	
46	2	10.4.01		2	10.4.01		2	10.4.01		2	10.4.01		2	10.4.01	
47	2	6.4.10		2	6.4.12		2	6.4.16		2	6.4.10		2	6.4.10	
48	1	6.4.03		2	6.4.03		1	6.4.03		2	6.4.03		2	6.4.03	
49	2	8.4.08		2	Goal 6		2	7.4.04		2	Goal 8	8.4.08	2	8.4.08	
50	2	9.4.05		1	9.4.05		2	9.4.05		2	9.4.05		2	9.4.05	
51	1	6.4.10		1	9.4.13		1	9.4.13		2	9.4.13		1	9.4.13	
52	2	6.4.11		2	6.4.16		2	6.4.16		2	6.4.10		2	6.4.16	
53	2	7.4.01		1	7.4.01		1	7.4.01		1	7.4.01		1	7.4.01	
54	1	9.4.04		1	9.4.04		1	9.4.04		1	9.4.04		1	9.4.04	
55	1	6.4.08		1	6.4.08		1	6.4.08		1	6.4.08		1	6.4.08	
56	1	10.4.03		1	10.4.03		1	10.4.03		1	10.4.03		1	10.4.03	
57	2	7.4.01		1	7.4.01		1	7.4.01		1	7.4.01		1	7.4.01	
58	1	9.4.03		1	9.4.03		1	9.4.03		1	9.4.03		1	9.4.03	
59	2	10.4.01		1	10.4.01		2	10.4.01		2	10.4.01		2	10.4.01	
60	2	6.4.14		1	6.4.14		1	6.4.14		2	6.4.14		1	6.4.14	
61	2	10.4.02		2	10.4.01		2	10.4.01		2	10.4.01		2	10.4.02	8.4.05
62	1	9.4.08		1	9.4.08		1	9.4.08		1	9.4.08		1	9.4.08	
63	2	10.4.05		1	10.4.04		1	10.4.04		1	10.4.04		1	10.4.04	
64	1	7.4.03		1	7.4.03		2	7.4.03		2	7.4.03		1	7.4.03	
65	2	7.4.05		1	7.4.05		2	7.4.05		2	7.4.05		2	7.4.05	
66															
67															
68															
69															
70															
71	2	10.4.01		2	10.4.01		2	10.4.01		2	10.4.01		2	10.4.01	
72	3	8.4.01		2	8.4.01		3	8.4.04		2	8.4.01		2	8.4.01	
73															
74	2	9.4.01	7.4.03	3	7.4.03		3	7.4.03		3	7.4.03	6.4.09	3	7.4.03	9.4.03

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 4 Spring 2006

Item	DOK 0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
75															

Objective Pairwise Comparison: 0.7007
Standard Pairwise Comparison: 0.9062

Table 4.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 4 Spring 2006

Low		Medium		High
0		5.986667		96

1	6.4.01	6.4.02	6.4.02	6.4.02	6.4.02		
2	6.4.01	6.4.10	6.4.11	6.4.11	6.4.11		
3	6.4.01	6.4.01	6.4.01	6.4.10	6.4.10		
4	6.4.06	6.4.06	6.4.06	6.4.06	6.4.06		
5	6.4.03	6.4.03	6.4.03	6.4.03	6.4.03		
6	6.4.03	6.4.03	6.4.03	6.4.03	6.4.07		
7	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09		
8	6.4.10	6.4.10	6.4.10	6.4.10	8.4.08		
9	6.4.10	6.4.16	6.4.16	6.4.16	6.4.16		
10	8.4.06	8.4.06	8.4.06	8.4.06	10.4.01	10.4.01	10.4.01
11	6.4.12	6.4.15	6.4.15	6.4.15	6.4.15		
12	6.4.09	6.4.10	6.4.16	6.4.16	6.4.16		
13	6B,C	6B,C	6.4.10	6.4.10	8.4.08		
14	6B,C	6B,C	6B,C	8.4.07	8.4.07		
15	8.4.01	8.4.01	8.4.01	8.4.01	8.4.01		
16	8.4.01	8.4.01	8.4.01	8.4.01	8.4.01		
17	8.4.03	8.4.03	8.4.03	8.4.08	8.4.08	8.4.08	
18	6.4.10	6.4.10	6.4.11	6.4.11	6.4.12		
19	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01		
20	6.4.10	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01	
21	10.4.04	10.4.04	10.4.04	10.4.04	10.4.04		
22	10.4.05	10.4.05	10.4.05	10.4.05	10.4.05		
23	9.4.11	9.4.11	9.4.11	9.4.11	9.4.11		
24	9.4.04	9.4.04	9.4.04	9.4.04	9.4.04		
25	9.4.07	9.4.07	9.4.07	9.4.07	9.4.07		
26	7.4.02	7.4.02	7.4.02	7.4.02	7.4.02		
27	7.4.01	7.4.01	7.4.01	7.4.01	7.4.01		
28	7.4.02	7.4.02	7.4.02	7.4.02	7.4.03		
29	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03		
30	7.4.02	7.4.02	7.4.02	7.4.02	7.4.02		
31	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09		
32	9.4.02	9.4.02	9.4.02	9.4.02	9.4.09		
33	Goal 6	7.4.04	Goal 8	8.4.08	8.4.08	8.4.08	
34	6.4.14	6.4.14	6.4.14	6.4.14	6.4.14		
35	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03		
36	9.4.03	9.4.03	9.4.03	9.4.03	9.4.03		
37	6.4.10	8.4.03	8.4.03	8.4.03	8.4.03	8.4.07	
38	10.4.05	10.4.05	10.4.05	10.4.05	10.4.05		
39	8.4.04	8.4.04	8.4.04	10.4.01	10.4.01		
40	6.4.01	6.4.01	6.4.01	6.4.01	6.4.02		
41	6.4.05	6.4.05	6.4.05	6.4.05	6.4.05		
42	9.4.01	9.4.01	9.4.01	9.4.02	9.4.02		
43	9.4.12	9.4.12	9.4.12	9.4.12	9.4.12		
44	9.4.06	9.4.06	9.4.06	9.4.06	9.4.06		
45	6.4.04	6.4.04	6.4.04	6.4.04	6.4.04		

Table 4.9

Objectives Coded to Each Item by Reviewers

IL Mathematics Grade 4 Spring 2006

46	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01					
47	6.4.10	6.4.10	6.4.10	6.4.12	6.4.16					
48	6.4.03	6.4.03	6.4.03	6.4.03	6.4.03					
49	Goal 6	7.4.04	Goal 8	8.4.08	8.4.08	8.4.08				
50	9.4.05	9.4.05	9.4.05	9.4.05	9.4.05					
51	6.4.10	9.4.13	9.4.13	9.4.13	9.4.13					
52	6.4.10	6.4.11	6.4.16	6.4.16	6.4.16					
53	7.4.01	7.4.01	7.4.01	7.4.01	7.4.01					
54	9.4.04	9.4.04	9.4.04	9.4.04	9.4.04					
55	6.4.08	6.4.08	6.4.08	6.4.08	6.4.08					
56	10.4.03	10.4.03	10.4.03	10.4.03	10.4.03					
57	7.4.01	7.4.01	7.4.01	7.4.01	7.4.01					
58	9.4.03	9.4.03	9.4.03	9.4.03	9.4.03					
59	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01					
60	6.4.14	6.4.14	6.4.14	6.4.14	6.4.14					
61	8.4.05	10.4.01	10.4.01	10.4.01	10.4.02	10.4.02				
62	9.4.08	9.4.08	9.4.08	9.4.08	9.4.08					
63	10.4.04	10.4.04	10.4.04	10.4.04	10.4.05					
64	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03					
65	7.4.05	7.4.05	7.4.05	7.4.05	7.4.05					
66										
67										
68										
69										
70										
71	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01	10.4.01
72	8.4.01	8.4.01	8.4.01	8.4.01	8.4.01	8.4.01	8.4.01	8.4.01	8.4.04	8.4.04
73										
74	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09	6.4.09
	6.4.09	6.4.09	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	
	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	
	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	
	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	
	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	
	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	
	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	7.4.03	9.4.01	
	9.4.01	9.4.01	9.4.01	9.4.01	9.4.01	9.4.01	9.4.01	9.4.01	9.4.01	
	9.4.01	9.4.01	9.4.03	9.4.03	9.4.03	9.4.03	9.4.03	9.4.03	9.4.03	
	9.4.03	9.4.03	9.4.03	9.4.03	9.4.03					
75										

Table 4.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 4 Spring 2006

Low		Medium		High
0		7.015625		76

Goal 6	33	49																		
6A																				
6.4.01	1	2	3	3	3	40	40	40	40											
6.4.02	1	1	1	1	40															
6.4.03	5	5	5	5	5	6	6	6	6	48	48	48	48	48						
6.4.04	45	45	45	45	45															
6.4.05	41	41	41	41	41															
6.4.06	4	4	4	4	4															
6.4.07	6																			
6.4.08	55	55	55	55	55															
6.4.09	7	7	7	7	7	12	31	31	31	31	31	74	74	74	74	74	74	74	74	74
	74	74	74																	
6B,C	13	13	14	14	14															
6.4.10	2	3	3	8	8	8	8	9	12	13	13	18	18	20	37	47	47	47	51	52
6.4.11	2	2	2	18	18	52														
6.4.12	11	18	47																	
6.4.13																				
6.4.14	34	34	34	34	34	60	60	60	60	60										
6.4.15	11	11	11	11																
6.4.16	9	9	9	9	12	12	12	47	52	52	52									
Goal 7																				
7A,B,C																				
7.4.01	27	27	27	27	27	53	53	53	53	53	57	57	57	57	57					
7.4.02	26	26	26	26	26	28	28	28	28	30	30	30	30	30						
7.4.03	28	29	29	29	29	29	35	35	35	35	35	64	64	64	64	64	74	74	74	74
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74		
7.4.04	33	49																		
7.4.05	65	65	65	65	65															
7.4.06																				
Goal 8	33	49																		
8A																				
8.4.01	15	15	15	15	15	16	16	16	16	16	72	72	72	72	72	72	72	72		
8.4.02																				
8.4.03	17	17	17	37	37	37	37													
8B																				

Table 4.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 4 Spring 2006

8.4.04	39	39	39	72	72															
8.4.05	61																			
8C,D																				
8.4.06	10	10	10	10																
8.4.07	14	14	37																	
8.4.08	8	13	17	17	17	33	33	33	49	49	49									
Goal 9																				
9A																				
9.4.01	42	42	42	74	74	74	74	74	74	74	74	74	74	74	74					
9.4.02	32	32	32	32	42	42														
9.4.03	36	36	36	36	36	58	58	58	58	58	74	74	74	74	74	74	74	74	74	74
	74	74																		
9.4.04	24	24	24	24	24	54	54	54	54	54										
9.4.05	50	50	50	50	50															
9.4.06	44	44	44	44	44															
9.4.07	25	25	25	25	25															
9.4.08	62	62	62	62	62															
9B																				
9.4.09	32																			
9.4.10																				
9.4.11	23	23	23	23	23															
9.4.12	43	43	43	43	43															
9.4.13	51	51	51	51																
Goal 10																				
10A,B																				
10.4.01	10	10	10	19	19	19	19	19	20	20	20	20	20	39	39	46	46	46	46	46
	59	59	59	59	59	61	61	61	71	71	71	71	71	71	71	71	71	71		
10.4.02	61	61																		
10.4.03	56	56	56	56	56															
10C																				
10.4.04	21	21	21	21	21	63	63	63	63											
10.4.05	22	22	22	22	22	38	38	38	38	38	63									

Table 4.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 4 Spring 2006

Low		Medium		High
1		2		5

Goal 6	33:1	49:1										
6A												
6.4.01	1:1	2:1	3:3	40:4								
6.4.02	1:4	40:1										
6.4.03	5:5	6:4	48:5									
6.4.04	45:5											
6.4.05	41:5											
6.4.06	4:5											
6.4.07	6:1											
6.4.08	55:5											
6.4.09	7:5	12:1	31:5	74:1								
6B,C	13:2	14:3										
6.4.10	2:1	3:2	8:4	9:1	12:1	13:2	18:2	20:1	37:1	47:3	51:1	52:1
6.4.11	2:3	18:2	52:1									
6.4.12	11:1	18:1	47:1									
6.4.13												
6.4.14	34:5	60:5										
6.4.15	11:4											
6.4.16	9:4	12:3	47:1	52:3								
Goal 7												
7A,B,C												
7.4.01	27:5	53:5	57:5									
7.4.02	26:5	28:4	30:5									
7.4.03	28:1	29:5	35:5	64:5	74:5							
7.4.04	33:1	49:1										
7.4.05	65:5											
7.4.06												
Goal 8	33:1	49:1										
8A												
8.4.01	15:5	16:5	72:4									
8.4.02												
8.4.03	17:3	37:4										
8B												
8.4.04	39:3	72:1										
8.4.05	61:1											
8C,D												
8.4.06	10:4											
8.4.07	14:2	37:1										

Table 4.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 4 Spring 2006

8.4.08	8:1	13:1	17:3	33:3	49:3			
Goal 9								
9A								
9.4.01	42:3	74:1						
9.4.02	32:4	42:2						
9.4.03	36:5	58:5	74:1					
9.4.04	24:5	54:5						
9.4.05	50:5							
9.4.06	44:5							
9.4.07	25:5							
9.4.08	62:5							
9B								
9.4.09	32:1							
9.4.10								
9.4.11	23:5							
9.4.12	43:5							
9.4.13	51:4							
Goal 10								
10A,B								
10.4.01	10:3	19:5	20:5	39:2	46:5	59:5	61:3	71:5
10.4.02	61:2							
10.4.03	56:5							
10C								
10.4.04	21:5	63:4						
10.4.05	22:5	38:5	63:1					

Table 4.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 4 Spring 2006

Low		Medium		High
1		2		5

1	6.4.01:1	6.4.02:4		
2	6.4.01:1	6.4.10:1	6.4.11:3	
3	6.4.01:3	6.4.10:2		
4	6.4.06:5			
5	6.4.03:5			
6	6.4.03:4	6.4.07:1		
7	6.4.09:5			
8	6.4.10:4	8.4.08:1		
9	6.4.10:1	6.4.16:4		
10	8.4.06:4	10.4.01:3		
11	6.4.12:1	6.4.15:4		
12	6.4.09:1	6.4.10:1	6.4.16:3	
13	6B,C:2	6.4.10:2	8.4.08:1	
14	6B,C:3	8.4.07:2		
15	8.4.01:5			
16	8.4.01:5			
17	8.4.03:3	8.4.08:3		
18	6.4.10:2	6.4.11:2	6.4.12:1	
19	10.4.01:5			
20	6.4.10:1	10.4.01:5		
21	10.4.04:5			
22	10.4.05:5			
23	9.4.11:5			
24	9.4.04:5			
25	9.4.07:5			
26	7.4.02:5			
27	7.4.01:5			
28	7.4.02:4	7.4.03:1		
29	7.4.03:5			
30	7.4.02:5			
31	6.4.09:5			
32	9.4.02:4	9.4.09:1		
33	Goal 6:1	7.4.04:1	Goal 8:1	8.4.08:3
34	6.4.14:5			
35	7.4.03:5			
36	9.4.03:5			
37	6.4.10:1	8.4.03:4	8.4.07:1	
38	10.4.05:5			

Table 4.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 4 Spring 2006

39	8.4.04:3	10.4.01:2		
40	6.4.01:4	6.4.02:1		
41	6.4.05:5			
42	9.4.01:3	9.4.02:2		
43	9.4.12:5			
44	9.4.06:5			
45	6.4.04:5			
46	10.4.01:5			
47	6.4.10:3	6.4.12:1	6.4.16:1	
48	6.4.03:5			
49	Goal 6:1	7.4.04:1	Goal 8:1	8.4.08:3
50	9.4.05:5			
51	6.4.10:1	9.4.13:4		
52	6.4.10:1	6.4.11:1	6.4.16:3	
53	7.4.01:5			
54	9.4.04:5			
55	6.4.08:5			
56	10.4.03:5			
57	7.4.01:5			
58	9.4.03:5			
59	10.4.01:5			
60	6.4.14:5			
61	8.4.05:1	10.4.01:3	10.4.02:2	
62	9.4.08:5			
63	10.4.04:4	10.4.05:1		
64	7.4.03:5			
65	7.4.05:5			
66				
67				
68				
69				
70				
71	10.4.01:5			
72	8.4.01:4	8.4.04:1		
73				
74	6.4.09:1	7.4.03:5	9.4.01:1	9.4.03:1
75				

Low DOK		Matched DOK		High DOK
1		2		5

Goal 6 [1]:	33:1 [2]	49:1 [2]									
6A [1]:											
6.4.01 [1]:	1:1 [1]	2:1 [1]	3:3 [1]	40:4 [1]							
6.4.02 [1]:	1:4 [1]	40:1 [1]									
6.4.03 [2]:	5:5 [1.2]	6:4 [1.25]	48:5 [1.6]								
6.4.04 [1]:	45:5 [1.2]										
6.4.05 [1]:	41:5 [1]										
6.4.06 [1]:	4:5 [1]										
6.4.07 [1]:	6:1 [2]										
6.4.08 [1]:	55:5 [1]										
6.4.09 [2]:	7:5 [2]	12:1 [2]	31:5 [1]	74:1 [3]							
6B,C [2]:	13:2 [1.5]	14:3 [1]									
6.4.10 [2]:	2:1 [2]	3:2 [1.5]	8:4 [1.75]	9:1 [1]	12:1 [2]	13:2 [2.5]	18:2 [2]	20:1 [2]	37:1 [1]	47:3 [2]	
6.4.11 [2]:	2:3 [1.33]	18:2 [2]	52:1 [2]								
6.4.12 [1]:	11:1 [1]	18:1 [1]	47:1 [2]								
6.4.13 [2]:											
6.4.14 [2]:	34:5 [1.8]	60:5 [1.4]									
6.4.15 [1]:	11:4 [1]										
6.4.16 [2]:	9:4 [1.75]	12:3 [1.67]	47:1 [2]	52:3 [2]							
Goal 7 [2]:											
7A,B,C [2]:											
7.4.01 [1]:	27:5 [1.4]	53:5 [1.2]	57:5 [1.2]								

7.4.02 [2]:	26:5 [1]	28:4 [1.75]	30:5 [1.4]		
7.4.03 [2]:	28:1 [2]	29:5 [1.4]	35:5 [2]	64:5 [1.4]	74:5 [2.8]
7.4.04 [2]:	33:1 [1]	49:1 [2]			
7.4.05 [2]:	65:5 [1.8]				
7.4.06 [2]:					
Goal 8 [2]:	33:1 [2]	49:1 [2]			
8A [2]:					
8.4.01 [2]:	15:5 [1.6]	16:5 [1.8]	72:4 [2.25]		
8.4.02 [2]:					
8.4.03 [1]:	17:3 [1.33]	37:4 [1.25]			
8B [2]:					
8.4.04 [2]:	39:3 [2]	72:1 [3]			
8.4.05 [2]:	61:1 [2]				
8C,D [2]:					
8.4.06 [2]:	10:4 [1.75]				
8.4.07 [2]:	14:2 [1.5]	37:1 [1]			
8.4.08 [2]:	8:1 [2]	13:1 [2]	17:3 [1.67]	33:3 [2]	49:3 [2]
Goal 9 [1]:					
9A [1]:					
9.4.01 [1]:	42:3 [1]	74:1 [2]			
9.4.02 [2]:	32:4 [1.75]	42:2 [1.5]			
9.4.03 [1]:	36:5 [1.4]	58:5 [1]	74:1 [3]		
9.4.04 [1]:	24:5 [1]	54:5 [1]			
9.4.05 [2]:	50:5 [1.8]				
9.4.06 [2]:	44:5 [1.8]				
9.4.07 [1]:	25:5 [1]				

9.4.08 [1]:	62:5 [1]							
9B [2]:								
9.4.09 [2]:	32:1 [2]							
9.4.10 [2]:								
9.4.11 [2]:	23:5 [2.2]							
9.4.12 [1]:	43:5 [1]							
9.4.13 [1]:	51:4 [1.25]							
Goal 10 [2]:								
10A,B [2]:								
10.4.01 [2]:	10:3 [2]	19:5 [1.8]	20:5 [2]	39:2 [1.5]	46:5 [2]	59:5 [1.8]	61:3 [2]	71:5 [2]
10.4.02 [2]:	61:2 [2]							
10.4.03 [1]:	56:5 [1]							
10C [2]:								
10.4.04 [1]:	21:5 [1.2]	63:4 [1]						
10.4.05 [2]:	22:5 [1.8]	38:5 [1.6]	63:1 [2]					

Table 5.1
Categorical Concurrence Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 5 Spring 2006
Number of Assessment Items - 68

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
Goal 6 - Number Sense	3	19.4	1 2	7 12	36 63	36.4	4.72	YES
Goal 7 - Measurement	1	7.2	1 2	2 5	28 71	10.6	0.49	YES
Goal 8 - Algebra	3	9.6	1 2	2 7	22 77	11.8	1.17	YES
Goal 9 - Geometry	2	15.8	1 2	7 8	46 53	17.2	2.48	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	1 2 3	1 3 1	20 60 20	10.4	0.8	YES
Total	11	57	1 2 3	19 35 1	34 63 1	86.4	6.28	

Table 5.2
Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 5 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
Goal 6 - Number Sense	3	19.4	36.4	4.72	20	35	70	41	10	28	YES
Goal 7 - Measurement	1	7.2	10.6	0.49	15	32	67	43	19	37	YES
Goal 8 - Algebra	3	9.6	11.8	1.17	11	28	83	33	7	20	YES
Goal 9 - Geometry	2	15.8	17.2	2.48	10	30	74	43	16	35	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	10.4	0.8	31	41	62	43	8	24	YES
Total	11	57	86.4	6.28	16	33	72	41	12	31	

Table 5.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 5 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Goal 6 - Number Sense	3	19.4	36.4	4.72	11.8	0.75	61	4	YES	42	3	0.60	0.05	WEAK
Goal 7 - Measurement	1	7.2	10.6	0.49	6.4	0.49	89	6	YES	12	1	0.82	0.02	YES
Goal 8 - Algebra	3	9.6	11.8	1.17	7.6	0.8	79	6	YES	14	1	0.83	0.03	YES
Goal 9 - Geometry	2	15.8	17.2	2.48	11.8	1.47	74	8	YES	20	2	0.81	0.04	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	5	10.4	0.8	4	0	80	0	YES	12	1	0.79	0.02	YES
Total	11	57	86.4	6.28	8.32	3.18	77	11		20	12	0.77	0.09	

Table 5.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Five Reviewers
IL Mathematics Grade 5 Spring 2006
Number of Assessment Items - 68

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
Goal 6 - Number Sense	YES	YES	YES	WEAK
Goal 7 - Measurement	YES	YES	YES	YES
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 5 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	1	1	1	2	1
2	1	1	2	1	1
3	1	1	1	1	1
4	2	1	2	2	2
5	2	1	2	1	2
6	2	2	2	2	2
7	2	2	2	2	2
8	1	1	1	1	1
9	2	2	2	2	2
10	2	2	2	2	2
11	2	2	2	2	2
12	2	2	2	2	2
13	2	2	2	2	2
14	2	2	2	2	2
15	2	3	2	2	2
16	2	2	2	2	2
17	1	1	2	1	1
18	2	1	2	2	2
19	2	1	2	1	2
20	1	1	1	2	1
21	2	1	2	1	2
22	2	2	2	2	2
23	2	1	2	2	2
24	1	1	1	1	1
25	1	2	1	1	2
26	2	1	2	2	2
27	2	2	2	1	2
28	2	2	2	2	2
29	2	2	2	2	2
30	2	1	2	2	1
31	1	1	1	2	1
32	1	1	1	2	1
33	2	1	1	1	1
34	2	2	2	2	2
35	1	1	2	2	2
36	2	2	2	2	2
37	2	1	2	2	2
38	2	1	2	2	2
39	2	2	2	2	2
40	1	1	1	2	2

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 5 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
41	2	2	2	1	2
42	2	2	2	2	2
43	1	1	2	2	2
44	1	2	1	1	1
45	2	1	2	2	1
46	2	2	2	2	1
47	2	1	2	2	1
48	2	1	1	2	1
49	2	2	2	2	2
50	2	1	1	2	1
51	2	2	2	2	2
52	2	1	2	2	2
53	2	1	2	2	2
54	2	2	2	2	2
55	2	2	2	2	1
56	2	1	2	2	1
57	2	1	2	2	1
58	2	2	2	2	2
59	1	2	1	2	1
60	2	2	2	2	2
61	1	1	2	2	2
62	2	1	2	2	2
63	2	2	2	2	2
64	1	1	1	1	1
65	1	1	1	2	1
66					
67					
68					
69					
70					
71	1	1	2	2	1
72	2	2	2	2	2
73					
74	3	2	3	3	3
75					

Intraclass Correlation: 0.7942
Pairwise Comparison: 0.7088

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 5 Spring 2006

Item	DOK 0	PObj 0	S1Obj0	S2Obj0	DOK 1	PObj 1	S1Obj1	DOK 2	PObj 2	S1Obj2	S2Obj2	DOK 3	PObj 3	S1Obj3	S2Obj3	DOK 4	PObj 4	S1Obj4	S2Obj4
1	1	6.5.01			1	6.5.01		1	6.5.01			2	6.5.01			1	6.5.01		
2	1	6.5.11			1	6.5.11		2	6.5.11			1	6.5.11			1	6.5.11		
3	1	6.5.16			1	6.5.16		1	6.5.07			1	6.5.07			1	6.5.16		
4	2	6.5.04			1	6.5.04		2	6.5.04			2	6.5.04			2	6.5.04		
5	2	6.5.03			1	6.5.09		2	6.5.09			1	6.5.09			2	6.5.09		
6	2	6.5.03			2	6.5.03		2	6.5.03			2	6.5.03			2	6.5.03		
7	2	6.5.11			2	6.5.11		2	6.5.11			2	6.5.11			2	6.5.11		
8	1	6.5.15			1	6.5.15		1	6.5.15			1	6.5.15			1	6.5.15		
9	2	6.5.12			2	6.5.16		2	6.5.16			2	6.5.16			2	6.5.16		
10	2	6.5.13			2	6B,C		2	6.5.12			2	6.5.13			2	6.5.13		
11	2	6B,C			2	8.5.03		2	8.5.03			2	8.5.03			2	8.5.03		
12	2	6.5.16			2	6B,C		2	6.5.16			2	6.5.16			2	6.5.03		
13	2	8.5.09			2	6.5.18		2	7.5.04			2	Goal 8			2	8.5.09		
14	2	6.5.18			2	6.5.16		2	6.5.16			2	6.5.16			2	6.5.16		
15	2	8.5.02			3	10.5.01		2	8.5.05			2	8.5.02			2	8.5.02		
16	2	8.5.02			2	8.5.02		2	8.5.02			2	8.5.02			2	8.5.02		
17	1	8.5.04			1	6.5.12	6.5.11	2	6.5.11			1	8C,D			1	8.5.04		
18	2	10.5.01			1	10.5.01		2	10.5.01			2	10.5.01			2	10.5.01		
19	2	10.5.01			1	6.5.04		2	6.5.04			1	6.5.04			2	10.5.01		
20	1	10.5.			1	10.5.		1	10.5.			2	10.5.			1	10.5.		

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 5 Spring 2006

Item	DOK 0	PObj 0	S1Obj0	S2Obj0	DOK 1	PObj 1	S1Obj1	DOK 2	PObj 2	S1Obj2	S2Obj2	DOK 3	PObj 3	S1Obj3	S2Obj3	DOK 4	PObj 4	S1Obj4	S2Obj4
		03				03			03				03				03		
21	2	10.5.04			1	10.5.04		2	10.5.04			1	10.5.04			2	10.5.04		
22	2	10.5.05			2	10.5.05		2	10.5.05			2	10.5.05			2	10.5.05		
23	2	9.5.11			1	9.5.11		2	9.5.11			2	9.5.11			2	9.5.11		
24	1	9.5.05			1	9.5.05		1	9.5.05			1	9.5.05			1	9.5.05		
25	1	9.5.09	9.5.08	9.5.01	2	9.5.01		1	9.5.08			1	9.5.01			2	9.5.01		
26	2	9.5.07			1	9.5.07		2	9.5.07			2	9.5.08			2	9.5.07		
27	2	7.5.02			2	7.5.02		2	7.5.02			1	7.5.02			2	7.5.02		
28	2	7.5.07			2	7.5.07		2	7.5.07			2	7.5.02	7.5.07	6.5.16	2	7.5.07	7.5.02	
29	2	7.5.02			2	7.5.02		2	7.5.02			2	7.5.07			2	7.5.02		
30	2	7.5.03			1	7.5.03		2	7.5.03			2	7.5.03			1	7.5.03		
31	1	8.5.04			1	8.5.04		1	8.5.04			2	8.5.04			1	8.5.04		
32	1	9.5.09			1	9.5.09		1	9.5.09			2	9.5.09			1	9.5.09		
33	2	7.5.01			1	7.5.01		1	7.5.01			1	7.5.01			1	7.5.01		
34	2	6.5.03			2	6.5.14		2	6.5.14			2	6.5.14			2	6.5.14		
35	1	9.5.01			1	9.5.12		2	9.5.12			2	9.5.12			2	9.5.12		
36	2	10.5.04			2	10.5.04		2	10.5.04			2	10.5.04			2	10.5.04		
37	2	8.5.05			1	8.5.05		2	8.5.05			2	8.5.05			2	8.5.05		
38	2	10.5.01			1	10.5.01		2	10.5.01			2	10.5.01			2	10.5.01		
39	2	6.5.12			2	6.5.12		2	6.5.12			2	6.5.12			2	6.5.12		

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 5 Spring 2006

Item	DOK 0	PObj 0	S1Obj0	S2Obj0	DOK 1	PObj 1	S1Obj1	DOK 2	PObj 2	S1Obj2	S2Obj2	DOK 3	PObj 3	S1Obj3	S2Obj3	DOK 4	PObj 4	S1Obj4	S2Obj4
40	1	9.5.02			1	9.5.02		1	9.5.01			2	9.5.02			2	9.5.02		
41	2	6.5.12			2	6.5.12		2	6.5.12			1	6.5.12			2	6.5.12		
42	2	7.5.03			2	7.5.03		2	7.5.03			2	7.5.03			2	7.5.03		
43	1	7.5.06			1	7.5.06		2	7.5.06			2	7.5.06			2	7.5.06		
44	1	6.5.10			2	6.5.10		1	6.5.10			1	6.5.10			1	6.5.10		
45	2	9.5.03			1	7.5.03	9.5.01	2	9.5.03			2	9.5.03			1	9.5.03		
46	2	6B,C			2	8.5.03		2	8.5.03			2	8.5.03			1	8.5.03		
47	2	6.5.12			1	6.5.12		2	6.5.12			2	6.5.12			1	6.5.12		
48	2	9.5.15			1	9.5.15		1	9.5.15			2	9.5.15			1	9.5.15		
49	2	7.5.02	6.5.18		2	6.5.12		2	6.5.13			2	7.5.01			2	7.5.01		
50	2	9A			1	7A,B,C		1	9A			2	9A			1	9A		
51	2	8.5.03			2	8.5.07		2	8.5.07			2	8.5.07			2	8.5.07		
52	2	9.5.11			1	9.5.11		2	9.5.11			2	9.5.11			2	6.5.11		
53	2	8.5.05	8A		1	8.5.01		2	8.5.01			2	8.5.01			2	8.5.02		
54	2	8.5.09			2	8.5.09		2	8.5.08			2	8.5.08			2	8.5.08		
55	2	7.5.05			2	7.5.05		2	7.5.05			2	7.5.05			1	7.5.05		
56	2	8.5.05			1	8.5.05		2	8.5.05			2	8.5.05			1	8.5.05		
57	2	10.5.04			1	10.5.04		2	10.5.04			2	10.5.04			1	10.5.04		
58	2	6.5.13			2	6.5.13		2	6.5.13			2	6.5.13			2	6.5.13		
59	1	10.5.			2	10.5.		1	10.5.			2	10.5.			1	10.5.		

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 5 Spring 2006

Item	DOK 0	PObj 0	S1Obj0	S2Obj0	DOK 1	PObj 1	S1Obj1	DOK 2	PObj 2	S1Obj2	S2Obj2	DOK 3	PObj 3	S1Obj3	S2Obj3	DOK 4	PObj 4	S1Obj4	S2Obj4
		03				03			03				03				03		
60	2	6.5.18	7.5.07		2	7.5.07		2	7.5.07			2	7.5.07			2	7.5.07		
61	1	9.5.02			1	9.5.02		2	9.5.02			2	9.5.02			2	9.5.02		
62	2	10.5.01			1	10.5.01		2	10.5.01			2	6.5.04	10.5.01		2	10.5.01		
63	2	10.5.01			2	10.5.01		2	9.5.01			2	10.5.01			2	10.5.01		
64	1	8.5.08			1	8.5.08		1	8.5.08			1	8.5.08			1	8.5.08		
65	1	9.5.13			1	9.5.13		1	9.5.13			2	9.5.13			1	9.5.13		
66																			
67																			
68																			
69																			
70																			
71	1	9.5.08	9.5.01		1	9.5.01		2	9.5.14			2	9.5.08	9.5.01		1	9.5.08		
72	2	9.5.14			2	6.5.18		2	6.5.13			2	9.5.14			2	9.5.14		
73																			
74	3	6B,C			2	6B,C		3	6.5.12			3	6.5.12	6.5.11		3	6.5.11		
75																			

Objective Pairwise Comparison: 0.623
Standard Pairwise Comparison: 0.8957

Table 5.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 5 Spring 2006

Low		Medium		High
0		5.76		72

1	6.5.01	6.5.01	6.5.01	6.5.01	6.5.01			
2	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11			
3	6.5.07	6.5.07	6.5.16	6.5.16	6.5.16			
4	6.5.04	6.5.04	6.5.04	6.5.04	6.5.04			
5	6.5.03	6.5.09	6.5.09	6.5.09	6.5.09			
6	6.5.03	6.5.03	6.5.03	6.5.03	6.5.03			
7	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11			
8	6.5.15	6.5.15	6.5.15	6.5.15	6.5.15			
9	6.5.12	6.5.16	6.5.16	6.5.16	6.5.16			
10	6B,C	6.5.12	6.5.13	6.5.13	6.5.13			
11	6B,C	8.5.03	8.5.03	8.5.03	8.5.03			
12	6.5.03	6B,C	6.5.16	6.5.16	6.5.16			
13	6.5.18	7.5.04	Goal 8	8.5.09	8.5.09			
14	6.5.16	6.5.16	6.5.16	6.5.16	6.5.18			
15	8.5.02	8.5.02	8.5.02	8.5.05	10.5.01			
16	8.5.02	8.5.02	8.5.02	8.5.02	8.5.02			
17	6.5.11	6.5.11	6.5.12	8.5.04	8.5.04	8C,D		
18	10.5.01	10.5.01	10.5.01	10.5.01	10.5.01			
19	6.5.04	6.5.04	6.5.04	10.5.01	10.5.01			
20	10.5.03	10.5.03	10.5.03	10.5.03	10.5.03			
21	10.5.04	10.5.04	10.5.04	10.5.04	10.5.04			
22	10.5.05	10.5.05	10.5.05	10.5.05	10.5.05			
23	9.5.11	9.5.11	9.5.11	9.5.11	9.5.11			
24	9.5.05	9.5.05	9.5.05	9.5.05	9.5.05			
25	9.5.01	9.5.01	9.5.01	9.5.01	9.5.08	9.5.08	9.5.09	
26	9.5.07	9.5.07	9.5.07	9.5.07	9.5.08			
27	7.5.02	7.5.02	7.5.02	7.5.02	7.5.02			
28	6.5.16	7.5.02	7.5.02	7.5.07	7.5.07	7.5.07	7.5.07	7.5.07
29	7.5.02	7.5.02	7.5.02	7.5.02	7.5.07			
30	7.5.03	7.5.03	7.5.03	7.5.03	7.5.03			
31	8.5.04	8.5.04	8.5.04	8.5.04	8.5.04			
32	9.5.09	9.5.09	9.5.09	9.5.09	9.5.09			
33	7.5.01	7.5.01	7.5.01	7.5.01	7.5.01			
34	6.5.03	6.5.14	6.5.14	6.5.14	6.5.14			
35	9.5.01	9.5.12	9.5.12	9.5.12	9.5.12			
36	10.5.04	10.5.04	10.5.04	10.5.04	10.5.04			
37	8.5.05	8.5.05	8.5.05	8.5.05	8.5.05			
38	10.5.01	10.5.01	10.5.01	10.5.01	10.5.01			

Table 5.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 5 Spring 2006

39	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12					
40	9.5.01	9.5.02	9.5.02	9.5.02	9.5.02					
41	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12					
42	7.5.03	7.5.03	7.5.03	7.5.03	7.5.03					
43	7.5.06	7.5.06	7.5.06	7.5.06	7.5.06					
44	6.5.10	6.5.10	6.5.10	6.5.10	6.5.10					
45	7.5.03	9.5.01	9.5.03	9.5.03	9.5.03	9.5.03				
46	6B,C	8.5.03	8.5.03	8.5.03	8.5.03					
47	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12					
48	9.5.15	9.5.15	9.5.15	9.5.15	9.5.15					
49	6.5.12	6.5.13	6.5.18	7.5.01	7.5.01	7.5.02				
50	7A,B,C	9A	9A	9A	9A					
51	8.5.03	8.5.07	8.5.07	8.5.07	8.5.07					
52	6.5.11	9.5.11	9.5.11	9.5.11	9.5.11					
53	8A	8.5.01	8.5.01	8.5.01	8.5.02	8.5.05				
54	8.5.08	8.5.08	8.5.08	8.5.09	8.5.09					
55	7.5.05	7.5.05	7.5.05	7.5.05	7.5.05					
56	8.5.05	8.5.05	8.5.05	8.5.05	8.5.05					
57	10.5.04	10.5.04	10.5.04	10.5.04	10.5.04					
58	6.5.13	6.5.13	6.5.13	6.5.13	6.5.13					
59	10.5.03	10.5.03	10.5.03	10.5.03	10.5.03					
60	6.5.18	7.5.07	7.5.07	7.5.07	7.5.07	7.5.07				
61	9.5.02	9.5.02	9.5.02	9.5.02	9.5.02					
62	6.5.04	10.5.01	10.5.01	10.5.01	10.5.01	10.5.01				
63	9.5.01	10.5.01	10.5.01	10.5.01	10.5.01					
64	8.5.08	8.5.08	8.5.08	8.5.08	8.5.08					
65	9.5.13	9.5.13	9.5.13	9.5.13	9.5.13					
66										
67										
68										
69										
70										
71	9.5.01	9.5.01	9.5.01	9.5.01	9.5.01	9.5.01	9.5.08	9.5.08	9.5.08	9.5.08
	9.5.08	9.5.08	9.5.14	9.5.14						
72	6.5.13	6.5.13	6.5.18	6.5.18	9.5.14	9.5.14	9.5.14	9.5.14	9.5.14	9.5.14
73										
74	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11
	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	
	6.5.11	6.5.11	6.5.11	6.5.11	6.5.11	6B,C	6B,C	6B,C	6B,C	
	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	
	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	6B,C	

Table 5.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 5 Spring 2006

	6B,C	6B,C	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12
	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12
	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	6.5.12	
75									

Table 5.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 5 Spring 2006

Low		Medium		High
0		6		43

Goal 6																				
6A																				
6.5.01	1	1	1	1	1															
6.5.02																				
6.5.03	5	6	6	6	6	6	12	34												
6.5.04	4	4	4	4	4	19	19	19	62											
6.5.05																				
6.5.06																				
6.5.07	3	3																		
6.5.08																				
6.5.09	5	5	5	5																
6.5.10	44	44	44	44	44															
6.5.11	2	2	2	2	2	7	7	7	7	7	17	17	52	74	74	74	74	74	74	74
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74			
6B,C	10	11	12	46	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
	74	74	74	74	74	74	74	74												
6.5.12	9	10	17	39	39	39	39	39	41	41	41	41	41	47	47	47	47	47	49	74
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74																
6.5.13	10	10	10	49	58	58	58	58	58	72	72									
6.5.14	34	34	34	34																
6.5.15	8	8	8	8	8															
6.5.16	3	3	3	9	9	9	9	12	12	12	14	14	14	14	28					
6D																				
6.5.17																				
6.5.18	13	14	49	60	72	72														
6.5.19																				
Goal 7																				
7A,B,C	50																			
7.5.01	33	33	33	33	33	49	49													
7.5.02	27	27	27	27	27	28	28	29	29	29	29	49								
7.5.03	30	30	30	30	30	42	42	42	42	42	45									
7.5.04	13																			
7.5.05	55	55	55	55	55															
7.5.06	43	43	43	43	43															
7.5.07	28	28	28	28	28	29	60	60	60	60	60									
Goal 8	13																			
8A	53																			

Table 5.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 5 Spring 2006

8.5.01	53	53	53																		
8.5.02	15	15	15	16	16	16	16	16	53												
8.5.03	11	11	11	11	46	46	46	46	51												
8.5.04	17	17	31	31	31	31	31														
8B																					
8.5.05	15	37	37	37	37	37	53	56	56	56	56	56									
8.5.06																					
8C,D	17																				
8.5.07	51	51	51	51																	
8.5.08	54	54	54	64	64	64	64	64													
8.5.09	13	13	54	54																	
Goal 9																					
9A	50	50	50	50																	
9.5.01	25	25	25	25	35	40	45	63	71	71	71	71	71	71							
9.5.02	40	40	40	40	61	61	61	61	61												
9.5.03	45	45	45	45																	
9.5.04																					
9.5.05	24	24	24	24	24																
9.5.06																					
9.5.07	26	26	26	26																	
9.5.08	25	25	26	71	71	71	71	71	71												
9.5.09	25	32	32	32	32	32															
9B																					
9.5.10																					
9.5.11	23	23	23	23	23	52	52	52	52												
9.5.12	35	35	35	35																	
9.5.13	65	65	65	65	65																
9.5.14	71	71	72	72	72	72	72	72													
9.5.15	48	48	48	48	48																
Goal 10																					
10A,B																					
10.5.01	15	18	18	18	18	18	19	19	38	38	38	38	38	62	62	62	62	62	63	63	
	63	63																			
10.5.02																					
10.5.03	20	20	20	20	20	59	59	59	59	59											
10C																					
10.5.04	21	21	21	21	21	36	36	36	36	36	57	57	57	57	57						
10.5.05	22	22	22	22	22																

Table 5.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 5 Spring 2006

Low		Medium		High
1		2		5

Goal 6								
6A								
6.5.01	1:5							
6.5.02								
6.5.03	5:1	6:5	12:1	34:1				
6.5.04	4:5	19:3	62:1					
6.5.05								
6.5.06								
6.5.07	3:2							
6.5.08								
6.5.09	5:4							
6.5.10	44:5							
6.5.11	2:5	7:5	17:2	52:1	74:2			
6B,C	10:1	11:1	12:1	46:1	74:2			
6.5.12	9:1	10:1	17:1	39:5	41:5	47:5	49:1	74:2
6.5.13	10:3	49:1	58:5	72:1				
6.5.14	34:4							
6.5.15	8:5							
6.5.16	3:3	9:4	12:3	14:4	28:1			
6D								
6.5.17								
6.5.18	13:1	14:1	49:1	60:1	72:1			
6.5.19								
Goal 7								
7A,B,C	50:1							
7.5.01	33:5	49:2						
7.5.02	27:5	28:2	29:4	49:1				
7.5.03	30:5	42:5	45:1					
7.5.04	13:1							
7.5.05	55:5							
7.5.06	43:5							
7.5.07	28:5	29:1	60:5					
Goal 8	13:1							
8A	53:1							
8.5.01	53:3							
8.5.02	15:3	16:5	53:1					
8.5.03	11:4	46:4	51:1					
8.5.04	17:2	31:5						

Table 5.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 5 Spring 2006

8B						
8.5.05	15:1	37:5	53:1	56:5		
8.5.06						
8C,D	17:1					
8.5.07	51:4					
8.5.08	54:3	64:5				
8.5.09	13:2	54:2				
Goal 9						
9A	50:4					
9.5.01	25:4	35:1	40:1	45:1	63:1	71:3
9.5.02	40:4	61:5				
9.5.03	45:4					
9.5.04						
9.5.05	24:5					
9.5.06						
9.5.07	26:4					
9.5.08	25:2	26:1	71:3			
9.5.09	25:1	32:5				
9B						
9.5.10						
9.5.11	23:5	52:4				
9.5.12	35:4					
9.5.13	65:5					
9.5.14	71:1	72:3				
9.5.15	48:5					
Goal 10						
10A,B						
10.5.01	15:1	18:5	19:2	38:5	62:5	63:4
10.5.02						
10.5.03	20:5	59:5				
10C						
10.5.04	21:5	36:5	57:5			
10.5.05	22:5					

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 5 Spring 2006

Low		Medium		High
1		2		5

1	6.5.01:5			
2	6.5.11:5			
3	6.5.07:2	6.5.16:3		
4	6.5.04:5			
5	6.5.03:1	6.5.09:4		
6	6.5.03:5			
7	6.5.11:5			
8	6.5.15:5			
9	6.5.12:1	6.5.16:4		
10	6B,C:1	6.5.12:1	6.5.13:3	
11	6B,C:1	8.5.03:4		
12	6.5.03:1	6B,C:1	6.5.16:3	
13	6.5.18:1	7.5.04:1	Goal 8:1	8.5.09:2
14	6.5.16:4	6.5.18:1		
15	8.5.02:3	8.5.05:1	10.5.01:1	
16	8.5.02:5			
17	6.5.11:2	6.5.12:1	8.5.04:2	8C,D:1
18	10.5.01:5			
19	6.5.04:3	10.5.01:2		
20	10.5.03:5			
21	10.5.04:5			
22	10.5.05:5			
23	9.5.11:5			
24	9.5.05:5			
25	9.5.01:4	9.5.08:2	9.5.09:1	
26	9.5.07:4	9.5.08:1		
27	7.5.02:5			
28	6.5.16:1	7.5.02:2	7.5.07:5	
29	7.5.02:4	7.5.07:1		
30	7.5.03:5			
31	8.5.04:5			
32	9.5.09:5			
33	7.5.01:5			
34	6.5.03:1	6.5.14:4		
35	9.5.01:1	9.5.12:4		
36	10.5.04:5			
37	8.5.05:5			
38	10.5.01:5			

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 5 Spring 2006

39	6.5.12:5				
40	9.5.01:1	9.5.02:4			
41	6.5.12:5				
42	7.5.03:5				
43	7.5.06:5				
44	6.5.10:5				
45	7.5.03:1	9.5.01:1	9.5.03:4		
46	6B,C:1	8.5.03:4			
47	6.5.12:5				
48	9.5.15:5				
49	6.5.12:1	6.5.13:1	6.5.18:1	7.5.01:2	7.5.02:1
50	7A,B,C:1	9A:4			
51	8.5.03:1	8.5.07:4			
52	6.5.11:1	9.5.11:4			
53	8A:1	8.5.01:3	8.5.02:1	8.5.05:1	
54	8.5.08:3	8.5.09:2			
55	7.5.05:5				
56	8.5.05:5				
57	10.5.04:5				
58	6.5.13:5				
59	10.5.03:5				
60	6.5.18:1	7.5.07:5			
61	9.5.02:5				
62	6.5.04:1	10.5.01:5			
63	9.5.01:1	10.5.01:4			
64	8.5.08:5				
65	9.5.13:5				
66					
67					
68					
69					
70					
71	9.5.01:3	9.5.08:3	9.5.14:1		
72	6.5.13:1	6.5.18:1	9.5.14:3		
73					
74	6.5.11:2	6B,C:2	6.5.12:2		
75					

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 5 Spring 2006

Low DOK		Matched DOK		High DOK
1		2		5

Goal 6 [2]:								
6A [1]:								
6.5.01 [1]:	1:5 [1.2]							
6.5.02 [2]:								
6.5.03 [2]:	5:1 [2]	6:5 [2]	12:1 [2]	34:1 [2]				
6.5.04 [2]:	4:5 [1.8]	19:3 [1.33]	62:1 [2]					
6.5.05 [1]:								
6.5.06 [1]:								
6.5.07 [1]:	3:2 [1]							
6.5.08 [1]:								
6.5.09 [2]:	5:4 [1.5]							
6.5.10 [1]:	44:5 [1.2]							
6.5.11 [2]:	2:5 [1.2]	7:5 [2]	17:2 [1.5]	52:1 [2]	74:2 [3]			
6B,C [2]:	10:1 [2]	11:1 [2]	12:1 [2]	46:1 [2]	74:2 [2.5]			
6.5.12 [2]:	9:1 [2]	10:1 [2]	17:1 [1]	39:5 [2]	41:5 [1.8]	47:5 [1.6]	49:1 [2]	74:2 [3]
6.5.13 [2]:	10:3 [2]	49:1 [2]	58:5 [2]	72:1 [2]				
6.5.14 [2]:	34:4 [2]							
6.5.15 [2]:	8:5 [1]							
6.5.16	3:3 [1]	9:4 [2]	12:3	14:4	28:1			

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 5 Spring 2006

[2]:			[2]	[2]	[2]
6D [2]:					
6.5.17 [2]:					
6.5.18 [2]:	13:1 [2]	14:1 [2]	49:1 [2]	60:1 [2]	72:1 [2]
6.5.19 [1]:					
Goal 7 [2]:					
7A,B, C [2]:	50:1 [1]				
7.5.01 [1]:	33:5 [1.2]	49:2 [2]			
7.5.02 [2]:	27:5 [1.8]	28:2 [2]	29:4 [2]	49:1 [2]	
7.5.03 [2]:	30:5 [1.6]	42:5 [2]	45:1 [1]		
7.5.04 [2]:	13:1 [2]				
7.5.05 [1]:	55:5 [1.8]				
7.5.06 [2]:	43:5 [1.6]				
7.5.07 [2]:	28:5 [2]	29:1 [2]	60:5 [2]		
Goal 8 [2]:	13:1 [2]				
8A [2]:	53:1 [2]				
8.5.01 [2]:	53:3 [1.67]				
8.5.02 [2]:	15:3 [2]	16:5 [2]	53:1 [2]		
8.5.03 [2]:	11:4 [2]	46:4 [1.75]	51:1 [2]		
8.5.04 [1]:	17:2 [1]	31:5 [1.2]			
8B [2]:					
8.5.05	15:1	37:5	53:1	56:5	

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 5 Spring 2006

[2]:	[2]	[1.8]	[2]	[1.6]		
8.5.06 [2]:						
8C,D [2]:	17:1 [1]					
8.5.07 [2]:	51:4 [2]					
8.5.08 [1]:	54:3 [2]	64:5 [1]				
8.5.09 [2]:	13:2 [2]	54:2 [2]				
Goal 9 [2]:						
9A [1]:	50:4 [1.5]					
9.5.01 [1]:	25:4 [1.5]	35:1 [1]	40:1 [1]	45:1 [1]	63:1 [2]	71:3 [1.33]
9.5.02 [2]:	40:4 [1.5]	61:5 [1.6]				
9.5.03 [2]:	45:4 [1.75]					
9.5.04 [1]:						
9.5.05 [1]:	24:5 [1]					
9.5.06 [2]:						
9.5.07 [2]:	26:4 [1.75]					
9.5.08 [1]:	25:2 [1]	26:1 [2]	71:3 [1.33]			
9.5.09 [1]:	25:1 [1]	32:5 [1.2]				
9B [2]:						
9.5.10 [2]:						
9.5.11 [2]:	23:5 [1.8]	52:4 [1.75]				
9.5.12 [2]:	35:4 [1.75]					
9.5.13	65:5					

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 5 Spring 2006

[1]:	[1.2]					
9.5.14 [2]:	71:1 [2]	72:3 [2]				
9.5.15 [1]:	48:5 [1.4]					
Goal 10 [2]:						
10A,B [2]:						
10.5.01 [3]:	15:1 [3]	18:5 [1.8]	19:2 [2]	38:5 [1.8]	62:5 [1.8]	63:4 [2]
10.5.02 [2]:						
10.5.03 [1]:	20:5 [1.2]	59:5 [1.4]				
10C [2]:						
10.5.04 [2]:	21:5 [1.6]	36:5 [2]	57:5 [1.6]			
10.5.05 [2]:	22:5 [2]					

Table 6.1
Categorical Concurrence Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 6 Spring 2006
Number of Assessment Items - 68

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
Goal 6 - Number Sense	3	21.2	1 2 3	7 13 1	33 61 4	21	1.90	YES
Goal 7 - Measurement	1	6.4	1 2	1 5	16 83	24.8	5.15	YES
Goal 8 - Algebra	3	10	1 2	2 8	20 80	15.8	0.75	YES
Goal 9 - Geometry	2	13	1 2	7 6	53 46	14.8	1.6	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	6	1 2 3	1 4 1	16 66 16	9.2	1.47	YES
Total	11	56.6	1 2 3	18 36 2	32 64 3	85.6	3.83	

Table 6.2
Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 6 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
Goal 6 - Number Sense	3	21.2	21	1.90	24	40	75	41	2	13	YES
Goal 7 - Measurement	1	6.4	24.8	5.15	26	40	60	44	13	33	YES
Goal 8 - Algebra	3	10	15.8	0.75	23	38	73	40	5	18	YES
Goal 9 - Geometry	2	13	14.8	1.6	6	20	87	32	8	26	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	6	9.2	1.47	25	42	67	44	7	23	YES
Total	11	56.6	85.6	3.83	19	37	75	40	6	23	

Table 6.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 6 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Goal 6 - Number Sense	3	21.2	21	1.90	12	1.26	57	5	YES	25	2	0.79	0.02	YES
Goal 7 - Measurement	1	6.4	24.8	5.15	5.6	0.49	88	6	YES	29	5	0.54	0.02	NO
Goal 8 - Algebra	3	10	15.8	0.75	8.2	0.75	82	7	YES	18	1	0.82	0.04	YES
Goal 9 - Geometry	2	13	14.8	1.6	10.6	0.49	82	4	YES	17	2	0.80	0.01	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	6	9.2	1.47	4.2	0.4	70	7	YES	11	2	0.76	0.02	YES
Total	11	56.6	85.6	3.83	8.12	3.02	76	13		20	7	0.74	0.10	

Table 6.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Five Reviewers
IL Mathematics Grade 6 Spring 2006
Number of Assessment Items - 68

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	NO
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Table 6.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 6 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	1	1	2	2	1
2	2	2	2	2	1
3	1	1	1	1	1
4	1	1	2	2	1
5	1	1	2	2	2
6	2	1	2	2	2
7	2	2	2	2	2
8	2	1	2	2	2
9	2	2	2	2	2
10	2	2	2	2	2
11	2	1	2	2	1
12	2	2	2	2	2
13	2	1	2	2	2
14	1	1	1	1	1
15	1	2	2	2	2
16	2	1	2	2	2
17	1	1	1	2	1
18	1	1	1	2	1
19	2	1	2	2	2
20	2	1	2	2	2
21	1	1	1	1	1
22	1	2	1	2	2
23	2	2	2	2	2
24	2	1	2	2	2
25	1	1	1	1	1
26	2	1	2	2	2
27	1	1	1	1	1
28	1	1	1	1	1
29	2	1	2	2	2
30	2	2	2	2	2
31	1	2	1	1	1
32	2	1	2	1	2
33	2	1	2	2	2
34	1	1	2	2	1
35	2	2	2	2	2
36	2	1	1	2	2
37	2	1	2	2	2
38	2	2	1	1	2
39	2	2	2	2	2
40	1	1	2	2	2

Table 6.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 6 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
41	1	1	2	2	2
42	2	1	2	2	1
43	2	1	2	2	2
44	2	2	2	2	2
45	2	1	2	2	2
46	2	2	2	2	2
47	1	1	1	1	1
48	2	2	2	2	2
49	1	1	1	1	1
50	1	1	1	2	1
51	2	1	2	2	1
52	2	2	2	2	2
53	1	1	1	1	2
54	2	2	1	1	1
55	2	1	1	2	1
56	2	2	2	2	2
57	2	2	2	1	2
58	2	1	2	2	2
59	2	2	2	2	2
60	1	1	2	2	1
61	2	3	2	2	2
62	1	1	1	1	1
63	1	1	1	1	1
64	2	1	2	1	2
65	1	1	2	1	2
66					
67					
68					
69					
70					
71	2	1	1	2	1
72	2	2	2	2	2
73					
74	2	2	3	3	2
75					

Intraclass Correlation: 0.7927
Pairwise Comparison: 0.6882

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 6 Spring 2006

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
1	1	6.6.04		1	6.6.04		2	6.6.04		2	6.6.03		1	6.6.04	
2	2	6.6.11		2	6.6.02		2	6.6.11		2	6.6.11		1	6.6.11	
3	1	6.6.05		1	6.6.01		1	6.6.05		1	6.6.05		1	6.6.05	
4	1	6.6.03		1	6.6.03		2	6.6.03		2	6.6.03		1	6.6.03	
5	1	6.6.04		1	6.6.04		2	6.6.04		2	6.6.04		2	6.6.04	
6	2	6.6.11		1	6.6.12		2	6.6.11		2	6.6.12		2	6.6.11	
7	2	6.6.13		2	6.6.17		2	6.6.17		2	6.6.17		2	6.6.17	
8	2	6.6.17		1	6.6.17		2	6.6.17		2	6.6.13		2	6.6.13	
9	2	6.6.12		2	8.6.10		2	6.6.11		2	6.6.12		2	6.6.12	
10	2	6.6.12		2	6.6.12		2	6.6.12		2	6.6.12		2	6.6.12	
11	2	6.6.16		1	6.6.16		2	6.6.16		2	6.6.16		1	6.6.16	
12	2	6.6.13		2	6.6.13		2	6.6.13		2	6.6.13		2	6.6.13	
13	2	6.6.20		1	6.6.17		2	6.6.17		2	6.6.17		2	6.6.21	
14	1	6.6.15		1	6.6.15		1	6.6.15		1	6.6.15		1	6.6.15	
15	1	6.6.03		2	6.6.18		2	6.6.18		2	6.6.18		2	6.6.18	
16	2	8.6.01		1	8.6.01		2	8.6.01		2	8.6.01		2	8.6.01	
17	1	8.6.09		1	6.6.12		1	8.6.09		2	8.6.09		1	8.6.09	
18	1	8.6.03		1	8.6.03		1	8.6.03		2	8.6.03		1	8.6.03	
19	2	10.6.01		1	10.6.01		2	10.6.01		2	10.6.01		2	10.6.01	
20	2	10.6.01		1	10.6.01		2	10.6.01		2	6.6.17		2	10.6.01	
21	1	10.6.04		1	10.6.04		1	10.6.04		1	10.6.04		1	10.6.04	
22	1	6.6.04		2	6B,C		1	10.6.05		2	10.6.05		2	6.6.19	
23	2	6.6.04	6.6.14	2	6.6.04		2	10.6.05		2	6.6.14		2	6.6.04	
24	2	9.6.06		1	9.6.06		2	9.6.06		2	9.6.06		2	9.6.06	
25	1	9.6.04		1	9.6.04		1	9.6.04		1	9.6.04		1	9.6.04	
26	2	9.6.09		1	9.6.09		2	9.6.09		2	9.6.09		2	9.6.09	
27	1	7.6.01		1	9.6.08		1	9.6.08		1	9.6.08		1	7.6.03	
28	1	7.6.02		1	7.6.02		1	7.6.02		1	7.6.02		1	7.6.02	
29	2	7.6.05		1	7.6.05		2	7.6.05		2	7.6.05		2	7.6.05	
30	2	7.6.06		2	7.6.06		2	7.6.06		2	7.6.06		2	7.6.06	
31	1	8.6.08		2	8.6.08		1	8.6.08		1	8.6.08		1	8.6.08	
32	2	10.6.01		1	10.6.01		2	10.6.01		1	10.6.01		2	10.6.01	
33	2	8.6.01		1	8.6.04		2	8.6.04		2	8.6.01		2	8.6.04	
34	1	7.6.01		1	9.6.04		2	7.6.01		2	7.6.01		1	7.6.01	
35	2	10.6.06		2	10.6.06		2	10.6.05		2	10.6.02		2	10.6.06	
36	2	8.6.05		1	8.6.05		1	8.6.05		2	8.6.05		2	8.6.06	
37	2	6.6.14		1	6.6.14		2	6.6.14		2	6.6.14		2	6.6.14	
38	2	7.6.01		2	9.6.13		1	9.6.13		1	9.6.13		2	7.6.01	

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 6 Spring 2006

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
39	2	6.6.20		2	6B,C		2	10.6.01		2	6.6.04		2	6.6.21	
40	1	9.6.09		1	9.6.09		2	9.6.09		2	9.6.09		2	9.6.09	
41	1	6.6.14		1	6.6.14		2	6.6.14		2	6.6.14		2	6.6.14	
42	2	8.6.02		1	8.6.02		2	8.6.02		2	8.6.02		1	8.6.02	
43	2	8.6.04		1	8.6.04		2	8.6.04		2	8.6.04		2	8.6.04	
44	2	9.6.03		2	9.6.03		2	9.6.03		2	9.6.03		2	9.6.03	
45	2	6.6.12		1	6.6.12		2	8.6.10		2	8.6.10		2	8.6.10	
46	2	8.6.01		2	8.6.01		2	8.6.10		2	8.6.01		2	8.6.01	
47	1	9.6.05		1	9.6.05		1	9.6.05		1	9.6.05		1	9.6.05	
48	2	7.6.06		2	7.6.06	7.6.01	2	7.6.01	7.6.06	2	7.6.06	7.6.01	2	7.6.06	
49	1	9.6.07		1	9.6.07		1	9.6.07		1	9.6.07		1	9.6.07	
50	1	10.6.04		1	10.6.04		1	10.6.04		2	10.6.04		1	10.6.04	
51	2	7A,B,C		1	7.6.02		2	7A,B,C	7.6.02	2	7.6.02		1	7.6.02	
52	2	9.6.12		2	9.6.12	6.6.19	2	9.6.12		2	9.6.12		2	9.6.12	
53	1	8.6.03		1	8.6.03		1	8.6.03		1	8.6.03		2	8.6.03	
54	2	9.6.11		2	9.6.11		1	9.6.11		1	9.6.11		1	9.6.11	
55	2	8.6.05		1	9.6.12	8.6.05	1	9.6.05		2	8.6.05		1	8.6.05	
56	2	8.6.08		2	8.6.08		2	8.6.08		2	8.6.08		2	8.6.08	
57	2	10.6.01	6.6.11	2	6.6.11		2	10.6.01		1	10.6.01		2	6.6.11	
58	2	10.6.03		1	10.6.01		2	10.6.01		2	10.6.01		2	10.6.01	
59	2	9.6.12		2	9.6.12		2	9.6.12		2	9.6.12		2	9.6.12	
60	1	7.6.01		1	7.6.01		2	7.6.01	6.6.12	2	7.6.01		1	7.6.01	
61	2	10.6.02		3	10.6.02		2	10.6.02		2	10.6.02		2	10.6.03	
62	1	8.6.09		1	8.6.09		1	8.6.09		1	8.6.07		1	8.6.09	
63	1	9.6.08		1	9.6.08		1	9.6.08		1	9.6.08		1	9.6.08	
64	2	9.6.09		1	9.6.09		2	9.6.09		1	9.6.09		2	9.6.09	
65	1	9.6.02		1	9.6.02		2	9.6.01		1	9.6.02		2	9.6.02	
66															
67															
68															
69															
70															
71	2	7.6.04		1	7.6.04		1	7.6.04		2	7.6.04		1	7.6.04	
72	2	8.6.01	8.6.04	2	8.6.01		2	8.6.01		2	8.6.01		2	8.6.01	
73															
74	2	7.6.06		2	7.6.06		3	7.6.06		3	7.6.06		2	7.6.06	7.6.01
75															

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 6 Spring 2006

Objective Pairwise Comparison: 0.7375
Standard Pairwise Comparison: 0.898

Table 6.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 6 Spring 2006

Low		Medium		High
0		5.706666		72

1	6.6.03	6.6.04	6.6.04	6.6.04	6.6.04	
2	6.6.02	6.6.11	6.6.11	6.6.11	6.6.11	
3	6.6.01	6.6.05	6.6.05	6.6.05	6.6.05	
4	6.6.03	6.6.03	6.6.03	6.6.03	6.6.03	
5	6.6.04	6.6.04	6.6.04	6.6.04	6.6.04	
6	6.6.11	6.6.11	6.6.11	6.6.12	6.6.12	
7	6.6.13	6.6.17	6.6.17	6.6.17	6.6.17	
8	6.6.13	6.6.13	6.6.17	6.6.17	6.6.17	
9	6.6.11	6.6.12	6.6.12	6.6.12	8.6.10	
10	6.6.12	6.6.12	6.6.12	6.6.12	6.6.12	
11	6.6.16	6.6.16	6.6.16	6.6.16	6.6.16	
12	6.6.13	6.6.13	6.6.13	6.6.13	6.6.13	
13	6.6.17	6.6.17	6.6.17	6.6.20	6.6.21	
14	6.6.15	6.6.15	6.6.15	6.6.15	6.6.15	
15	6.6.03	6.6.18	6.6.18	6.6.18	6.6.18	
16	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01	
17	6.6.12	8.6.09	8.6.09	8.6.09	8.6.09	
18	8.6.03	8.6.03	8.6.03	8.6.03	8.6.03	
19	10.6.01	10.6.01	10.6.01	10.6.01	10.6.01	
20	6.6.17	10.6.01	10.6.01	10.6.01	10.6.01	
21	10.6.04	10.6.04	10.6.04	10.6.04	10.6.04	
22	6.6.04	6B,C	6.6.19	10.6.05	10.6.05	
23	6.6.04	6.6.04	6.6.04	6.6.14	6.6.14	10.6.05
24	9.6.06	9.6.06	9.6.06	9.6.06	9.6.06	
25	9.6.04	9.6.04	9.6.04	9.6.04	9.6.04	
26	9.6.09	9.6.09	9.6.09	9.6.09	9.6.09	
27	7.6.01	7.6.03	9.6.08	9.6.08	9.6.08	
28	7.6.02	7.6.02	7.6.02	7.6.02	7.6.02	
29	7.6.05	7.6.05	7.6.05	7.6.05	7.6.05	
30	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	
31	8.6.08	8.6.08	8.6.08	8.6.08	8.6.08	
32	10.6.01	10.6.01	10.6.01	10.6.01	10.6.01	
33	8.6.01	8.6.01	8.6.04	8.6.04	8.6.04	
34	7.6.01	7.6.01	7.6.01	7.6.01	9.6.04	
35	10.6.02	10.6.05	10.6.06	10.6.06	10.6.06	
36	8.6.05	8.6.05	8.6.05	8.6.05	8.6.06	
37	6.6.14	6.6.14	6.6.14	6.6.14	6.6.14	
38	7.6.01	7.6.01	9.6.13	9.6.13	9.6.13	

Table 6.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 6 Spring 2006

39	6.6.04	6B,C	6.6.20	6.6.21	10.6.01					
40	9.6.09	9.6.09	9.6.09	9.6.09	9.6.09					
41	6.6.14	6.6.14	6.6.14	6.6.14	6.6.14					
42	8.6.02	8.6.02	8.6.02	8.6.02	8.6.02					
43	8.6.04	8.6.04	8.6.04	8.6.04	8.6.04					
44	9.6.03	9.6.03	9.6.03	9.6.03	9.6.03					
45	6.6.12	6.6.12	8.6.10	8.6.10	8.6.10					
46	8.6.01	8.6.01	8.6.01	8.6.01	8.6.10					
47	9.6.05	9.6.05	9.6.05	9.6.05	9.6.05					
48	7.6.01	7.6.01	7.6.01	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06		
49	9.6.07	9.6.07	9.6.07	9.6.07	9.6.07					
50	10.6.04	10.6.04	10.6.04	10.6.04	10.6.04					
51	7A,B,C	7A,B,C	7.6.02	7.6.02	7.6.02	7.6.02				
52	6.6.19	9.6.12	9.6.12	9.6.12	9.6.12	9.6.12				
53	8.6.03	8.6.03	8.6.03	8.6.03	8.6.03					
54	9.6.11	9.6.11	9.6.11	9.6.11	9.6.11					
55	8.6.05	8.6.05	8.6.05	8.6.05	9.6.05	9.6.12				
56	8.6.08	8.6.08	8.6.08	8.6.08	8.6.08					
57	6.6.11	6.6.11	6.6.11	10.6.01	10.6.01	10.6.01				
58	10.6.01	10.6.01	10.6.01	10.6.01	10.6.03					
59	9.6.12	9.6.12	9.6.12	9.6.12	9.6.12					
60	6.6.12	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01				
61	10.6.02	10.6.02	10.6.02	10.6.02	10.6.03					
62	8.6.07	8.6.09	8.6.09	8.6.09	8.6.09					
63	9.6.08	9.6.08	9.6.08	9.6.08	9.6.08					
64	9.6.09	9.6.09	9.6.09	9.6.09	9.6.09					
65	9.6.01	9.6.02	9.6.02	9.6.02	9.6.02					
66										
67										
68										
69										
70										
71	7.6.04	7.6.04	7.6.04	7.6.04	7.6.04	7.6.04	7.6.04	7.6.04	7.6.04	7.6.04
72	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01	8.6.01
	8.6.04	8.6.04								
73										
74	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01	7.6.01
	7.6.01	7.6.01	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	
	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	
	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	
	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	

Table 6.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 6 Spring 2006

	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06
	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06
	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	7.6.06	
75									

Table 6.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 6 Spring 2006

Low		Medium		High
0		5.863014		70

Goal 6																				
6A																				
6.6.01	3																			
6.6.02	2																			
6.6.03	1	4	4	4	4	4	15													
6.6.04	1	1	1	1	5	5	5	5	5	22	23	23	23	39						
6.6.05	3	3	3	3																
6.6.06																				
6.6.07																				
6.6.08																				
6.6.09																				
6.6.10																				
6.6.11	2	2	2	2	6	6	6	9	57	57	57									
6B,C	22	39																		
6.6.12	6	6	9	9	9	10	10	10	10	10	17	45	45	60						
6.6.13	7	8	8	12	12	12	12	12												
6.6.14	23	23	37	37	37	37	37	41	41	41	41	41								
6.6.15	14	14	14	14	14															
6.6.16	11	11	11	11	11															
6.6.17	7	7	7	7	8	8	8	13	13	13	20									
6D																				
6.6.18	15	15	15	15																
6.6.19	22	52																		
6.6.20	13	39																		
6.6.21	13	39																		
Goal 7																				
7A,B,C	51	51																		
7.6.01	27	34	34	34	34	38	38	48	48	48	60	60	60	60	60	74	74	74	74	74
	74	74	74	74	74	74	74													
7.6.02	28	28	28	28	28	51	51	51	51											
7.6.03	27																			
7.6.04	71	71	71	71	71	71	71	71	71	71										
7.6.05	29	29	29	29	29															
7.6.06	30	30	30	30	30	48	48	48	48	48	74	74	74	74	74	74	74	74	74	74
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74								
Goal 8																				

Table 6.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 6 Spring 2006

8A																				
8.6.01	16	16	16	16	16	33	33	46	46	46	46	72	72	72	72	72	72	72	72	72
	72																			
8.6.02	42	42	42	42	42															
8.6.03	18	18	18	18	18	53	53	53	53	53										
8B																				
8.6.04	33	33	33	43	43	43	43	43	72	72										
8.6.05	36	36	36	36	55	55	55	55												
8.6.06	36																			
8.6.07	62																			
8C,D																				
8.6.08	31	31	31	31	31	56	56	56	56	56										
8.6.09	17	17	17	17	62	62	62	62												
8.6.10	9	45	45	45	46															
Goal 9																				
9A																				
9.6.01	65																			
9.6.02	65	65	65	65																
9.6.03	44	44	44	44	44															
9.6.04	25	25	25	25	25	34														
9.6.05	47	47	47	47	47	55														
9.6.06	24	24	24	24	24															
9.6.07	49	49	49	49	49															
9.6.08	27	27	27	63	63	63	63	63												
9B																				
9.6.09	26	26	26	26	26	40	40	40	40	40	64	64	64	64	64					
9.6.10																				
9.6.11	54	54	54	54	54															
9.6.12	52	52	52	52	52	55	59	59	59	59	59									
9.6.13	38	38	38																	
Goal 10																				
10A,B																				
10.6.01	19	19	19	19	19	20	20	20	20	32	32	32	32	32	39	57	57	57	58	58
	58	58																		
10.6.02	35	61	61	61	61															
10.6.03	58	61																		
10.6.04	21	21	21	21	21	50	50	50	50	50										
10C																				
10.6.05	22	22	23	35																
10.6.06	35	35	35																	

Table 6.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 6 Spring 2006

Low		Medium		High
1		2		5

Goal 6						
6A						
6.6.01	3:1					
6.6.02	2:1					
6.6.03	1:1	4:5	15:1			
6.6.04	1:4	5:5	22:1	23:3	39:1	
6.6.05	3:4					
6.6.06						
6.6.07						
6.6.08						
6.6.09						
6.6.10						
6.6.11	2:4	6:3	9:1	57:3		
6B,C	22:1	39:1				
6.6.12	6:2	9:3	10:5	17:1	45:2	60:1
6.6.13	7:1	8:2	12:5			
6.6.14	23:2	37:5	41:5			
6.6.15	14:5					
6.6.16	11:5					
6.6.17	7:4	8:3	13:3	20:1		
6D						
6.6.18	15:4					
6.6.19	22:1	52:1				
6.6.20	13:1	39:1				
6.6.21	13:1	39:1				
Goal 7						
7A,B,C	51:2					
7.6.01	27:1	34:4	38:2	48:3	60:5	74:1
7.6.02	28:5	51:4				
7.6.03	27:1					
7.6.04	71:5					
7.6.05	29:5					
7.6.06	30:5	48:5	74:5			
Goal 8						
8A						
8.6.01	16:5	33:2	46:4	72:5		
8.6.02	42:5					
8.6.03	18:5	53:5				

Table 6.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 6 Spring 2006

8B						
8.6.04	33:3	43:5	72:1			
8.6.05	36:4	55:4				
8.6.06	36:1					
8.6.07	62:1					
8C,D						
8.6.08	31:5	56:5				
8.6.09	17:4	62:4				
8.6.10	9:1	45:3	46:1			
Goal 9						
9A						
9.6.01	65:1					
9.6.02	65:4					
9.6.03	44:5					
9.6.04	25:5	34:1				
9.6.05	47:5	55:1				
9.6.06	24:5					
9.6.07	49:5					
9.6.08	27:3	63:5				
9B						
9.6.09	26:5	40:5	64:5			
9.6.10						
9.6.11	54:5					
9.6.12	52:5	55:1	59:5			
9.6.13	38:3					
Goal 10						
10A,B						
10.6.01	19:5	20:4	32:5	39:1	57:3	58:4
10.6.02	35:1	61:4				
10.6.03	58:1	61:1				
10.6.04	21:5	50:5				
10C						
10.6.05	22:2	23:1	35:1			
10.6.06	35:3					

Table 6.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 6 Spring 2006

Low		Medium		High
1		2		5

1	6.6.03:1	6.6.04:4		
2	6.6.02:1	6.6.11:4		
3	6.6.01:1	6.6.05:4		
4	6.6.03:5			
5	6.6.04:5			
6	6.6.11:3	6.6.12:2		
7	6.6.13:1	6.6.17:4		
8	6.6.13:2	6.6.17:3		
9	6.6.11:1	6.6.12:3	8.6.10:1	
10	6.6.12:5			
11	6.6.16:5			
12	6.6.13:5			
13	6.6.17:3	6.6.20:1	6.6.21:1	
14	6.6.15:5			
15	6.6.03:1	6.6.18:4		
16	8.6.01:5			
17	6.6.12:1	8.6.09:4		
18	8.6.03:5			
19	10.6.01:5			
20	6.6.17:1	10.6.01:4		
21	10.6.04:5			
22	6.6.04:1	6B,C:1	6.6.19:1	10.6.05:2
23	6.6.04:3	6.6.14:2	10.6.05:1	
24	9.6.06:5			
25	9.6.04:5			
26	9.6.09:5			
27	7.6.01:1	7.6.03:1	9.6.08:3	
28	7.6.02:5			
29	7.6.05:5			
30	7.6.06:5			
31	8.6.08:5			
32	10.6.01:5			
33	8.6.01:2	8.6.04:3		
34	7.6.01:4	9.6.04:1		
35	10.6.02:1	10.6.05:1	10.6.06:3	
36	8.6.05:4	8.6.06:1		
37	6.6.14:5			
38	7.6.01:2	9.6.13:3		

Table 6.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 6 Spring 2006

39	6.6.04:1	6B,C:1	6.6.20:1	6.6.21:1	10.6.01:1
40	9.6.09:5				
41	6.6.14:5				
42	8.6.02:5				
43	8.6.04:5				
44	9.6.03:5				
45	6.6.12:2	8.6.10:3			
46	8.6.01:4	8.6.10:1			
47	9.6.05:5				
48	7.6.01:3	7.6.06:5			
49	9.6.07:5				
50	10.6.04:5				
51	7A,B,C:2	7.6.02:4			
52	6.6.19:1	9.6.12:5			
53	8.6.03:5				
54	9.6.11:5				
55	8.6.05:4	9.6.05:1	9.6.12:1		
56	8.6.08:5				
57	6.6.11:3	10.6.01:3			
58	10.6.01:4	10.6.03:1			
59	9.6.12:5				
60	6.6.12:1	7.6.01:5			
61	10.6.02:4	10.6.03:1			
62	8.6.07:1	8.6.09:4			
63	9.6.08:5				
64	9.6.09:5				
65	9.6.01:1	9.6.02:4			
66					
67					
68					
69					
70					
71	7.6.04:5				
72	8.6.01:5	8.6.04:1			
73					
74	7.6.01:1	7.6.06:5			
75					

Table 6.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 6 Spring 2006

Low DOK		Matched DOK		High DOK
1		2		5

Goal 6 [2]:						
6A [2]:						
6.6.01 [1]:	3:1 [1]					
6.6.02 [2]:	2:1 [2]					
6.6.03 [2]:	1:1 [2]	4:5 [1.4]	15:1 [1]			
6.6.04 [2]:	1:4 [1.25]	5:5 [1.6]	22:1 [1]	23:3 [2]	39:1 [2]	
6.6.05 [1]:	3:4 [1]					
6.6.06 [1]:						
6.6.07 [1]:						
6.6.08 [1]:						
6.6.09 [2]:						
6.6.10 [2]:						
6.6.11 [2]:	2:4 [1.75]	6:3 [2]	9:1 [2]	57:3 [2]		
6B,C [2]:	22:1 [2]	39:1 [2]				
6.6.12 [2]:	6:2 [1.5]	9:3 [2]	10:5 [2]	17:1 [1]	45:2 [1.5]	60:1 [2]
6.6.13 [2]:	7:1 [2]	8:2 [2]	12:5 [2]			
6.6.14 [2]:	23:2 [2]	37:5 [1.8]	41:5 [1.6]			
6.6.15 [1]:	14:5 [1]					
6.6.16	11:5					

Table 6.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 6 Spring 2006

[2]:	[1.6]					
6.6.17 [3]:	7:4 [2]	8:3 [1.67]	13:3 [1.67]	20:1 [2]		
6D [2]:						
6.6.18 [2]:	15:4 [2]					
6.6.19 [2]:	22:1 [2]	52:1 [2]				
6.6.20 [1]:	13:1 [2]	39:1 [2]				
6.6.21 [2]:	13:1 [2]	39:1 [2]				
Goal 7 [2]:						
7A,B, C [2]:	51:2 [2]					
7.6.01 [2]:	27:1 [1]	34:4 [1.5]	38:2 [2]	48:3 [2]	60:5 [1.4]	74:1 [2]
7.6.02 [2]:	28:5 [1]	51:4 [1.5]				
7.6.03 [2]:	27:1 [1]					
7.6.04 [1]:	71:5 [1.4]					
7.6.05 [2]:	29:5 [1.8]					
7.6.06 [2]:	30:5 [2]	48:5 [2]	74:5 [2.4]			
Goal 8 [2]:						
8A [2]:						
8.6.01 [2]:	16:5 [1.8]	33:2 [2]	46:4 [2]	72:5 [2]		
8.6.02 [2]:	42:5 [1.6]					
8.6.03 [1]:	18:5 [1.2]	53:5 [1.2]				
8B [2]:						
8.6.04	33:3	43:5	72:1			

Table 6.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 6 Spring 2006

[2]:	[1.67]	[1.8]	[2]
8.6.05 [2]:	36:4 [1.5]	55:4 [1.5]	
8.6.06 [2]:	36:1 [2]		
8.6.07 [2]:	62:1 [1]		
8C,D [2]:			
8.6.08 [2]:	31:5 [1.2]	56:5 [2]	
8.6.09 [1]:	17:4 [1.25]	62:4 [1]	
8.6.10 [2]:	9:1 [2]	45:3 [2]	46:1 [2]
Goal 9 [1]:			
9A [1]:			
9.6.01 [2]:	65:1 [2]		
9.6.02 [1]:	65:4 [1.25]		
9.6.03 [2]:	44:5 [2]		
9.6.04 [1]:	25:5 [1]	34:1 [1]	
9.6.05 [1]:	47:5 [1]	55:1 [1]	
9.6.06 [2]:	24:5 [1.8]		
9.6.07 [1]:	49:5 [1]		
9.6.08 [1]:	27:3 [1]	63:5 [1]	
9B [2]:			
9.6.09 [2]:	26:5 [1.8]	40:5 [1.6]	64:5 [1.6]
9.6.10 [2]:			
9.6.11	54:5		

Table 6.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 6 Spring 2006

[1]:	[1.4]					
9.6.12 [2]:	52:5 [2]	55:1 [1]	59:5 [2]			
9.6.13 [1]:	38:3 [1.33]					
Goal 10 [2]:						
10A,B [2]:						
10.6.01 [3]:	19:5 [1.8]	20:4 [1.75]	32:5 [1.6]	39:1 [2]	57:3 [1.67]	58:4 [1.75]
10.6.02 [2]:	35:1 [2]	61:4 [2.25]				
10.6.03 [2]:	58:1 [2]	61:1 [2]				
10.6.04 [1]:	21:5 [1]	50:5 [1.2]				
10C [2]:						
10.6.05 [2]:	22:2 [1.5]	23:1 [2]	35:1 [2]			
10.6.06 [2]:	35:3 [2]					

Table 7.1
Categorical Concurrence Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 7 Spring 2006
Number of Assessment Items - 68

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
Goal 6 - Number Sense	3	17.2	1 2 3	5 11 1	29 64 5	34	2.97	YES
Goal 7 - Measurement	1	6	2	6	100	9.4	1.36	YES
Goal 8 - Algebra	3	12.2	1 2	2 10	16 83	16.2	0.98	YES
Goal 9 - Geometry	2	15.4	1 2	7 8	46 53	13.2	0.4	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	8	2 3	7 1	87 12	11.2	0.75	YES
Total	11	58.8	1 2 3	14 42 2	24 72 3	84	1.90	

Table 7.2
Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 7 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
Goal 6 - Number Sense	3	17.2	34	2.97	17	37	74	41	8	25	YES
Goal 7 - Measurement	1	6	9.4	1.36	40	45	60	45	0	0	YES
Goal 8 - Algebra	3	12.2	16.2	0.98	7	25	85	34	8	25	YES
Goal 9 - Geometry	2	15.4	13.2	0.4	16	34	84	34	0	0	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	8	11.2	0.75	30	41	67	41	3	12	YES
Total	11	58.8	84	1.90	19	37	76	39	4	18	

Table 7.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Five Reviewers

IL Mathematics Grade 7 Spring 2006

Number of Assessment Items - 68

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Goal 6 - Number Sense	3	17.2	34	2.97	11.6	0.8	68	5	YES	40	3	0.59	0.02	NO
Goal 7 - Measurement	1	6	9.4	1.36	5.4	0.49	90	8	YES	11	2	0.77	0.02	YES
Goal 8 - Algebra	3	12.2	16.2	0.98	10.2	0.4	84	5	YES	19	1	0.79	0.02	YES
Goal 9 - Geometry	2	15.4	13.2	0.4	10.8	0.4	70	3	YES	16	1	0.86	0.03	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	8	11.2	0.75	6.4	0.49	80	6	YES	13	1	0.86	0.07	YES
Total	11	58.8	84	1.90	8.88	2.55	78	10		20	11	0.77	0.10	

Table 7.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Five Reviewers
IL Mathematics Grade 7 Spring 2006
Number of Assessment Items - 68

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
Goal 6 - Number Sense	YES	YES	YES	NO
Goal 7 - Measurement	YES	YES	YES	YES
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	YES	YES	YES

Table 7.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 7 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	2	2	2	2	2
2	2	1	2	2	2
3	2	2	1	2	2
4	2	2	2	2	2
5	2	1	2	2	2
6	2	1	1	2	1
7	1	2	1	1	1
8	2	2	2	2	2
9	2	2	2	2	2
10	1	2	2	2	2
11	2	2	2	2	2
12	2	2	2	2	2
13	2	2	2	2	2
14	2	2	2	2	2
15	1	2	2	2	2
16	2	2	2	2	2
17	2	1	2	2	2
18	2	2	2	2	2
19	2	3	2	2	2
20	1	1	1	1	1
21	2	1	2	2	2
22	2	1	2	2	2
23	2	2	3	1	2
24	1	1	1	1	1
25	2	1	2	2	2
26	1	1	2	1	1
27	1	1	1	1	1
28	1	1	2	2	1
29	1	1	2	1	2
30	2	2	2	2	2
31	2	2	2	2	2
32	1	1	1	2	1
33	2	2	2	2	2
34	2	2	2	2	2
35	1	1	1	1	1
36	1	1	2	2	2
37	2	2	2	2	2
38	2	1	2	2	1
39	2	2	2	2	2
40	2	1	2	1	2

Table 7.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 7 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
41	2	1	2	2	2
42	1	1	1	1	1
43	1	2	2	2	2
44	1	1	2	2	2
45	2	2	2	2	2
46	1	1	1	1	1
47	2	1	2	2	2
48	2	2	2	2	1
49	2	2	2	1	2
50	2	2	2	2	2
51	1	1	1	1	1
52	2	2	2	2	2
53	1	1	2	2	2
54	1	1	1	1	1
55	2	2	2	2	2
56	2	3	2	2	2
57	2	2	2	2	2
58	2	1	2	2	2
59	1	1	1	2	2
60	2	1	2	2	2
61	2	2	2	2	2
62	2	2	2	2	2
63	2	2	2	2	2
64	2	1	2	2	2
65	2	1	2	2	2
66					
67					
68					
69					
70					
71	2	2	2	2	2
72	2	2	2	2	2
73					
74	2	2	3	3	3
75					

Intraclass Correlation: 0.835
Pairwise Comparison: 0.7662

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 7 Spring 2006

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
1	2	6.7.07		2	6.7.07		2	6.7.07		2	6.7.07		2	6.7.07	
2	2	6.7.03		1	6.7.03		2	6.7.03		2	6.7.03		2	6.7.03	
3	2	6.7.05		2	6.7.05		1	6.7.05		2	6.7.05		2	6.7.05	
4	2	6.7.06		2	6.7.13		2	6.7.06		2	6.7.06		2	6.7.06	
5	2	6.7.08		1	6.7.12		2	6.7.12		2	6.7.08		2	6.7.12	
6	2	6.7.10		1	6.7.08		1	6.7.10		2	6.7.10		1	6.7.10	
7	1	6.7.09		2	6.7.09		1	6.7.09		1	6.7.09		1	6.7.09	
8	2	6.7.07		2	6.7.07		2	6.7.07		2	6.7.07		2	6.7.07	
9	2	6.7.08		2	6.7.08		2	6.7.08		2	6.7.08		2	6.7.08	
10	1	6.7.02		2	8A		2	8.7.04		2	6.7.02		2	6.7.02	
11	2	6.7.08		2	6.7.12		2	6.7.12		2	6.7.10		2	6.7.12	
12	2	6.7.15		2	6.7.15		2	6.7.15		2	6.7.15		2	6.7.15	
13	2	8.7.01		2	8.7.01		2	8.7.01		2	8.7.01		2	8.7.01	
14	2	8.7.08		2	8.7.08		2	8.7.06		2	8.7.06		2	8.7.08	
15	1	6.7.02		2	8A		2	8.7.02		2	8.7.02		2	8.7.02	
16	2	8.7.11		2	8.7.11		2	8.7.11		2	8.7.11		2	8.7.11	
17	2	8.7.06		1	8.7.01		2	8.7.05		2	8.7.06		2	8.7.01	
18	2	10.7.01		2	10.7.01		2	10.7.01		2	10.7.01		2	10.7.01	
19	2	10.7.02		3	10.7.02		2	10.7.02		2	10.7.02		2	10.7.02	
20	1	10.7.05		1	10.7.05		1	10.7.05		1	10.7.05		1	10.7.05	
21	2	6.7.03		1	6A		2	10.7.06		2	10.7.06		2	10.7.06	
22	2	10.7.07		1	10.7.08		2	10.7.08		2	10.7.08		2	10.7.08	
23	2	10.7.06		2	10.7.06		3	10.7.06		1	10.7.06		2	10.7.06	
24	1	9.7.09		1	9.7.09		1	9.7.09		1	9.7.09		1	9.7.09	
25	2	9.7.12		1	9.7.12		2	9.7.12		2	9.7.12		2	9.7.12	
26	1	9A		1	9.7.08		2	9.7.08		1	9A		1	9.7.08	
27	1	9.7.10		1	9.7.10		1	9.7.10		1	9.7.10		1	9.7.10	
28	1	7.7.04		1	7.7.04		2	7.7.04		2	7.7.04		1	7.7.04	
29	1	7.7.05		1	7.7.05		2	7.7.05		1	7.7.05		2	7.7.05	
30	2	7.7.06		2	7.7.06		2	7.7.06		2	7.7.06		2	7.7.06	7.7.01
31	2	8.7.02		2	8.7.02		2	8.7.02		2	8.7.02		2	8.7.02	
32	1	7.7.03		1	7.7.03		1	9.7.09		2	7.7.03		1	7.7.03	
33	2	9.7.14		2	9.7.14		2	9.7.14		2	9.7.14		2	9.7.14	
34	2	8.7.07		2	8.7.07	10.7.01	2	10.7.01		2	8.7.07		2	8.7.07	
35	1	9.7.05		1	9.7.05		1	9.7.05		1	9.7.05		1	9.7.05	
36	1	8.7.04		1	6.7.10		2	8.7.04		2	8.7.04		2	8.7.04	
37	2	8.7.10		2	8.7.10		2	8.7.10		2	8.7.10		2	8.7.10	
38	2	6.7.13		1	6.7.13		2	6.7.13		2	6.7.13		1	6.7.13	

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 7 Spring 2006

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
39	2	7.7.02		2	7.7.02		2	7.7.02		2	7.7.02		2	7.7.02	
40	2	9.7.11		1	9.7.11		2	9.7.11		1	9.7.11		2	9.7.11	
41	2	6.7.14	6.7.15	1	6.7.08	6.7.15	2	6.7.15		2	6.7.08		2	6.7.15	
42	1	8.7.05		1	8.7.05		1	8.7.05		1	8.7.05		1	8.7.05	
43	1	9.7.13		2	9.7.13		2	9.7.14		2	9.7.13		2	9.7.13	
44	1	7.7.02		1	7.7.01	7.7.02	2	7.7.02	7.7.01	2	7.7.02		2	7.7.02	
45	2	7.7.06	6.7.15	2	7.7.06		2	7.7.06		2	7.7.06		2	7.7.06	
46	1	9.7.04		1	9.7.04		1	9.7.04		1	9.7.04		1	9.7.04	
47	2	10.7.07		1	10.7.08		2	10.7.08		2	10.7.08		2	10.7.08	
48	2	6.7.13		2	6.7.13		2	7.7.02	6.7.13	2	6.7.13		1	6.7.13	7.7.02
49	2	8.7.03		2	8.7.03	7.7.02	2	8.7.02		1	8.7.03		2	8.7.03	
50	2	6.7.08		2	6.7.17		2	6.7.17		2	6.7.17		2	6.7.17	
51	1	9.7.06		1	9.7.06		1	9.7.06		1	9.7.07		1	9.7.06	
52	2	10.7.05		2	10.7.05		2	6.7.17		2	10.7.05		2	10.7.05	
53	1	8.7.09		1	8.7.09		2	8.7.09		2	8.7.09		2	8.7.09	
54	1	6.7.09		1	6.7.09		1	8.7.03		1	6.7.09		1	6.7.09	
55	2	8.7.10		2	8.7.10		2	8.7.10		2	8.7.10		2	8.7.10	
56	2	8.7.07	8.7.08	3	8.7.07		2	10.7.02		2	10.7.03		2	8.7.07	
57	2	8.7.10		2	8.7.10		2	8.7.10		2	8.7.10		2	8.7.10	
58	2	9.7.11		1	9.7.11		2	9.7.11		2	9.7.11		2	9.7.11	
59	1	9.7.14		1	9.7.14		1	9.7.14		2	9.7.14		2	9.7.14	
60	2	9.7.03		1	9.7.03		2	9.7.03		2	9.7.03		2	9.7.03	
61	2	10.7.03		2	10.7.02		2	10.7.02		2	10.7.02		2	10.7.03	
62	2	6.7.17		2	6.7.17		2	6.7.17		2	6.7.17		2	6.7.17	
63	2	7.7.06		2	7.7.06	7.7.01	2	7.7.06		2	7.7.06		2	7.7.06	7.7.01
64	2	6.7.15		1	6.7.15		2	6.7.15		2	6.7.15		2	6.7.15	
65	2	8.7.01		1	8.7.01		2	8.7.01		2	8.7.06		2	8.7.01	
66															
67															
68															
69															
70															
71	2	6.7.12	6.7.08	2	6.7.08		2	8.7.12		2	6.7.08		2	6.7.08	
72	2	10.7.07		2	10.7.07		2	10.7.07		2	10.7.07		2	10.7.07	
73															
74	2	6.7.15		2	6.7.08		3	6.7.15		3	6.7.08		3	6.7.15	
75															

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 7 Spring 2006

Objective Pairwise Comparison: 0.7021
Standard Pairwise Comparison: 0.9099

Table 7.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 7 Spring 2006

Low		Medium		High
0		5.6		60

1	6.7.07	6.7.07	6.7.07	6.7.07	6.7.07	
2	6.7.03	6.7.03	6.7.03	6.7.03	6.7.03	
3	6.7.05	6.7.05	6.7.05	6.7.05	6.7.05	
4	6.7.06	6.7.06	6.7.06	6.7.06	6.7.13	
5	6.7.08	6.7.08	6.7.12	6.7.12	6.7.12	
6	6.7.08	6.7.10	6.7.10	6.7.10	6.7.10	
7	6.7.09	6.7.09	6.7.09	6.7.09	6.7.09	
8	6.7.07	6.7.07	6.7.07	6.7.07	6.7.07	
9	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	
10	6.7.02	6.7.02	6.7.02	8A	8.7.04	
11	6.7.08	6.7.10	6.7.12	6.7.12	6.7.12	
12	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	
13	8.7.01	8.7.01	8.7.01	8.7.01	8.7.01	
14	8.7.06	8.7.06	8.7.08	8.7.08	8.7.08	
15	6.7.02	8A	8.7.02	8.7.02	8.7.02	
16	8.7.11	8.7.11	8.7.11	8.7.11	8.7.11	
17	8.7.01	8.7.01	8.7.05	8.7.06	8.7.06	
18	10.7.01	10.7.01	10.7.01	10.7.01	10.7.01	
19	10.7.02	10.7.02	10.7.02	10.7.02	10.7.02	
20	10.7.05	10.7.05	10.7.05	10.7.05	10.7.05	
21	6A	6.7.03	10.7.06	10.7.06	10.7.06	
22	10.7.07	10.7.08	10.7.08	10.7.08	10.7.08	
23	10.7.06	10.7.06	10.7.06	10.7.06	10.7.06	
24	9.7.09	9.7.09	9.7.09	9.7.09	9.7.09	
25	9.7.12	9.7.12	9.7.12	9.7.12	9.7.12	
26	9A	9A	9.7.08	9.7.08	9.7.08	
27	9.7.10	9.7.10	9.7.10	9.7.10	9.7.10	
28	7.7.04	7.7.04	7.7.04	7.7.04	7.7.04	
29	7.7.05	7.7.05	7.7.05	7.7.05	7.7.05	
30	7.7.01	7.7.06	7.7.06	7.7.06	7.7.06	7.7.06
31	8.7.02	8.7.02	8.7.02	8.7.02	8.7.02	
32	7.7.03	7.7.03	7.7.03	7.7.03	9.7.09	
33	9.7.14	9.7.14	9.7.14	9.7.14	9.7.14	
34	8.7.07	8.7.07	8.7.07	8.7.07	10.7.01	10.7.01
35	9.7.05	9.7.05	9.7.05	9.7.05	9.7.05	
36	6.7.10	8.7.04	8.7.04	8.7.04	8.7.04	
37	8.7.10	8.7.10	8.7.10	8.7.10	8.7.10	
38	6.7.13	6.7.13	6.7.13	6.7.13	6.7.13	

Table 7.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 7 Spring 2006

39	7.7.02	7.7.02	7.7.02	7.7.02	7.7.02					
40	9.7.11	9.7.11	9.7.11	9.7.11	9.7.11					
41	6.7.08	6.7.08	6.7.14	6.7.15	6.7.15	6.7.15	6.7.15			
42	8.7.05	8.7.05	8.7.05	8.7.05	8.7.05					
43	9.7.13	9.7.13	9.7.13	9.7.13	9.7.14					
44	7.7.01	7.7.01	7.7.02	7.7.02	7.7.02	7.7.02	7.7.02			
45	6.7.15	7.7.06	7.7.06	7.7.06	7.7.06	7.7.06				
46	9.7.04	9.7.04	9.7.04	9.7.04	9.7.04					
47	10.7.07	10.7.08	10.7.08	10.7.08	10.7.08					
48	6.7.13	6.7.13	6.7.13	6.7.13	6.7.13	7.7.02	7.7.02			
49	7.7.02	8.7.02	8.7.03	8.7.03	8.7.03	8.7.03				
50	6.7.08	6.7.17	6.7.17	6.7.17	6.7.17					
51	9.7.06	9.7.06	9.7.06	9.7.06	9.7.07					
52	6.7.17	10.7.05	10.7.05	10.7.05	10.7.05					
53	8.7.09	8.7.09	8.7.09	8.7.09	8.7.09					
54	6.7.09	6.7.09	6.7.09	6.7.09	8.7.03					
55	8.7.10	8.7.10	8.7.10	8.7.10	8.7.10					
56	8.7.07	8.7.07	8.7.07	8.7.08	10.7.02	10.7.03				
57	8.7.10	8.7.10	8.7.10	8.7.10	8.7.10					
58	9.7.11	9.7.11	9.7.11	9.7.11	9.7.11					
59	9.7.14	9.7.14	9.7.14	9.7.14	9.7.14					
60	9.7.03	9.7.03	9.7.03	9.7.03	9.7.03					
61	10.7.02	10.7.02	10.7.02	10.7.03	10.7.03					
62	6.7.17	6.7.17	6.7.17	6.7.17	6.7.17					
63	7.7.01	7.7.01	7.7.06	7.7.06	7.7.06	7.7.06	7.7.06			
64	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15					
65	8.7.01	8.7.01	8.7.01	8.7.01	8.7.06					
66										
67										
68										
69										
70										
71	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.12	6.7.12
	8.7.12	8.7.12								
72	10.7.07	10.7.07	10.7.07	10.7.07	10.7.07	10.7.07	10.7.07	10.7.07	10.7.07	10.7.07
73										
74	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08
	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	
	6.7.08	6.7.08	6.7.08	6.7.08	6.7.08	6.7.15	6.7.15	6.7.15	6.7.15	
	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	
	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	

Table 7.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 7 Spring 2006

	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15
	6.7.15	6.7.15	6.7.15	6.7.15	6.7.15				
75									

Table 7.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 7 Spring 2006

Low		Medium		High
0		5.6		51

Goal 6																				
6A	21																			
6.7.01																				
6.7.02	10	10	10	15																
6.7.03	2	2	2	2	2	21														
6.7.04																				
6.7.05	3	3	3	3	3															
6.7.06	4	4	4	4																
6.7.07	1	1	1	1	1	8	8	8	8	8										
6B,C																				
6.7.08	5	5	6	9	9	9	9	9	11	41	41	50	71	71	71	71	71	71	71	71
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74															
6.7.09	7	7	7	7	7	54	54	54	54											
6.7.10	6	6	6	6	11	36														
6.7.11																				
6.7.12	5	5	5	11	11	11	71	71												
6.7.13	4	38	38	38	38	38	48	48	48	48	48									
6D																				
6.7.14	41																			
6.7.15	12	12	12	12	12	41	41	41	41	45	64	64	64	64	64	74	74	74	74	74
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74								
6.7.16																				
6.7.17	50	50	50	50	52	62	62	62	62	62										
Goal 7																				
7A,B,C																				
7.7.01	30	44	44	63	63															
7.7.02	39	39	39	39	39	44	44	44	44	44	48	48	49							
7.7.03	32	32	32	32																
7.7.04	28	28	28	28	28															
7.7.05	29	29	29	29	29															
7.7.06	30	30	30	30	30	45	45	45	45	45	63	63	63	63	63					
Goal 8																				
8A	10	15																		
8.7.01	13	13	13	13	13	17	17	65	65	65	65									
8.7.02	15	15	15	31	31	31	31	31	49											
8.7.03	49	49	49	49	54															

Table 7.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 7 Spring 2006

8.7.04	10	36	36	36	36										
8.7.05	17	42	42	42	42	42									
8B															
8.7.06	14	14	17	17	65										
8.7.07	34	34	34	34	56	56	56								
8.7.08	14	14	14	56											
8.7.09	53	53	53	53	53										
8C,D															
8.7.10	37	37	37	37	37	55	55	55	55	55	57	57	57	57	57
8.7.11	16	16	16	16	16										
8.7.12	71	71													
Goal 9															
9A	26	26													
9.7.01															
9.7.02															
9.7.03	60	60	60	60	60										
9.7.04	46	46	46	46	46										
9.7.05	35	35	35	35	35										
9.7.06	51	51	51	51											
9.7.07	51														
9.7.08	26	26	26												
9.7.09	24	24	24	24	24	32									
9.7.10	27	27	27	27	27										
9B															
9.7.11	40	40	40	40	40	58	58	58	58	58					
9.7.12	25	25	25	25	25										
9.7.13	43	43	43	43											
9.7.14	33	33	33	33	33	43	59	59	59	59	59				
9.7.15															
Goal 10															
10A,B															
10.7.01	18	18	18	18	18	34	34								
10.7.02	19	19	19	19	19	56	61	61	61						
10.7.03	56	61	61												
10.7.04															
10.7.05	20	20	20	20	20	52	52	52	52						
10C															
10.7.06	21	21	21	23	23	23	23	23							
10.7.07	22	47	72	72	72	72	72	72	72	72	72	72			
10.7.08	22	22	22	22	47	47	47	47							

Table 7.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 7 Spring 2006

Low		Medium		High
1		2		5

Goal 6								
6A	21:1							
6.7.01								
6.7.02	10:3	15:1						
6.7.03	2:5	21:1						
6.7.04								
6.7.05	3:5							
6.7.06	4:4							
6.7.07	1:5	8:5						
6B,C								
6.7.08	5:2	6:1	9:5	11:1	41:2	50:1	71:4	74:2
6.7.09	7:5	54:4						
6.7.10	6:4	11:1	36:1					
6.7.11								
6.7.12	5:3	11:3	71:1					
6.7.13	4:1	38:5	48:5					
6D								
6.7.14	41:1							
6.7.15	12:5	41:4	45:1	64:5	74:3			
6.7.16								
6.7.17	50:4	52:1	62:5					
Goal 7								
7A,B,C								
7.7.01	30:1	44:2	63:2					
7.7.02	39:5	44:5	48:2	49:1				
7.7.03	32:4							
7.7.04	28:5							
7.7.05	29:5							
7.7.06	30:5	45:5	63:5					
Goal 8								
8A	10:1	15:1						
8.7.01	13:5	17:2	65:4					
8.7.02	15:3	31:5	49:1					
8.7.03	49:4	54:1						
8.7.04	10:1	36:4						
8.7.05	17:1	42:5						
8B								
8.7.06	14:2	17:2	65:1					

Table 7.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 7 Spring 2006

8.7.07	34:4	56:3	
8.7.08	14:3	56:1	
8.7.09	53:5		
8C,D			
8.7.10	37:5	55:5	57:5
8.7.11	16:5		
8.7.12	71:1		
Goal 9			
9A	26:2		
9.7.01			
9.7.02			
9.7.03	60:5		
9.7.04	46:5		
9.7.05	35:5		
9.7.06	51:4		
9.7.07	51:1		
9.7.08	26:3		
9.7.09	24:5	32:1	
9.7.10	27:5		
9B			
9.7.11	40:5	58:5	
9.7.12	25:5		
9.7.13	43:4		
9.7.14	33:5	43:1	59:5
9.7.15			
Goal 10			
10A,B			
10.7.01	18:5	34:2	
10.7.02	19:5	56:1	61:3
10.7.03	56:1	61:2	
10.7.04			
10.7.05	20:5	52:4	
10C			
10.7.06	21:3	23:5	
10.7.07	22:1	47:1	72:5
10.7.08	22:4	47:4	

Table 7.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 7 Spring 2006

Low		Medium		High
1		2		5

1	6.7.07:5		
2	6.7.03:5		
3	6.7.05:5		
4	6.7.06:4	6.7.13:1	
5	6.7.08:2	6.7.12:3	
6	6.7.08:1	6.7.10:4	
7	6.7.09:5		
8	6.7.07:5		
9	6.7.08:5		
10	6.7.02:3	8A:1	8.7.04:1
11	6.7.08:1	6.7.10:1	6.7.12:3
12	6.7.15:5		
13	8.7.01:5		
14	8.7.06:2	8.7.08:3	
15	6.7.02:1	8A:1	8.7.02:3
16	8.7.11:5		
17	8.7.01:2	8.7.05:1	8.7.06:2
18	10.7.01:5		
19	10.7.02:5		
20	10.7.05:5		
21	6A:1	6.7.03:1	10.7.06:3
22	10.7.07:1	10.7.08:4	
23	10.7.06:5		
24	9.7.09:5		
25	9.7.12:5		
26	9A:2	9.7.08:3	
27	9.7.10:5		
28	7.7.04:5		
29	7.7.05:5		
30	7.7.01:1	7.7.06:5	
31	8.7.02:5		
32	7.7.03:4	9.7.09:1	
33	9.7.14:5		
34	8.7.07:4	10.7.01:2	
35	9.7.05:5		
36	6.7.10:1	8.7.04:4	
37	8.7.10:5		
38	6.7.13:5		

Table 7.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 7 Spring 2006

39	7.7.02:5			
40	9.7.11:5			
41	6.7.08:2	6.7.14:1	6.7.15:4	
42	8.7.05:5			
43	9.7.13:4	9.7.14:1		
44	7.7.01:2	7.7.02:5		
45	6.7.15:1	7.7.06:5		
46	9.7.04:5			
47	10.7.07:1	10.7.08:4		
48	6.7.13:5	7.7.02:2		
49	7.7.02:1	8.7.02:1	8.7.03:4	
50	6.7.08:1	6.7.17:4		
51	9.7.06:4	9.7.07:1		
52	6.7.17:1	10.7.05:4		
53	8.7.09:5			
54	6.7.09:4	8.7.03:1		
55	8.7.10:5			
56	8.7.07:3	8.7.08:1	10.7.02:1	10.7.03:1
57	8.7.10:5			
58	9.7.11:5			
59	9.7.14:5			
60	9.7.03:5			
61	10.7.02:3	10.7.03:2		
62	6.7.17:5			
63	7.7.01:2	7.7.06:5		
64	6.7.15:5			
65	8.7.01:4	8.7.06:1		
66				
67				
68				
69				
70				
71	6.7.08:4	6.7.12:1	8.7.12:1	
72	10.7.07:5			
73				
74	6.7.08:2	6.7.15:3		
75				

Table 7.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 7 Spring 2006

Low DOK		Matched DOK		High DOK
1		2		5

Goal 6 [2]:								
6A [2]:	21:1 [1]							
6.7.01 [1]:								
6.7.02 [2]:	10:3 [1.67]	15:1 [1]						
6.7.03 [2]:	2:5 [1.8]	21:1 [2]						
6.7.04 [1]:								
6.7.05 [2]:	3:5 [1.8]							
6.7.06 [2]:	4:4 [2]							
6.7.07 [2]:	1:5 [2]	8:5 [2]						
6B,C [2]:								
6.7.08 [2]:	5:2 [2]	6:1 [1]	9:5 [2]	11:1 [2]	41:2 [1.5]	50:1 [2]	71:4 [2]	74:2 [2.5]
6.7.09 [1]:	7:5 [1.2]	54:4 [1]						
6.7.10 [1]:	6:4 [1.5]	11:1 [2]	36:1 [1]					
6.7.11 [2]:								
6.7.12 [3]:	5:3 [1.67]	11:3 [2]	71:1 [2]					
6.7.13 [2]:	4:1 [2]	38:5 [1.6]	48:5 [1.8]					
6D [2]:								
6.7.14 [2]:	41:1 [2]							
6.7.15	12:5	41:4	45:1	64:5	74:3			

Table 7.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 7 Spring 2006

[2]:	[2]	[1.75]	[2]	[1.8]	[2.67]
6.7.16 [1]:					
6.7.17 [2]:	50:4 [2]	52:1 [2]	62:5 [2]		
Goal 7 [2]:					
7A,B, C [2]:					
7.7.01 [2]:	30:1 [2]	44:2 [1.5]	63:2 [2]		
7.7.02 [2]:	39:5 [2]	44:5 [1.6]	48:2 [1.5]	49:1 [2]	
7.7.03 [2]:	32:4 [1.25]				
7.7.04 [2]:	28:5 [1.4]				
7.7.05 [2]:	29:5 [1.4]				
7.7.06 [2]:	30:5 [2]	45:5 [2]	63:5 [2]		
Goal 8 [2]:					
8A [2]:	10:1 [2]	15:1 [2]			
8.7.01 [2]:	13:5 [2]	17:2 [1.5]	65:4 [1.75]		
8.7.02 [2]:	15:3 [2]	31:5 [2]	49:1 [2]		
8.7.03 [1]:	49:4 [1.75]	54:1 [1]			
8.7.04 [2]:	10:1 [2]	36:4 [1.75]			
8.7.05 [1]:	17:1 [2]	42:5 [1]			
8B [2]:					
8.7.06 [2]:	14:2 [2]	17:2 [2]	65:1 [2]		
8.7.07 [2]:	34:4 [2]	56:3 [2.33]			
8.7.08	14:3	56:1			

Table 7.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 7 Spring 2006

[2]:	[2]	[2]	
8.7.09 [2]:	53:5 [1.6]		
8C,D [2]:			
8.7.10 [2]:	37:5 [2]	55:5 [2]	57:5 [2]
8.7.11 [2]:	16:5 [2]		
8.7.12 [2]:	71:1 [2]		
Goal 9 [2]:			
9A [1]:	26:2 [1]		
9.7.01 [1]:			
9.7.02 [2]:			
9.7.03 [2]:	60:5 [1.8]		
9.7.04 [1]:	46:5 [1]		
9.7.05 [1]:	35:5 [1]		
9.7.06 [1]:	51:4 [1]		
9.7.07 [2]:	51:1 [1]		
9.7.08 [2]:	26:3 [1.33]		
9.7.09 [1]:	24:5 [1]	32:1 [1]	
9.7.10 [1]:	27:5 [1]		
9B [2]:			
9.7.11 [2]:	40:5 [1.6]	58:5 [1.8]	
9.7.12 [2]:	25:5 [1.8]		
9.7.13	43:4		

Table 7.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 7 Spring 2006

[2]:	[1.75]		
9.7.14 [2]:	33:5 [2]	43:1 [2]	59:5 [1.4]
9.7.15 [1]:			
Goal 10 [2]:			
10A,B [2]:			
10.7.01 [3]:	18:5 [2]	34:2 [2]	
10.7.02 [2]:	19:5 [2.2]	56:1 [2]	61:3 [2]
10.7.03 [2]:	56:1 [2]	61:2 [2]	
10.7.04 [2]:			
10.7.05 [2]:	20:5 [1]	52:4 [2]	
10C [2]:			
10.7.06 [2]:	21:3 [2]	23:5 [2]	
10.7.07 [2]:	22:1 [2]	47:1 [2]	72:5 [2]
10.7.08 [2]:	22:4 [1.75]	47:4 [1.75]	

Table 8.1
Categorical Concurrence Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 8 Spring 2006
Number of Assessment Items - 68

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
Goal 6 - Number Sense	3	18	1 2 3	7 10 1	38 55 5	21.6	2.73	YES
Goal 7 - Measurement	1	6	2	6	100	10.4	2.58	YES
Goal 8 - Algebra	3	13	1 2 3	2 10 1	15 76 7	19.6	1.85	YES
Goal 9 - Geometry	2	12	1 2	4 8	33 66	13	1.79	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	8.2	2 3	4 4	50 50	20	0	YES
Total	11	57.2	1 2 3	13 38 6	22 66 10	84.6	1.36	

Table 8.2
Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Five Reviewers
IL Mathematics Grade 8 Spring 2006
Number of Assessment Items - 68

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
Goal 6 - Number Sense	3	18	21.6	2.73	17	32	74	39	9	28	YES
Goal 7 - Measurement	1	6	10.4	2.58	8	22	92	22	0	0	YES
Goal 8 - Algebra	3	13	19.6	1.85	24	36	70	39	6	22	YES
Goal 9 - Geometry	2	12	13	1.79	19	35	70	40	11	29	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	8.2	20	0	52	49	38	47	10	29	WEAK
Total	11	57.2	84.6	1.36	23	38	70	41	8	25	

Table 8.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Five Reviewers

IL Mathematics Grade 8 Spring 2006

Number of Assessment Items - 68

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
Goal 6 - Number Sense	3	18	21.6	2.73	12.6	1.50	70	8	YES	26	3	0.74	0.04	YES
Goal 7 - Measurement	1	6	10.4	2.58	4.8	0.75	80	12	YES	12	3	0.64	0.10	WEAK
Goal 8 - Algebra	3	13	19.6	1.85	9	0.63	69	5	YES	23	2	0.80	0.04	YES
Goal 9 - Geometry	2	12	13	1.79	7.6	0.49	63	4	YES	15	2	0.80	0.03	YES
Goal 10 - Data Analysis, Statistics, and Probability	2	8.2	20	0	5.4	0.49	66	5	YES	24	0	0.51	0.03	NO
Total	11	57.2	84.6	1.36	7.88	2.93	70	9		20	6	0.70	0.13	

Table 8.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Five Reviewers
IL Mathematics Grade 8 Spring 2006
Number of Assessment Items - 68

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
Goal 6 - Number Sense	YES	YES	YES	YES
Goal 7 - Measurement	YES	YES	YES	WEAK
Goal 8 - Algebra	YES	YES	YES	YES
Goal 9 - Geometry	YES	YES	YES	YES
Goal 10 - Data Analysis, Statistics, and Probability	YES	WEAK	YES	NO

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 8 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
1	1	1	1	1	1
2	2	2	2	2	2
3	2	2	2	2	2
4	1	2	2	2	1
5	2	2	2	2	1
6	1	1	2	2	2
7	2	2	2	2	2
8	1	2	1	2	1
9	1	2	2	2	2
10	1	1	1	1	1
11	2	1	2	2	1
12	2	1	2	2	2
13	2	2	2	2	2
14	2	1	2	1	2
15	2	2	1	2	2
16	1	2	2	2	2
17	1	1	2	2	1
18	2	2	2	2	2
19	1	1	2	2	1
20	2	1	2	2	1
21	2	2	2	2	2
22	2	2	1	2	1
23	2	2	2	2	2
24	1	1	1	1	1
25	2	2	1	2	1
26	2	2	2	2	2
27	1	2	2	2	2
28	2	2	2	2	2
29	2	1	1	1	1
30	1	1	2	2	1
31	2	2	2	2	2
32	2	2	2	2	2
33	2	2	2	2	2
34	1	1	2	2	2
35	2	2	2	2	1
36	1	2	2	2	1
37	2	1	2	2	1
38	1	2	2	2	2
39	2	1	2	2	1
40	2	1	2	2	2

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
IL Mathematics Grade 8 Spring 2006

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5
41	1	1	1	2	1
42	2	1	2	2	2
43	2	2	2	2	2
44	2	2	2	2	2
45	1	2	2	2	1
46	2	2	2	2	2
47	2	2	2	2	1
48	1	1	1	1	1
49	2	2	2	2	2
50	1	1	2	1	1
51	2	1	2	2	1
52	2	1	2	2	2
53	1	1	2	1	1
54	2	2	2	2	2
55	1	1	1	2	1
56	2	2	2	2	2
57	2	1	2	2	2
58	1	1	2	1	1
59	2	2	1	2	1
60	2	1	2	1	1
61	2	2	2	2	2
62	1	2	2	1	1
63	1	1	2	2	1
64	2	1	1	2	2
65	2	2	2	2	2
66					
67					
68					
69					
70					
71	2	2	1	2	2
72	2	1	2	1	1
73					
74	3	2	2	3	3
75					

Intraclass Correlation: 0.7168
Pairwise Comparison: 0.6706

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 8 Spring 2006

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
1	1	6.8.04		1	6.8.01		1	6.8.01		1	6.8.01		1	6.8.01	
2	2	6.8.09		2	6.8.16		2	6.8.16		2	6.8.16		2	6.8.16	
3	2	6.8.07		2	6.8.06		2	6.8.06		2	6.8.06		2	6.8.07	
4	1	6.8.06		2	6.8.06		2	6.8.06		2	6.8.06		1	6.8.06	
5	2	6.8.03		2	6.8.03	6.8.17	2	6.8.03		2	6.8.03		1	6.8.03	
6	1	6.8.02		1	6.8.02		2	6.8.02		2	6.8.02		2	8.8.02	
7	2	8.8.13	6.8.16	2	6.8.16		2	6.8.15		2	6.8.16		2	8.8.13	
8	1	6.8.05		2	6.8.05		1	6.8.05		2	6.8.09		1	6.8.05	
9	1	6.8.18		2	6.8.13	6.8.18	2	6.8.18		2	6.8.18		2	6.8.13	
10	1	6.8.10		1	6.8.10		1	8.8.11		1	6.8.10		1	6.8.10	
11	2	6.8.18		1	6.8.18		2	6.8.18		2	6.8.09		1	6.8.09	
12	2	8.8.01		1	8.8.01		2	8.8.01		2	8.8.01		2	8.8.01	
13	2	7.8.06	6.8.16	2	7.8.06		2	7.8.06		2	6.8.16		2	7.8.06	
14	2	8.8.12		1	8.8.12		2	8.8.05		1	8.8.12	8.8.05	2	8.8.12	8.8.05
15	2	8.8.07		2	8.8.07		1	8.8.07		2	8.8.07		2	8.8.07	
16	1	8.8.03		2	8.8.03		2	8.8.04		2	8.8.04		2	8.8.04	
17	1	8.8.12		1	8.8.12		2	8.8.12		2	8.8.12		1	8.8.12	
18	2	8.8.07		2	8.8.07		2	8.8.07		2	8.8.07		2	8.8.07	
19	1	10.8.05		1	10.8.05		2	10.8.05		2	10.8.05		1	10.8.05	
20	2	10.8.07		1	10.8.08		2	10.8.08		2	10.8.08		1	10.8.08	
21	2	10.8.06		2	10.8.06		2	10.8.06		2	10C		2	10.8.06	
22	2	9.8.08		2	9.8.08		1	9.8.09		2	9.8.01		1	9.8.08	
23	2	7.8.02		2	7.8.02		2	9.8.11		2	6.8.16		2	7.8.02	
24	1	9.8.04		1	9.8.05		1	9.8.04		1	9.8.04		1	9.8.04	
25	2	9.8.05		2	9.8.05		1	9.8.05		2	9.8.05		1	9.8.05	
26	2	7.8.06	6.8.16	2	7.8.01	6.8.16	2	7.8.06	7.8.01	2	7.8.06		2	7.8.06	7.8.01
27	1	7.8.02		2	7.8.02		2	7.8.02		2	7.8.02		2	7.8.02	
28	2	7.8.05		2	7.8.05	6.8.09	2	7.8.05		2	7.8.05		2	7.8.05	
29	2	9.8.03		1	9.8.03		1	9.8.03		1	9.8.03		1	9.8.03	
30	1	7.8.02		1	7.8.02		2	9.8.04		2	9.8.04		1	7.8.03	
31	2	7.8.02		2	7.8.02	6.8.18	2	6.8.18	7.8.02	2	6.8.18	7.8.02	2	6.8.18	7.8.02
32	2	8.8.01		2	8.8.01		2	8.8.01		2	8.8.01		2	8.8.01	
33	2	8.8.11		2	8.8.02		2	8.8.11		2	8.8.11		2	8.8.11	
34	1	9.8.04		1	9.8.04		2	9.8.04		2	7.8.02		2	9.8.04	
35	2	6.8.14		2	6.8.14		2	6.8.14		2	6.8.14		1	6.8.14	
36	1	8.8.03		2	8.8.04		2	8.8.04		2	8.8.04		1	8.8.04	
37	2	8.8.11		1	8.8.12		2	8.8.13		2	8.8.13		1	6.8.09	
38	1	8.8.10		2	8.8.10		2	8.8.10		2	8.8.10		2	8.8.10	

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 8 Spring 2006

Item	DOK0	PObj0	S1Obj0	DOK1	PObj1	S1Obj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	S1Obj3	DOK4	PObj4	S1Obj4
39	2	10.8.04		1	10.8.04		2	10.8.04		2	10.8.04		1	10.8.04	
40	2	9.8.10		1	9.8.10		2	9.8.10		2	9.8.10		2	9.8.10	
41	1	9.8.12		1	9.8.12		1	9.8.12		2	9.8.12		1	9.8.12	
42	2	6.8.18		1	6.8.09		2	6.8.09		2	6.8.09		2	6.8.09	
43	2	8.8.11		2	7.8.02		2	7.8.02		2	7.8.02		2	8.8.13	7.8.02
44	2	8.8.09		2	8.8.07		2	8.8.07		2	8.8.07		2	8.8.09	
45	1	9.8.04		2	7.8.02		2	9.8.04		2	9.8.04		1	7.8.02	
46	2	10.8.06		2	10.8.06		2	10.8.06		2	10.8.06		2	10.8.06	
47	2	8.8.12		2	8.8.12		2	8.8.12		2	8.8.12		1	8.8.12	
48	1	6.8.09		1	6.8.09		1	6.8.09		1	6.8.09		1	6.8.02	
49	2	8.8.13		2	6.8.09		2	6.8.09		2	6.8.09		2	8.8.13	
50	1	6.8.11		1	6.8.11		2	6.8.11		1	6.8.11		1	6.8.11	
51	2	10.8.07		1	10.8.08		2	10.8.08		2	10.8.08		1	10.8.08	
52	2	9.8.10		1	9.8.10		2	9.8.10		2	9.8.10		2	9.8.10	
53	1	10.8.05		1	10.8.05		2	10.8.05		1	10.8.05		1	10.8.05	
54	2	7.8.04		2	7.8.04		2	7.8.04		2	7.8.04		2	7.8.04	
55	1	9.8.04		1	7.8.02		1	9.8.04		2	9.8.04		1	7.8.02	
56	2	6.8.12		2	6.8.12		2	6.8.08		2	6.8.11		2	6.8.12	
57	2	9.8.11		1	9.8.11	6.8.16	2	9.8.12	8.8.05	2	9.8.11		2	9.8.11	
58	1	8.8.05		1	8.8.05		2	8.8.08		1	8.8.05		1	8.8.05	
59	2	8.8.07		2	8.8.08		1	9.8.05		2	8.8.07		1	8.8.07	
60	2	9.8.05		1	9.8.05		2	8.8.13		1	9.8.05		1	9.8.06	
61	2	8.8.13		2	6.8.09		2	8.8.13		2	6.8.09		2	8.8.13	
62	1	8.8.12		2	8.8.12		2	8.8.12		1	8.8.12		1	8.8.12	
63	1	8.8.10		1	8.8.10		2	8.8.11		2	8.8.10		1	8.8.10	
64	2	9.8.08		1	9.8.08		1	9.8.09		2	9.8.08		2	9.8.08	
65	2	10.8.03		2	10.8.02		2	10.8.02		2	10.8.02		2	10.8.03	
66															
67															
68															
69															
70															
71	2	9.8.02		2	7.8.02		1	6.8.03		2	7.8.02		2	7.8.02	
72	2	6.8.03		1	6.8.03		2	6.8.03		1	6.8.03		1	6.8.03	
73															
74	3	10.8.07		2	10.8.08		2	10.8.08		3	10.8.08		3	10.8.07	
75															

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
IL Mathematics Grade 8 Spring 2006

Objective Pairwise Comparison: 0.6164
Standard Pairwise Comparison: 0.8472

Table 8.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 8 Spring 2006

Low		Medium		High
0		5.64		60

1	6.8.01	6.8.01	6.8.01	6.8.01	6.8.04			
2	6.8.09	6.8.16	6.8.16	6.8.16	6.8.16			
3	6.8.06	6.8.06	6.8.06	6.8.07	6.8.07			
4	6.8.06	6.8.06	6.8.06	6.8.06	6.8.06			
5	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03	6.8.17		
6	6.8.02	6.8.02	6.8.02	6.8.02	8.8.02			
7	6.8.15	6.8.16	6.8.16	6.8.16	8.8.13	8.8.13		
8	6.8.05	6.8.05	6.8.05	6.8.05	6.8.09			
9	6.8.13	6.8.13	6.8.18	6.8.18	6.8.18	6.8.18		
10	6.8.10	6.8.10	6.8.10	6.8.10	8.8.11			
11	6.8.09	6.8.09	6.8.18	6.8.18	6.8.18			
12	8.8.01	8.8.01	8.8.01	8.8.01	8.8.01			
13	6.8.16	6.8.16	7.8.06	7.8.06	7.8.06	7.8.06		
14	8.8.05	8.8.05	8.8.05	8.8.12	8.8.12	8.8.12	8.8.12	
15	8.8.07	8.8.07	8.8.07	8.8.07	8.8.07			
16	8.8.03	8.8.03	8.8.04	8.8.04	8.8.04			
17	8.8.12	8.8.12	8.8.12	8.8.12	8.8.12			
18	8.8.07	8.8.07	8.8.07	8.8.07	8.8.07			
19	10.8.05	10.8.05	10.8.05	10.8.05	10.8.05			
20	10.8.07	10.8.08	10.8.08	10.8.08	10.8.08			
21	10C	10.8.06	10.8.06	10.8.06	10.8.06			
22	9.8.01	9.8.08	9.8.08	9.8.08	9.8.09			
23	6.8.16	7.8.02	7.8.02	7.8.02	9.8.11			
24	9.8.04	9.8.04	9.8.04	9.8.04	9.8.05			
25	9.8.05	9.8.05	9.8.05	9.8.05	9.8.05			
26	6.8.16	6.8.16	7.8.01	7.8.01	7.8.01	7.8.06	7.8.06	7.8.06	7.8.06
27	7.8.02	7.8.02	7.8.02	7.8.02	7.8.02			
28	6.8.09	7.8.05	7.8.05	7.8.05	7.8.05	7.8.05		
29	9.8.03	9.8.03	9.8.03	9.8.03	9.8.03			
30	7.8.02	7.8.02	7.8.03	9.8.04	9.8.04			
31	6.8.18	6.8.18	6.8.18	6.8.18	7.8.02	7.8.02	7.8.02	7.8.02	7.8.02
32	8.8.01	8.8.01	8.8.01	8.8.01	8.8.01			
33	8.8.02	8.8.11	8.8.11	8.8.11	8.8.11			
34	7.8.02	9.8.04	9.8.04	9.8.04	9.8.04			
35	6.8.14	6.8.14	6.8.14	6.8.14	6.8.14			
36	8.8.03	8.8.04	8.8.04	8.8.04	8.8.04			
37	6.8.09	8.8.11	8.8.12	8.8.13	8.8.13			
38	8.8.10	8.8.10	8.8.10	8.8.10	8.8.10			
39	10.8.04	10.8.04	10.8.04	10.8.04	10.8.04			
40	9.8.10	9.8.10	9.8.10	9.8.10	9.8.10			
41	9.8.12	9.8.12	9.8.12	9.8.12	9.8.12			

Table 8.9
Objectives Coded to Each Item by Reviewers
IL Mathematics Grade 8 Spring 2006

42	6.8.09	6.8.09	6.8.09	6.8.09	6.8.18					
43	7.8.02	7.8.02	7.8.02	7.8.02	8.8.11	8.8.13				
44	8.8.07	8.8.07	8.8.07	8.8.09	8.8.09					
45	7.8.02	7.8.02	9.8.04	9.8.04	9.8.04					
46	10.8.06	10.8.06	10.8.06	10.8.06	10.8.06					
47	8.8.12	8.8.12	8.8.12	8.8.12	8.8.12					
48	6.8.02	6.8.09	6.8.09	6.8.09	6.8.09					
49	6.8.09	6.8.09	6.8.09	8.8.13	8.8.13					
50	6.8.11	6.8.11	6.8.11	6.8.11	6.8.11					
51	10.8.07	10.8.08	10.8.08	10.8.08	10.8.08					
52	9.8.10	9.8.10	9.8.10	9.8.10	9.8.10					
53	10.8.05	10.8.05	10.8.05	10.8.05	10.8.05					
54	7.8.04	7.8.04	7.8.04	7.8.04	7.8.04					
55	7.8.02	7.8.02	9.8.04	9.8.04	9.8.04					
56	6.8.08	6.8.11	6.8.12	6.8.12	6.8.12					
57	6.8.16	8.8.05	9.8.11	9.8.11	9.8.11	9.8.11	9.8.12			
58	8.8.05	8.8.05	8.8.05	8.8.05	8.8.08					
59	8.8.07	8.8.07	8.8.07	8.8.08	9.8.05					
60	8.8.13	9.8.05	9.8.05	9.8.05	9.8.06					
61	6.8.09	6.8.09	8.8.13	8.8.13	8.8.13					
62	8.8.12	8.8.12	8.8.12	8.8.12	8.8.12					
63	8.8.10	8.8.10	8.8.10	8.8.10	8.8.11					
64	9.8.08	9.8.08	9.8.08	9.8.08	9.8.09					
65	10.8.02	10.8.02	10.8.02	10.8.03	10.8.03					
66										
67										
68										
69										
70										
71	6.8.03	6.8.03	7.8.02	7.8.02	7.8.02	7.8.02	7.8.02	7.8.02	9.8.02	9.8.02
72	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03	6.8.03
73										
74	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07
	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	
	10.8.07	10.8.07	10.8.07	10.8.07	10.8.07	10.8.08	10.8.08	10.8.08	10.8.08	
	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	
	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	
	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08	
	10.8.08	10.8.08	10.8.08	10.8.08	10.8.08					
75										

Table 8.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 8 Spring 2006

Low		Medium		High
0		5.716216		44

Goal 6																			
6A																			
6.8.01	1	1	1	1															
6.8.02	6	6	6	6	48														
6.8.03	5	5	5	5	5	71	71	72	72	72	72	72	72	72	72	72	72		
6.8.04	1																		
6.8.05	8	8	8	8															
6.8.06	3	3	3	4	4	4	4	4											
6.8.07	3	3																	
6.8.08	56																		
6B,C																			
6.8.09	2	8	11	11	28	37	42	42	42	42	48	48	48	48	49	49	49	61	61
6.8.10	10	10	10	10															
6.8.11	50	50	50	50	50	56													
6.8.12	56	56	56																
6.8.13	9	9																	
6.8.14	35	35	35	35	35														
6D																			
6.8.15	7																		
6.8.16	2	2	2	2	7	7	7	13	13	23	26	26	57						
6.8.17	5																		
6.8.18	9	9	9	9	11	11	11	31	31	31	31	42							
Goal 7																			
7A,B,C																			
7.8.01	26	26	26																
7.8.02	23	23	23	27	27	27	27	27	30	30	31	31	31	31	31	34	43	43	43	43
	45	45	55	55	71	71	71	71	71	71									
7.8.03	30																		
7.8.04	54	54	54	54	54														
7.8.05	28	28	28	28	28														
7.8.06	13	13	13	13	26	26	26	26											
Goal 8																			
8A																			
8.8.01	12	12	12	12	12	32	32	32	32	32									
8.8.02	6	33																	
8.8.03	16	16	36																
8.8.04	16	16	16	36	36	36	36												
8.8.05	14	14	14	57	58	58	58	58											

Table 8.10
Items Coded by Reviewers to Each Objective
IL Mathematics Grade 8 Spring 2006

8B																					
8.8.06																					
8.8.07	15	15	15	15	15	18	18	18	18	18	44	44	44	59	59	59					
8.8.08	58	59																			
8.8.09	44	44																			
8.8.10	38	38	38	38	38	63	63	63	63												
8C,D																					
8.8.11	10	33	33	33	33	37	43	63													
8.8.12	14	14	14	14	17	17	17	17	17	37	47	47	47	47	47	62	62	62	62	62	
8.8.13	7	7	37	37	43	49	49	60	61	61	61										
Goal 9																					
9A																					
9.8.01	22																				
9.8.02	71	71																			
9.8.03	29	29	29	29	29																
9.8.04	24	24	24	24	30	30	34	34	34	34	45	45	45	55	55	55					
9.8.05	24	25	25	25	25	25	59	60	60	60											
9.8.06	60																				
9.8.07																					
9.8.08	22	22	22	64	64	64	64														
9.8.09	22	64																			
9B																					
9.8.10	40	40	40	40	40	52	52	52	52	52											
9.8.11	23	57	57	57	57																
9.8.12	41	41	41	41	41	57															
Goal 10																					
10A,B																					
10.8.01																					
10.8.02	65	65	65																		
10.8.03	65	65																			
10.8.04	39	39	39	39	39																
10.8.05	19	19	19	19	19	53	53	53	53	53											
10C	21																				
10.8.06	21	21	21	21	46	46	46	46	46												
10.8.07	20	51	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74															
10.8.08	20	20	20	20	51	51	51	51	74	74	74	74	74	74	74	74	74	74	74	74	
	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74		
	74	74	74	74	74																

Table 8.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 8 Spring 2006

Low		Medium		High
1		2		5

Goal 6									
6A									
6.8.01	1:4								
6.8.02	6:4	48:1							
6.8.03	5:5	71:1	72:5						
6.8.04	1:1								
6.8.05	8:4								
6.8.06	3:3	4:5							
6.8.07	3:2								
6.8.08	56:1								
6B,C									
6.8.09	2:1	8:1	11:2	28:1	37:1	42:4	48:4	49:3	61:2
6.8.10	10:4								
6.8.11	50:5	56:1							
6.8.12	56:3								
6.8.13	9:2								
6.8.14	35:5								
6D									
6.8.15	7:1								
6.8.16	2:4	7:3	13:2	23:1	26:2	57:1			
6.8.17	5:1								
6.8.18	9:4	11:3	31:4	42:1					
Goal 7									
7A,B,C									
7.8.01	26:3								
7.8.02	23:3	27:5	30:2	31:5	34:1	43:4	45:2	55:2	71:3
7.8.03	30:1								
7.8.04	54:5								
7.8.05	28:5								
7.8.06	13:4	26:4							
Goal 8									
8A									
8.8.01	12:5	32:5							
8.8.02	6:1	33:1							
8.8.03	16:2	36:1							
8.8.04	16:3	36:4							
8.8.05	14:3	57:1	58:4						
8B									

Table 8.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
IL Mathematics Grade 8 Spring 2006

8.8.06						
8.8.07	15:5	18:5	44:3	59:3		
8.8.08	58:1	59:1				
8.8.09	44:2					
8.8.10	38:5	63:4				
8C,D						
8.8.11	10:1	33:4	37:1	43:1	63:1	
8.8.12	14:4	17:5	37:1	47:5	62:5	
8.8.13	7:2	37:2	43:1	49:2	60:1	61:3
Goal 9						
9A						
9.8.01	22:1					
9.8.02	71:1					
9.8.03	29:5					
9.8.04	24:4	30:2	34:4	45:3	55:3	
9.8.05	24:1	25:5	59:1	60:3		
9.8.06	60:1					
9.8.07						
9.8.08	22:3	64:4				
9.8.09	22:1	64:1				
9B						
9.8.10	40:5	52:5				
9.8.11	23:1	57:4				
9.8.12	41:5	57:1				
Goal 10						
10A,B						
10.8.01						
10.8.02	65:3					
10.8.03	65:2					
10.8.04	39:5					
10.8.05	19:5	53:5				
10C	21:1					
10.8.06	21:4	46:5				
10.8.07	20:1	51:1	74:2			
10.8.08	20:4	51:4	74:3			

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 8 Spring 2006

Low		Medium		High
1		2		5

1	6.8.01:4	6.8.04:1		
2	6.8.09:1	6.8.16:4		
3	6.8.06:3	6.8.07:2		
4	6.8.06:5			
5	6.8.03:5	6.8.17:1		
6	6.8.02:4	8.8.02:1		
7	6.8.15:1	6.8.16:3	8.8.13:2	
8	6.8.05:4	6.8.09:1		
9	6.8.13:2	6.8.18:4		
10	6.8.10:4	8.8.11:1		
11	6.8.09:2	6.8.18:3		
12	8.8.01:5			
13	6.8.16:2	7.8.06:4		
14	8.8.05:3	8.8.12:4		
15	8.8.07:5			
16	8.8.03:2	8.8.04:3		
17	8.8.12:5			
18	8.8.07:5			
19	10.8.05:5			
20	10.8.07:1	10.8.08:4		
21	10C:1	10.8.06:4		
22	9.8.01:1	9.8.08:3	9.8.09:1	
23	6.8.16:1	7.8.02:3	9.8.11:1	
24	9.8.04:4	9.8.05:1		
25	9.8.05:5			
26	6.8.16:2	7.8.01:3	7.8.06:4	
27	7.8.02:5			
28	6.8.09:1	7.8.05:5		
29	9.8.03:5			
30	7.8.02:2	7.8.03:1	9.8.04:2	
31	6.8.18:4	7.8.02:5		
32	8.8.01:5			
33	8.8.02:1	8.8.11:4		
34	7.8.02:1	9.8.04:4		
35	6.8.14:5			
36	8.8.03:1	8.8.04:4		
37	6.8.09:1	8.8.11:1	8.8.12:1	8.8.13:2
38	8.8.10:5			

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
IL Mathematics Grade 8 Spring 2006

39	10.8.04:5			
40	9.8.10:5			
41	9.8.12:5			
42	6.8.09:4	6.8.18:1		
43	7.8.02:4	8.8.11:1	8.8.13:1	
44	8.8.07:3	8.8.09:2		
45	7.8.02:2	9.8.04:3		
46	10.8.06:5			
47	8.8.12:5			
48	6.8.02:1	6.8.09:4		
49	6.8.09:3	8.8.13:2		
50	6.8.11:5			
51	10.8.07:1	10.8.08:4		
52	9.8.10:5			
53	10.8.05:5			
54	7.8.04:5			
55	7.8.02:2	9.8.04:3		
56	6.8.08:1	6.8.11:1	6.8.12:3	
57	6.8.16:1	8.8.05:1	9.8.11:4	9.8.12:1
58	8.8.05:4	8.8.08:1		
59	8.8.07:3	8.8.08:1	9.8.05:1	
60	8.8.13:1	9.8.05:3	9.8.06:1	
61	6.8.09:2	8.8.13:3		
62	8.8.12:5			
63	8.8.10:4	8.8.11:1		
64	9.8.08:4	9.8.09:1		
65	10.8.02:3	10.8.03:2		
66				
67				
68				
69				
70				
71	6.8.03:1	7.8.02:3	9.8.02:1	
72	6.8.03:5			
73				
74	10.8.07:2	10.8.08:3		
75				

Table 8.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 8 Spring 2006

Low DOK		Matched DOK		High DOK
1		2		5

Goal 6 [2]:									
6A [2]:									
6.8.01 [1]:	1:4 [1]								
6.8.02 [1]:	6:4 [1.5]	48:1 [1]							
6.8.03 [2]:	5:5 [1.8]	71:1 [1]	72:5 [1.4]						
6.8.04 [1]:	1:1 [1]								
6.8.05 [1]:	8:4 [1.25]								
6.8.06 [2]:	3:3 [2]	4:5 [1.6]							
6.8.07 [2]:	3:2 [2]								
6.8.08 [2]:	56:1 [2]								
6B,C [2]:									
6.8.09 [2]:	2:1 [2]	8:1 [2]	11:2 [1.5]	28:1 [2]	37:1 [1]	42:4 [1.75]	48:4 [1]	49:3 [2]	61:2 [2]
6.8.10 [1]:	10:4 [1]								
6.8.11 [1]:	50:5 [1.2]	56:1 [2]							
6.8.12 [2]:	56:3 [2]								
6.8.13 [3]:	9:2 [2]								
6.8.14 [2]:	35:5 [1.8]								
6D [2]:									
6.8.15 [1]:	7:1 [2]								
6.8.16	2:4 [2]	7:3 [2]	13:2	23:1	26:2	57:1			

Table 8.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 8 Spring 2006

[2]:			[2]	[2]	[2]	[1]			
6.8.17 [2]:	5:1 [2]								
6.8.18 [2]:	9:4 [1.75]	11:3 [1.67]	31:4 [2]	42:1 [2]					
Goal 7 [2]:									
7A,B,C [2]:									
7.8.01 [2]:	26:3 [2]								
7.8.02 [2]:	23:3 [2]	27:5 [1.8]	30:2 [1]	31:5 [2]	34:1 [2]	43:4 [2]	45:2 [1.5]	55:2 [1]	71:3 [2]
7.8.03 [2]:	30:1 [1]								
7.8.04 [2]:	54:5 [2]								
7.8.05 [2]:	28:5 [2]								
7.8.06 [2]:	13:4 [2]	26:4 [2]							
Goal 8 [2]:									
8A [2]:									
8.8.01 [3]:	12:5 [1.8]	32:5 [2]							
8.8.02 [2]:	6:1 [2]	33:1 [2]							
8.8.03 [1]:	16:2 [1.5]	36:1 [1]							
8.8.04 [2]:	16:3 [2]	36:4 [1.75]							
8.8.05 [1]:	14:3 [1.67]	57:1 [2]	58:4 [1]						
8B [2]:									
8.8.06 [2]:									
8.8.07 [2]:	15:5 [1.8]	18:5 [2]	44:3 [2]	59:3 [1.67]					
8.8.08 [2]:	58:1 [2]	59:1 [2]							
8.8.09	44:2								

Table 8.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 8 Spring 2006

[2]:	[2]					
8.8.10 [2]:	38:5 [1.8]	63:4 [1.25]				
8C,D [2]:						
8.8.11 [2]:	10:1 [1]	33:4 [2]	37:1 [2]	43:1 [2]	63:1 [2]	
8.8.12 [2]:	14:4 [1.5]	17:5 [1.4]	37:1 [1]	47:5 [1.8]	62:5 [1.4]	
8.8.13 [2]:	7:2 [2]	37:2 [2]	43:1 [2]	49:2 [2]	60:1 [2]	61:3 [2]
Goal 9 [2]:						
9A [2]:						
9.8.01 [2]:	22:1 [2]					
9.8.02 [2]:	71:1 [2]					
9.8.03 [1]:	29:5 [1.2]					
9.8.04 [2]:	24:4 [1]	30:2 [2]	34:4 [1.5]	45:3 [1.67]	55:3 [1.33]	
9.8.05 [1]:	24:1 [1]	25:5 [1.6]	59:1 [1]	60:3 [1.33]		
9.8.06 [2]:	60:1 [1]					
9.8.07 [2]:						
9.8.08 [2]:	22:3 [1.67]	64:4 [1.75]				
9.8.09 [1]:	22:1 [1]	64:1 [1]				
9B [2]:						
9.8.10 [2]:	40:5 [1.8]	52:5 [1.8]				
9.8.11 [2]:	23:1 [2]	57:4 [1.75]				
9.8.12 [1]:	41:5 [1.2]	57:1 [2]				
Goal 10 [3]:						
10A,B						

Table 8.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
IL Mathematics Grade 8 Spring 2006

[3]:			
10.8.01 [3]:			
10.8.02 [3]:	65:3 [2]		
10.8.03 [2]:	65:2 [2]		
10.8.04 [3]:	39:5 [1.6]		
10.8.05 [3]:	19:5 [1.4]	53:5 [1.2]	
10C [2]:	21:1 [2]		
10.8.06 [2]:	21:4 [2]	46:5 [2]	
10.8.07 [2]:	20:1 [2]	51:1 [2]	74:2 [3]
10.8.08 [2]:	20:4 [1.5]	51:4 [1.5]	74:3 [2.33]

Appendix C

Reviewers Notes and Source of Challenge Comments

Illinois
Grades 3-8 Mathematics

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.5

Comments made by reviewers on items identified as having a Source-of-Challenge issue by item number.

Tables *grade*.7

All notes made by reviewers on items by item number.

Table 3.5
Source-of-Challenge Issues by Reviewer
IL Mathematics Grade 3 Spring 2006

Item Number	Comments by Reviewer
4	It may be unclear to students whether they are to look for the shaded or unshaded part of the pizza...
54	A student could get the wrong answer if they did not know what a hexagon is.

Table 3.7
Notes by Reviewer
IL Mathematics Grade 3 Spring 2006

Item Number	Comments by Reviewer
12	bad fit
16	tough fit
28	Maybe it is my 40+ year old eyes, but could the thermometer be bigger? :)
30	This item really just asks students to find the value, not solve a problem involving the value.....
44	not really a word problem, I suppose
44	This is a great beginning proportional reasoning problem which is a 6D objective. There are no 6D items included on the 3rd grade framework.
58	c'mon
60	This item requires students to find the value of a group of coins rather than really solving problems.
72	This is really completing a venn diagram not interpreting data in a venn diagram.
72	I coded this item to 10.3.01 because it involves a Venn Diagram. However, 10.3.02 deals with completing missing parts of a chart, graph....this items requires students to complete a Venn Diagram, which is not listed in 10.3.02
72	THIS ITEM IS COMPLETING A GRAPH BUT VENN DIAGRAMS WERE NOT LISTED IN 10.3.02

Table 4.5
Source-of-Challenge Issues by Reviewer
IL Mathematics Grade 4 Spring 2006

Item Number	Comments by Reviewer
11	Students can get these fact family problems correct without knowing anything about the operations in question. They simply have to find the answer that includes the same three numbers in it.
13	This is a terrific item...if it was open-ended instead of multiple choice. As it is, a student can answer this correctly by just trying the choices, without really having the appropriate mathematical knowledge. This is actually a perfect candidate for a gridded response.
59	minor quibble--the lines of text in the Venn diagram seem to read as paragraphs, which might be confusing for students.

Table 4.7
Notes by Reviewer
IL Mathematics Grade 4 Spring 2006

Item Number	Comments by Reviewer
3	place value properties of addition and subtraction
13	just a good mathematical problem solving problem. Challenge to the problem taken out by being a multiple choice question. The kids will just take the answer and try until they find the one that works.
13	This is a good problem solving activity, but does not code to a specific framework objective.
13	THIS IS A GOOD PROBLEM SOLVING OPPORTUNITY BUT I AM AFRAID STUDENTS WILL WASTE VALUABLE TIME WORKING ON IT. IT REALLY DOESN'T CODE WELL TO A STANDARD. HOWEVER, THOSE TEST-WISE STUDENTS WILL TRY THE CHOICES AND THE FIRST ONE WORKS-SO WHAT IS BEING ASSESSED?
14	This would fit with a Grade 3 objective, but not with any of these for Grade 4.
14	better aligned to 6.3.13, the additive identity property not included on the 4th grade IAF 'column'
14	This really would be a better example of 6.3.13.
14	Matches 6.3.13
14	THIS CODED TO AN OBJECTIVE IN 3RD GRADE-ADDITIVE IDENTITY 6.3.13.
16	good item
23	COULD THE "NOT" BE BOLDED?
26	much easier then the one on the 3rd grade test
26	THERMOMETER COULD BE BIGGER
29	This seems to easy for 4th grade. I would suggest not listing all of the measurements (like possibly omitting the 4 cm on the left of the figure.)
33	Like on the 3rd grade test, not really a story problem, but nonetheless this objective fits best. These items are good, but only as long as students understand the "balance" part of it.
33	should be standard 6D, yet not on the 4th grade IAF 'column'
33	A good algebraic reasoning problem--difficult to code to framework.
33	THIS IS AN EXCELLENT ALGEBRAIC REASONING TASK BUT IT DOESN'T ALIGN CLOSELY TO AN OBJECTIVE. 8.4.08 REFERS TO A WORD PROBLEM. THERE WAS A 3RD GRADE BALANCE SCALE TASK THAT HAD THE SAME ISSUE.
37	depending on the strategy used to solve - determines which objective is being assessed.
39	Good item! Nice way to get at functional relationships at an early age.
43	this is too easy for 4th grade. Could the shapes be flipped or rotated?
43	This item seems too easy for gr.4. It would be better if the congruent figure was flipped.
47	I like this problem.
49	Again, not really a word problem, but this is the best objective to code it to. This is a good way of approaching algebraic reasoning at an early age.

Table 4.7
Notes by Reviewer
IL Mathematics Grade 4 Spring 2006

Item Number	Comments by Reviewer
49	should be 6D, similar to #33
49	Another good algebraic reasoning problem...Like #33, somewhat difficult to code
49	SAME ALIGNMENT ISSUES AS TASK 33-ALGEBRAIC REASONING-BALANCE SCALE BUT NOT A WORD PROBLEM.
51	not a measurement item
54	Which (ordered pair) best describes.....
	which of the following what? do the words ordered pair need to be added?
57	okay, too many elapsed time problems
58	this is a waste of time. get rid of this item.
58	BOTH POLYGON TASKS REFERED TO A POLYGON BEING CLOSED
61	good item
64	a lot of these area problems...
74	I like this problem, but I'm sure validation was challenging because it was so open ended. I'm sure most 4th graders made a rectangle, but there are always a few that like to think outside the box.

Table 5.5
Source-of-Challenge Issues by Reviewer
IL Mathematics Grade 5 Spring 2006

Item Number	Comments by Reviewer
39	What if Keli was to do the following: ride, wait, ride, wait, ride, wait, ride = 56 minutes and therefore gets in 4 rides within her 60 minutes? vs. wait, ride, wait, ride, wait, ride?

Table 5.7
Notes by Reviewer
IL Mathematics Grade 5 Spring 2006

Item Number	Comments by Reviewer
2	Objective states "solve problems involving descriptions of numbers....) This item is not really problem solving...
8	this one makes me grumpy it aligns to the properties objectives, yet a child can come up with the correct answer and not even know that he/she is using the commutative property. So it gives a 'false positive' when looking at the scores on this IAF objective - good scores, yet do we know if the students really understand the properties? plus, the numbers are too easy.
10	aligns best to 6.5.12, but this objective is only with whole numbers and not decimals.
10	THERE IS MULTIPLICATION INVOLVED IN THIS TASK BUT THE STANDARD ONLY INCLUDES +/-
12	or is this considered an estimation item because an exact number value is not needed to answer the question
13	Like in the previous grades, I'm coding these balance items to this objective even though they aren't really word problems.
13	Nice problem for algebraic reasoning. Does not clearly match a specific objective in the algebra goal.
17	um...a little dumb
17	I oscillated between an algebra objective (8.5.08) and the number sense objectives that I marked. Number sense won out.
17	This item is difficult to code. Is it simply identifying a factor pair for 32? It seems like an algebra item but doesn't seem to match the algebra objectives.
17	THIS ITEM DID NOT CODE WELL TO AN OBJECTIVE. THERE WERE MANY POSSIBILITIES BUT NO PERFECT MATCH.
21	close enough
37	this is way too easy.
41	this isn't really about reading tables and charts
41	similar to the bag problem in 4th grade. less difficult with the mc aspect of the question. Will be time consuming though for students that do not think to use test-taking strategies and working backwards to solve.
41	THIS COULD REALLY BE A TIME WASTER BUT THE FIRST CHOICE WORKS. IS IT MEANT TO BE ESTIMATION? I DON'T LIKE THIS PROBLEM
45	the two standards are equal. If they don't know perimeter and/or what an equilateral triangle then they will miss this question.
46	modeling an operation
49	lot going on here. Definitely a high 2

Table 5.7
Notes by Reviewer
IL Mathematics Grade 5 Spring 2006

Item Number	Comments by Reviewer
50	NOT A GOOD ALIGNMENT IN GEOMETRY
54	again, not a word problem, but still the best place for this kind of a problem
56	THIS IS NOT A GREAT ALIGNMENT TO 8.5.05-IT REALLY IS EITHER STRAIGHT ARITHMETIC OR INVERSE OPERATIONS.
71	waste of an extended response item
74	neat item, hard to find an exact match in the objectives
74	NOT SURE OF THE ALIGNMENT OBJECTIVE. IT INVOLVES FACTORS/MULTIPLES BUT IT SEEMS TO FIT UNDER 6B,C.

Table 6.5
Source-of-Challenge Issues by Reviewer
IL Mathematics Grade 6 Spring 2006

Item Number	Comments by Reviewer
1	Since calculators can be used on this test, this doesn't actually assess whether students can convert between fractions and decimals.
5	If a student uses a scientific calculator, what does this item tell us about her knowledge of converting between fractions and percents?

Table 6.7
Notes by Reviewer
IL Mathematics Grade 6 Spring 2006

Item Number	Comments by Reviewer
6	a lot of reading for just 6 x 9 or 9 x 6
12	belongs with the 5th grade objectives
13	not the best fit, but okay
22	even though this item has a probability context, it is really just a 1/4 of 72 problem. A student has a variety of ways they can solve this problem. 1/4 of 62, proportional reasoning, change to .25 x 72, that is why I put it in 6B,C
23	another problem with a probability context, yet it is simply seeing if a student recognizes that 33 1/3% is 1/3 - equivalent representations.
28	this was not what I had in mind when I gave this objective a 2
28	too easy?
28	This is too easy for grade 6.
33	too easy, the distractors are also not very 'distractable'
34	dumb
36	not very challenging.
39	similar rational to #22
40	enough
47	the question is not any more difficult or easy for 4,5,6th grades. The IAF is the same for all 3 grades, yet no distractors or questions using ordered pairs like (0,5) or (5,0)
50	I'd like to see the data on this question. Not sure if we would know if the kids understand median and range since we are only dealing with two numbers in the problem
54	I thought we were not using NOT questions?
61	probably more of a 2 1/2 :)
64	very similar if not the same as the question on the 5th grade test.
74	nice problem, but i'm sure validation was difficult with this being so open-ended

Table 7.5
Source-of-Challenge Issues by Reviewer
IL Mathematics Grade 7 Spring 2006

Item Number	Comments by Reviewer
2	calculators?
2	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.
4	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL?
14	why are these not written in y= form?
38	Guys, the calculator does the problem for them. There is no estimation or thinking involved!
38	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.
48	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.
54	Some calculators will do this automatically. It's better to ask "which operation should you perform first?"
54	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.

Table 7.7
Notes by Reviewer
IL Mathematics Grade 7 Spring 2006

Item Number	Comments by Reviewer
6	probably to be an attempt at commutative property, but a student can get this problem right yet not even understand that this is an example of the commutative property
6	This is probably more appropriate for a lower grade level.
14	why are these not written in y= form?
15	the closest fit for questions 10 and 15 are 8.7.02, yet it reads " write an expression using variables to represent unknown quantities. both questions are more translating from a verbal expression to numeric/algebraic
19	lot going on here.
21	I just don't think this is about probability. The source of this item's challenge is about fractions.
21	really is more of 6.6.02 because the question is just asking if a student knows that the green represents less than 1/4 of the circle. A student does not need to understand probability to answer this question.
25	fits best with a grade 6 or 5 objective
25	best fit here mostly due to 9.5.12.
25	This item really aligns better to an objective that appears at many lower grades. The objective at those grades states "predict the results of composing and decomposing shapes or figures (9.5.12)"
26	fits with a Grade 5 or 6 objective instead
26	This item requires identification of perpendicular lines--an objective found a lower grade levels.
34	matches last part of 8.7.07, but can also match 10.7.01
37	should it read - which equation COULD represent w, the numbe.r.....
41	probably written to match the proportional reasoning objective, but I think most kids will figure out the price on one game and then multiply by 12
61	THIS IS THE MULTIPLE CHOICE VERSION OF CREATING A CIRCLE GRAPH
71	nice item for extended response!
72	This is a little unclear. It could be interpreted that the two events are unrelated (so 8 outcomes, not 12).

Table 8.5
Source-of-Challenge Issues by Reviewer
IL Mathematics Grade 8 Spring 2006

Item Number	Comments by Reviewer
3	Great item. Too bad when you use a calculator this item becomes trivial. If you are going to assess objectives like these, you have to change these items, or else have part of the test where calculators are not allowed.
3	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.
9	They're just going to use a calculator rather than estimating.
10	Aargh! Another problem where scientific calculators solve it without any thought!
10	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.
27	do 8th graders know what a drill team is? does that part of the context need to be there? in our area this is called color guard or auxiliary, is this a bias?
35	They can use scientific calculators! This problem doesn't measure students' number sense about roots!
35	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.
72	SINCE STUDENTS HAVE ACCESS TO A CALCULATOR -CAN YOU BE SURE THEY KNOW THIS SKILL.

Table 8.7
Notes by Reviewer
IL Mathematics Grade 8 Spring 2006

Item Number	Comments by Reviewer
3	I WOULD RATHER HAVE ALIGNED THIS TO 6.8.06 BUT PI IS IRRATIONAL. THIS TASK ONLY IMPLIES INVOLVING THE NUMBER LINE
7	Good problem.
8	this is really law of exponents which is a high school topic
9	this is supposed to be an estimation question, I feel, yet the kids will probably just do .21 x 500 and then round.
16	this type of problem needs to be shared with the teachers across the state. If this type of item is an interpretation of this objective, this raises the bar for the amount of algebra done in 8th grade and teachers need to be aware of this.
19	This is a GRADE 4 objective! They need to be doing some analysis by this point.
24	just labelling the radius not a direct 'fit' here as the objective states identify, decribe or determine the radius....
28	maybe this is more of a Grade 7 objective
32	fits in the 8A patterns objectives, but not as aligned to the intent of 8.8.01, fits better to 8.7.01
33	fits here even though the objectives says to write expressions.
37	STUDENTS WILL SIMPLY TRY THE ANSWER CHOICES-MAKING THIS AN ARITHMETIC PROBLEM.
39	doesn't fully match the DOK in this objective
39	only addressing the "identify" portion of the objective.
43	several strategies could be used to solve this problem.
48	the picture makes this problem easy. was the intent to be 9.8.12 with absolute value again and the vertical number line?
52	um, you could add least have made one of the other distracters a SQUARE
53	Does not cover the DOK of the objective!
53	aligns to this objective, but more aligned to 10.6.04 or 10.7.05
55	How many circle problems do there have to be?
65	You could ask which representation is better, and that would better target this objective.
65	THE MULTIPLE CHOICE VERSION OF CREATING A GRAPH
72	This is a ridiculous item, fit for Grade 5 maybe. Waste of a short response, if you ask me.
72	Yuck, wasn't there a question similar to this on the thrid grade test yet answering as a fraction? if percent is wanted - this would fit better at the 6th grade level
72	This item does not seem appropriate for this grade level.

Table 8.7
Notes by Reviewer
IL Mathematics Grade 8 Spring 2006

Item Number	Comments by Reviewer
72	THIS TASK IS BETTER SUITED TO 5TH GRADE-A WASTE OF AN OPEN-ENDED ITEM
74	Nice item. Not too hard, but it gets at problem-solving and strategizing a bit.
74	this is a combination question, but at 8th grade they will not solve it using the formulas for combinations/permutations. They will either make a list or a chart of some type to keep track of the games played.
74	Because this problem requires explanation, the DOK is 3. However, this item could be effectively used with students in grades 4 or 5. The item is not appropriate for grade 8.

Appendix D

Debrief Summary Notes

Illinois
Grades 3-8 Mathematics

Table 3.15
Debriefing Summary
IL Mathematics Grade 3 Spring 2006

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes, most of the important topics that I expected were covered.
· yes, in looking back over the IAF topics, everything was covered.
· There could have been more area and perimeter problems and a few less elapsed time problems.
· Too many items on elapsed time! There need to be more area and perimeter problems as well as measurement items other than time. 6.3.14????
· I THOUGHT 8.3.03 AND .04 SHOULD HAVE BEEN ASSESSED MORE

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Yes, the DOK levels were certainly adequate to the standards and objectives.
· yes,
· Yes.
· ELAPSED TIME WAS OVER ASSESSED STUDENTS WERE NOT ASKED TO SELECT APPROPRIATE TOOLS OR UNITS. PROBABILITY WAS OVERASSESSED

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Yes, they were quite specific. One ambiguity: on 7.3.01 is the elapsed time in compound units? How does that make sense with the 4th grade version of this objective covering less than this one?
· yes
· Yes. I believe so.
· Yes

D. What is your general opinion of the alignment between the standards and assessment:

i. Perfect Alignment (2) : 40%
ii. Acceptable Alignment (3) : 60%

E. Comments

· There should be some "process" standards or objectives, addressing problem-solving, mathematical modeling, reasoning, justifying, etc.
· In a large majority of the assessment items, the alignment of the standards and assessment were very clear cut and easy to identify. In only a few cases was it a little harder to choose

Table 3.15
Debriefing Summary
IL Mathematics Grade 3 Spring 2006

the objective that matched the assessment item. #44 - could not match to 3rd grade IAF topics #30 and #60 - best fit was to 6.3.10, yet these were just counting problems. #61 - I don't like.

· In all but a very few instances, the alignment was right on target.

· I think the alignment is better than acceptable, but not perfect.

· THE BEST TEST I HAVE ALIGNED. THE ITEMS ARE WELL WRITTEN AND MATCH THE OBJECTIVES. NO SURPRISES FOR TEACHERS OR STUDENTS-FAIR AND EQUITABLE.

Table 4.15
Debriefing Summary
IL Mathematics Grade 4 Spring 2006

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes.
· I was surprised that there was not more with fractions - order and compare fractions, The algebra strand seemed to be a little weak, too. Also, felt I didn't see any problems that needed division in order to solve.
· Objective 6.4.13 was not assessed.
· 6.4.07 7.4.04 7.4.06 8.4.02--8.4.05
· I EXPECTED TO SEE MORE FRACTION ITEMS: ORDERING FRACTIONS +/- OF FRACTIONS NEED MORE COMPLEX X AND DIVISION ITEMS

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Definitely.
· yes
· ONCE AGAIN ELAPSED TIME WAS OVER-ASSESSED POLYGONS WERE OVER-ASSESSED PROBABILITY WAS OVER-ASSESSED GRAPHING ON THE COORDINATE PLANE WAS OVER-ASSESSED THE ALGEBRA STRAND COULD BE MORE REPRESENTED INSTEAD

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Yes.
· seemed to be missing a standard that was just multiplication or division. Several of the 'basic' problem solving items need not align at all. There were two proportional thinking items that do not have a standard at 4th grade. several of the items I had more difficulty aligning in comparing to the work on the 3rd grade test. This possibly could be due to this is the first time 4th grade has been assessed.
· Several of the items were too easy for the grade level(e.g.#43 and #39).
· Yes
· 6.4.04 IS NOT NEEDED AT GRADE 4

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (4) : 80%
iv. Needs major improvement (1) : 20%

Table 4.15
Debriefing Summary
IL Mathematics Grade 4 Spring 2006

E. Comments

· Too many elapsed time problems, and why on earth would you have more than one item about differentiating between polygons and non-polygons? Also, there should be some objectives that deal with problem-solving, mathematical modeling, and some proof-like activity (informally justifying, conjecturing, etc.)
· Most of my comments and thoughts I addressed in the previous boxes. Overall, I felt the test was too easy for 4th grade. For having access to a calculator on this test, I felt it could be much more challenging.
· Some items were a bit difficult to code; i.e., #33, #49.
· MANY TASKS SEEMED EASY FOR 4TH GRADE

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· For the most part. However, many items on this test were difficult to fit to the objectives, which indicate that there are some missing objectives. For example, modeling operations should probably be an objective under 6B,C. See comments below.
· symmetry circles - diameter and radius
· There were no items from 9.5.04: circles, radius, diameter or from 9.5.06 lines of symmetry.
· 6.5.17 6.5.18 9.5.04 9.5.06
· PERCENTS CIRCLES DIVISION 6D

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Yes.
· yes
· yes

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Yes, with a couple exceptions: we couldn't figure out exactly what 6.5.02 and 9.5.10 were talking about.
· these items were on the most part easy to align. There does not seem to be an IAF objective though to cover multiplication and division of whole numbers.
· Yes,in most instances that was true.
· Standards seemed appropriate for intended grade level.
· 6.5.02 IS VAGUE-I'M NOT SURE WHAT IT MEANS 6.5.16-SHOULD IT READ "SOLVE PROBLEMS"? HOW DO 9.5.10 AND 9.5.02 DIFFER?

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (5) : 100%

E. Comments

· As with the previous grades, there should be some objectives dealing with mathematical processes, like problem-solving, justifying, and conjecturing.
· see comments on specific questions.

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes, but with two exceptions. There weren't actually any probability items, although a couple of items used a probability context. Also, more could be done with proportional reasoning (and less with those 2-D nets of 3-D figures).
· nets and venn diagrams have been on every assessment so far
· 10C
· PROBABILITY SHOULD HAVE BEEN ASSESSED

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Yes, but with two exceptions. On the test there should be more estimation requiring an analysis of appropriate precision (6.6.17). Likewise there should be a data analysis item that requires some analysis or interpretation of a graph rather than just the reading of one.
· many of the fraction problems could be solved very easily without the students even knowing much about fraction except compatible numbers - ie. 1 1/4 + 3/4 - therefore there's two, plus the other two fractions. see other notes on specific questions.
· Yes

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· For the most part, except we still can't figure out what 6.6.02 is supposed to mean.
· the standards were written at an appropriate level. at times, I felt the numbers used in some of the items were too easy thus not at the appropriate level for a 6th grader. ie. the input output tables - too easy
· Yes
· 6.6.02 IS VAGUE 6.6.17? WHAT IS INCLUDED HERE-NEEDS EXAMPLES

D. What is your general opinion of the alignment between the standards and assessment:

i. Perfect Alignment (2) : 40%
ii. Acceptable Alignment (3) : 60%

E. Comments

· Sure would like some objectives dealing with mathematical processes and thinking.
· The items seem to align better to the IAF then previous assessments (4th and 5th grade).

Table 7.15
Debriefing Summary
IL Mathematics Grade 7 Spring 2006

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes. It would be nice to have another item or two requiring students to algebraically describe a contextual situation (8.7.02, 8.7.10, 8.7.12).
· some of the 6a topics were underrepresented on this test compared to previous grades did not see a transformation question which is a nice application of the 4 quadrant coordinate system in the 7th grade
· Most important topics were covered.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Yes, with only two exceptions. 10.7.01 calls for interpretation and analysis of a kind that we didn't see on the test, and 6.7.12 calls for estimation and analysis, which we didn't see.
· i felt what was addressed was appropriate yet again, some of the objectives I felt were overrepresented - see notes in comments below and specific notes on different questions throughout the test.
· Important performance levels were covered.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· They are precise enough, for the most part. 6.7.13 and 6.7.06 might be combined, and 6.7.02 might be clarified. Also 6.7.08 and 6.7.17 are hard to distinguish.
· the assessment items seemed to align easily to the framework. I did not have difficulty is a large majority of the test aligning the items.
· Yes.
· IT WAS DIFFICULT DISTINGUISHING 9.7.01 FROM 9.7.02 FOR 2-D SHAPES 6.7.12 WAS NOT CLEAR 8.7.06 VS. 8.7.08? 8.7.06 COULD USE SOME EXAMPLES. 6.7.17 VS. 6.7.08-HOW ARE THEY DIFFERENT?

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (4) : 100%

E. Comments

· As before, the standards do not have have any objectives about problem-solving or proof-like activity (explanation, justification, conjecturing, etc.)

Table 7.15
Debriefing Summary
IL Mathematics Grade 7 Spring 2006

· several of the objectives seemed to be over represented while others were not addressed. #19, 61 and 66 - all the same objective 3 questions addressing the square root of a number I like that the numbers used in many of the questions were more 7th grade appropriate for ex. #44 in measuring this triangle - atleast the lengths of the sides were not whole numbers #45 - the mixed number 1 7/8 is used for the scale drawing length, #62 - another mixed number used. another example of over representation - 3 outcomes/fundamental counting questions, yet I don't recall any probability items on the last three tests there has been the net of a cube.
· THE CALCULATOR ISSUE RAISES QUESTIONS ABOUT ITEMS. MANY CALCULATORS TRANSLATE AMONG FRACTIONS-DECIMALS AND % WITH THE PUSH OF A BUTTON. SQUARE ROOTS HAVE THE SAME ISSUE.

Table 8.15
Debriefing Summary
IL Mathematics Grade 8 Spring 2006

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· For the most part. There was nothing about transformations, combinations, or permutations. On the other hand, too many items about circle circumference.
· Volume and surface area remained at the students still just using rectangular prisms. I'm surprised that some of the other shapes, as listed in the framework objectives, were not used for assessment purposes. In looking at the formula sheet - the only formulas needed by an 8th grader for this test was the circumference (added thought:which then increased the number of measurement questions and therefore other areas of this standard were not addressed as fairly), pythagarean theorem and prism formulas. The rest of the sheet was not needed. Percent - most of the percent problems were at the lower level, no problems with sales tax, discount amount or even sales price - all practical uses of percents
· There weren't any items where students had to find the percent.
· While there were some objectives that were no assessed, overall it seems that most standards were adequately covered.
· SCIENTIFIC NOTATION MORE PROPORTIONAL REASONING TASKS

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Mostly, except for the data analysis items. The objectives at this grade level start to ask for some analysis, prediction, and decision-making, and the data analysis items do not reflect this.
· levels of the questions seemed appropriate. see notes on specific questions
· Yes

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Yes.
· the standards were written to an appropriate level of specificity and the expectations at the 8th grade level. The state has raised the bar on the algebra strand at 8th grade.
· Yes
· IT WAS DIFFICULT TO DISTINGUISH AMONG: 7.8.02-7.8.03-9.8.04 REGARDING CIRCLES, CIRCUMFERENCE, ... SHOULD 9.8.03 SAY "SOLVE PROBLEMS"

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (4) : 80%
iii. Needs slight improvement (1) : 20%

Table 8.15
Debriefing Summary
IL Mathematics Grade 8 Spring 2006

E. Comments

· 1) There need to be more objectives involving problem-solving and proof-like activity (conjecturing, justifying, explaining, etc.). 2) There were quite a few items with source-of-challenge issues caused by the use of scientific calculators on the exam. Either change the items dealing with order of operations, fraction/decimal/percent conversions, and comparing rationals to irrationals, or disallow calculators on part of the test.
· I had no problem on the level of the standard and assessment - I felt they matched well. There is definitely some over representation of some areas in the measurement and geometry goals that need to be addressed. Circumference was assessed with too many items. Same as the 7th grade test - it was nice to see some problems with more grade appropriate numbers - ie. fractions, an algebra equation with the answer being a fraction, rather than a 'nice' whole number. Looking at the category table - this test should be 30% algebra and 15% measurement. I don't think this is the case.