How TILLS Can Make It Easier to Work in Meaningful Ways with School-Age Students

MSHA Short Course
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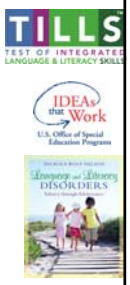
Disclosure/Acknowledgments

- **Nickola Nelson is a co-author of the Test of Integrated Language and Literacy Skills (TILLS). References to this measurement tool will be made during this session.**
- Nelson, N. W., Plante, E., Helm-Estabrooks, N.,& Hotz, G., (2016). Test of Integrated Language and Literacy Skills (TILLS). Baltimore, MD: Paul H. Brookes Publishing, Inc. (with potential royalties). Paul H. Brookes Publishing Co. also contributed financially and nonfinancially to the development of the TILLS.
- **Michele Anderson is a co-author of the Student Language Scale (SLS) and has a contractual relationship with Brookes Publishing. She served as coordinator for the IES grant that led to the standardization of TILLS.**
- Many graduate students, colleagues, test administrators
- U.S. Department of Education, Office of Special Education Programs, and Institute of Education Sciences, National Center for Special Education Research, Grant R324A100354 to Western Michigan University funded the standardization research on the TILLS. However, the opinions in this presentation are those of the authors and not the U.S. government.
- Information from other sources authored by Nelson:
  - Nelson, N. W. (2010). *Language and Literacy Disorders: Infancy through Adolescence*. Boston, MA: Allyn & Bacon.
  - Nelson, N. W., Bahr, C M., & Van Meter, A. M. (2004). *The writing lab approach to language instruction and intervention*. Baltimore, MD: Paul H. Brookes Publishing, Inc.



Participant Outcomes

After participating in this presentation, participants will be able to:

- 1. Describe the two language levels of assessment that cross oral and written language modalities.
- 2. List at least two advantages for constructing a learning profile from a co-normed test compared to putting together measures normed on different populations.
- 3. Describe benefits and limitations in using formal test data to track change over time.

When is our work the most meaningful?

What makes work meaningful?

- Student outcomes
- Teacher involvement
- Parent involvement

What makes work meaningful?

- Student outcomes
  - Meets grade-related curriculum standards
  - Can demonstrate core behaviors that were previously impossible
  - Can do things that matter to the student
  - Willing to try new things
  - Recognizes own accomplishments
- Teacher involvement
  - Feels pride in helping student learn
  - Plays an active role in setting and reaching goals
- Parent involvement
  - Plays an active role in setting and reaching goals
  - Recognizes new strengths in multiple contexts

Why do we need a new test?

Real world dilemma

- Girl qualified in kindergarten for speech and language services
- After intervention, most recently now as 2nd grader, re-tested with CELF-5 and no longer qualifies for services
- Team still concerned

What we did in the past

- Made our own test battery
- Tried to differentiate receptive versus expressive problems
- Compared apples and oranges (ignored the psychometric problems)
- Select one of a few tests that assesses both oral and written language, but…
  - Need a meaningful theoretical model
  - Difficult facilitate communication in teams
  - Reading and writing viewed as academic achievement, rather than language ability

Based decisions on models that lack evidence…

- Receptive v. expressive

or

- Oral v. written

Typical Assessment Options

- ❑ Assess sound/word & sentence/discourse abilities across spoken & written modalities
  - ❑ Could administer multiple tests of oral and written language (e.g., CELF5, GORT, TOWL, TNL, WRMT)
  - ❑ Need normative data based on common standardization group
  - ❑ Current options with common standardization group: WJIII, OWLS, ITPA, CELF5
  - ❑ Need to be able to interpret findings (sensible theoretical model)
- ❑ Seek corroboration from multiple sources
  - ❑ Ethnographic interviews; unstandardized tools
  - ❑ A few evidence-based checklists (ORS with CELF-4, Bishop's CCC)
- ❑ Add qualitative information from non-standardized contextualized measures
  - ❑ Curriculum-based language assessment and intervention (Nelson, 1989; 2010)
  - ❑ QRI-5 (Leslie & Caldwell, 2011)

Psychometric problems of compiling your own test battery

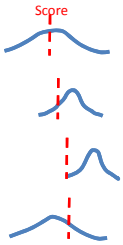
compared with using a well standardized co-normed test

Thanks to Elena Plante for these slides (ASHA 2014)

A Thought Experiment

- Johnny, age 8 is referred for testing. His test scores are as follows:
  - Test 1: Vocabulary test 92 (-0.53 SD)
  - Test 2: Morphosyntactic test 85 (-1.50 SD)
  - Test 3: Reading test 70 (-2.00 SD)
  - Test 4: Writing test 110 (+0.68 SD)

Another Look



- Test 1: Vocabulary test 92 (-0.53 SD)
- Test 2: Morphosyntactic test 85 (-1.50 SD)
- Test 3: Reading test 70 (-2.00 SD)
- Test 4: Writing test 110 (+0.68 SD)

Does This Happen in Real Life?

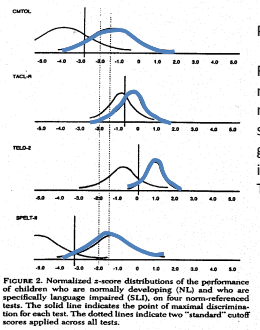


FIGURE 2. Normalized z-score distributions of the performance of children who are normally developing (NL) and who are specifically language impaired (SLI), on four norm-referenced tests. The solid line indicates the point of maximal discrimination for each test. The dotted lines indicate two "standard" cutoff scores applied across all tests.

Plante & Vance, 1994

Four tests of morphosyntactic skills normed on separate samples of children given to normal and impaired children in Tucson, AZ.

If tests are not co-normed, there is no guarantee that scores are directly comparable.

Applies to tests of different language domains.

Applies to cognitive referencing.

Revisiting our thought experiment

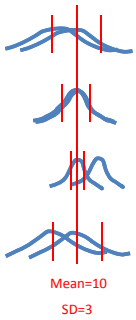
- Johnny, age 8 is referred for testing. His test scores are as follows:
  - Test 1: Vocabulary test 92 (-0.53 SD)
  - Test 2: Morphosyntactic test 85 (-1.50 SD)
  - Test 3: Reading test 70 (-2.00 SD)
  - Test 4: Writing test 110 (+0.68 SD)

Why does TILLS offer a "better way"?

- Co-normed sets of oral and written measures
- Validated for identifying disorders of oral and written language
  - Language disorders
  - Learning disabilities
  - Students at risk who need RTI
- Yields meaningful profiles so you know what to do next
- Allows you to communicate better with teachers, parents, and students

Co-norming

Subtest distributions all centered at the same standard score mean.



The spread around the mean still differs by subtest, but scores share a standard scaling.

What should our new test do?

- Assess **spoken *and* written** language (listening, speaking, reading, and writing) using a **co-normed sample**
- Reflect a coherent **model** and yield a **profile** of strengths and weaknesses that can inform team planning

What is TILLS?

TILLS™
TEST OF INTEGRATED LANGUAGE & LITERACY SKILLS

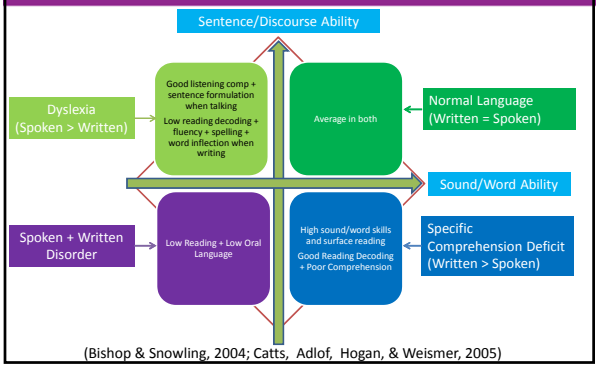
What does TILLS tell us?
Why is the test model important?

TILLS is validated for 3 purposes

- Identifying language/literacy disorders
- Profiling strengths and weaknesses
- Tracking change over time

How to Use TILLS to Understand Language/Literacy Needs of Your Students

Oral and Written Language Disorders: Two levels reconsidered



(Bishop & Snowling, 2004; Catts, Adlof, Hogan, & Weismer, 2005)

TILLS™ TEST OF INTEGRATED LANGUAGE & LITERACY SKILLS™ — Language Levels X Modalities Model

Modality	Language Level: Sound/Word Level	Language Level: Sentence/Discourse Level
Listening	1. Vocabulary Awareness (VA) 2. Phonemic Awareness (PA)	6. Listening Comprehension (LC) 8. Following directions (FD)
Speaking	4. Nonword Repetition (NWRep)	3. Story retelling (Comp Qs) (SRcomp) 13. Social communication (SC)
Reading	10. Nonword Reading (NWRd) 11. Reading Fluency (RF)	7. Reading comprehension (RC)
Writing	5. Nonword Spelling (NWSp) 12c. Written Exp - word score (WEwd)	12a. Written Exp discourse score (Wedisc) 12b. Written Exp sentence combining score (WEscs)
Memory	14. Digit Span Forward (DSF) 15. Digit Span Backward (DSB)	9. Delayed story retelling (DSR)

Nelson, N. W., Plante, E., Helm-Estabrooks, N., & Hotz, G. (2015). Test of Integrated Language and Literacy Skills™ (TILLS™). Brookes Publishing Co., Inc.

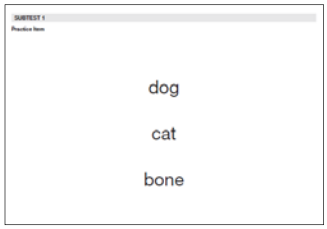
TILLS™ TEST OF INTEGRATED LANGUAGE & LITERACY SKILLS™

15 Subtests

17 scores (3 scores for Written Expression)

1. Vocabulary Awareness

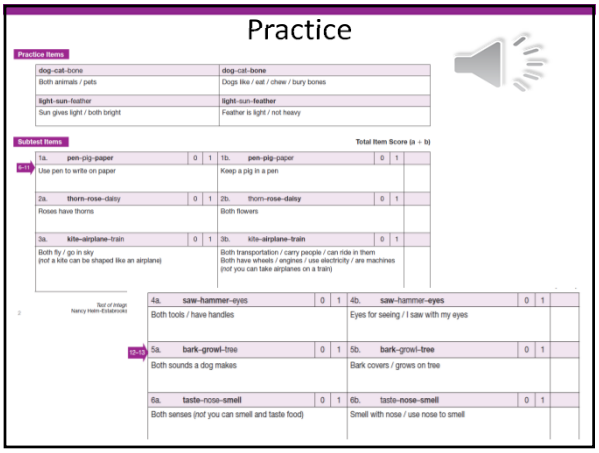
"Here are three words. Let's read them together."
"dog–cat–bone"
Say, ***"Tell me two words that go together."***
Then ask, ***"Why?"***



Practice Items

dog–cat–bone Both animals / pets	dog–cat–bone Dogs like / eat / chew / bury bones
light–sun–feather Sun gives light / both bright	light–sun–feather Feather is light / not heavy

Practice



Practice Items

dog–cat–bone Both animals / pets	dog–cat–bone Dogs like / eat / chew / bury bones
light–sun–feather Sun gives light / both bright	light–sun–feather Feather is light / not heavy

Subtest Items — Total Item Score (a + b)

1a.	pen–pig–paper Use pen to write on paper	0	1	1b.	pen–pig–paper Keep a pig in a pen	0	1
2a.	thorn–rose–daisy Roses have thorns	0	1	2b.	thorn–rose–daisy Both flowers	0	1
3a.	kite–airplane–train Both fly / go in sky (not a kite can be shaped like an airplane)	0	1	3b.	kite–airplane–train Both transportation / carry people / can ride in them. Both have wheels / engines / use electricity / are machines (not you can take airplanes on a train)	0	1
4a.	saw–hammer–eyes Both tools / have handles	0	1	4b.	saw–hammer–eyes Eyes for seeing / I saw with my eyes	0	1
5a.	bark–growl–tree Both sounds a dog makes	0	1	5b.	bark–growl–tree Bark covers / grows on tree	0	1
6a.	taste–nose–smell Both senses (not you can smell and taste food)	0	1	6b.	taste–nose–smell Smell with nose / use nose to smell	0	1

Practice Key

Practice Items

dog–cat–bone Both animals / pets dogs chase cats	dog–cat–bone Dogs like / eat / chew / bury bones
light–sun–feather Sun gives light / both bright	light–sun–feather Feather is light / not heavy coached double meaning

Subtest Items — Total Item Score (a + b)

1a.	pen–pig–paper Use pen to write on paper	0	1	1b.	pen–pig–paper Keep a pig in a pen DK [don't know]	0	1
2a.	thorn–rose–daisy Roses have thorns thorns grow on roses	0	1	2b.	thorn–rose–daisy Both flowers	0	1
3a.	kite–airplane–train Both fly / go in sky (not a kite can be shaped like an airplane)	0	1	3b.	kite–airplane–train Both transportation / carry people / can ride in them. Both have wheels / engines / use electricity / are machines (not you can take airplanes on a train)	0	1
4a.	saw–hammer–eyes Both tools / have handles	0	1	4b.	saw–hammer–eyes Eyes for seeing / I saw with my eyes DK	0	1
5a.	bark–growl–tree Both sounds a dog makes "Mean sound thing" bark/growl means a dog is mad	0	1	5b.	bark–growl–tree Bark covers / grows on tree "dogs sometimes like to bark at trees" (not central meaning)	0	1
6a.	taste–nose–smell Both senses (not you can smell and taste food) can taste better when you can smell	0	1	6b.	taste–nose–smell Smell with nose / use nose to smell	0	1

2. Phonemic Awareness

"If the word is bip, and we take away the first sound, the word becomes[hesitate]*... ip."*

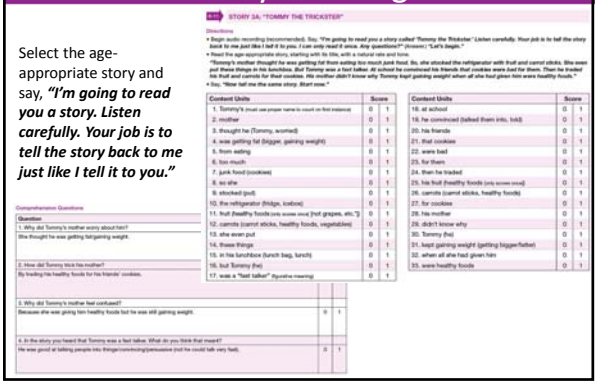
"If the word is stig, and we take away the first sound, the word becomes... tig."

Practice Items

Item	Phonetic spelling	Spoken response
bip → ip	/bɪp/ → /ɪp/	
stig → tig	/stɪg/ → /tɪg/	

3. Story Retelling

Select the age-appropriate story and say, ***"I'm going to read you a story. Listen carefully. Your job is to tell the story back to me just like I tell it to you."***



Practice Key

4. Nonword Repetition

Say, ***"I am going to play a voice recording for you. The person on the recording will say a pretend word that is not a real word. You will only hear the word once. Listen carefully so you can say the word just like the person you hear."*** Start the recording.

Subtest Items

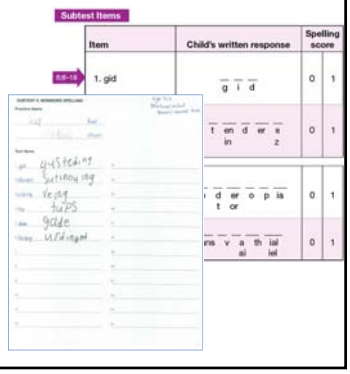
Item	Actual/target spoken response	Imitation score
1. gid	/gɪd/	0 1
2. stenders	/stɛndɚz/ /stɪndɚz/	0 1
23. proderopia	/prodɚopiə/	0 1
24. transvathial	/trænzvɛɪθiəl/	0 1

5. Nonword Spelling

Administer immediately after Nonword Repetition.

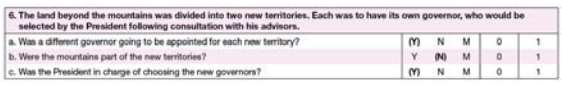
Say, ***"I am going to play another voice recording of pretend words. These are the same words you said before. This time your job is to spell the words."***

"Remember, these are not real words, but they are like real words..."



6. Listening Comprehension

Say, ***"I'm going to read some very short stories. Your job is to listen and pay careful attention. Then I'll ask you some questions about the story. Tell me 'yes' if you are sure the answer is 'yes.' Tell me 'no' if you are sure the answer is 'no.' If the story doesn't clearly tell you the answer, tell me 'maybe.'***



7. Reading Comprehension

Administer immediately following Listening Comprehension:

"Now, it's your turn to read some short stories and answer the questions in your Student Book. Circle yes if you are sure the answer is yes. Circle no if you are sure the answer is no. If the story doesn't clearly tell you the answer, circle maybe."

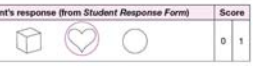
Subtest Items

6.8–11	**1. "What I Did on My Summer Vacation" is the topic the teacher makes her class write about the first day of school every year. When school started a month ago, the teacher gave her usual first writing assignment.**					
	a. Was "The Middle East" the first writing assignment?	Y	**(N)**	M	0	1
	b. Did all of the students take a trip on their summer vacation?	Y	N	**(M)**	0	1
	c. Did the teacher ask her class to write about their summer vacations?	**(Y)**	N	M	0	1

8. Following Directions

"I'm going to give you some directions to follow with your pencil in your Student Book. Listen carefully because I can only say them once. When I say 'Go,' move the card and use your pencil to follow the directions."

Subtest Items

	Instructions	Student's response (from *Student Response Form*)	Score	
6.12	Number 1: Draw a circle around the heart. Go.		0	1
	Number 6: Draw a line above the tree and circle the lock. Go. [Line may be horizontal or vertical.]		0	1
	Number 8: If there is an arrow pointing down, draw a circle under the moon. If not, circle the star. Go.		0	1

9. Delayed Story Retelling

Turn to the age-appropriate story and say, ***"Remember the story [Tommy the Trickster/The Rubber Raft]? Tell me the story again. Try to remember as much as you can. Start now."***

Content Units	Score		Content Units	Score	
1. Tommy's (must use proper name to count on first instance)	0	1	18. at school	0	1
2. mother	0	1	19. he convinced (talked them into, told)	0	1
3. thought he (Tommy, worried)	0	1	20. his friends	0	1
4. was getting fat (bigger, gaining weight)	0	1	21. that cookies	0	1
5. from eating	0	1	22. were bad	0	1
6. too much	0	1	23. for them	0	1
7. junk food (cookies)	0	1	24. then he traded	0	1
8. so she	0	1	25. his fruit (healthy foods [only scores once])	0	1
9. stocked (put)	0	1	26. carrots (carrot sticks, healthy foods)	0	1
10. the refrigerator (fridge, icebox)	0	1	27. for cookies	0	1
11. fruit (healthy foods [only scores once] [not grapes, etc.])	0	1	28. his mother	0	1
12. carrots (carrot sticks, healthy foods, vegetables)	0	1	29. didn't know why	0	1
13. she even put	0	1	30. Tommy (he)	0	1
14. these things	0	1	31. kept gaining weight (getting bigger/fatter)	0	1
15. in his lunchbox (lunch bag, lunch)	0	1	32. when all she had given him	0	1
16. but Tommy (he)	0	1	33. were healthy foods	0	1
17. was a "fast talker" (figurative meaning)	0	1			

10. Nonword Reading

Say, ***"These are pretend words that are not real words, but they are like real words. Your job is to read these words out loud."***

pog
keb
troom

redikament
nopiphonia
interdepable
smorifious
periothial
kizmanician

Subtest Items

	Stimulus word	Expected production (and acceptable alternatives)	Score	
6.6–7	1. pog	/p/ɑ/ /pɑg/	0	1
	2. keb	/keb/	0	1
	22. smorifious	/smor ɪ ˈfɪ əs/ /smor ɪ ˈfɪˑ əs/	0	1
	23. periothial	/per i ɑ ˈθɪ əl/ /per i ɑ ˈθɪˑ əl/ /per i o ˈθɪˑ əl/	0	1
	24. kizmanician	/kɪz mə ˈnɪˑ ʃən/	0	1

11. Reading Fluency

Say, ***"Here are some facts that tell a story. First, read the title out loud."***

"Now read the facts." **If the student is an emergent reader, you may say,** ***"Just read the words you know."***

The Principal's Daughter

We have a principal.
The principal has a daughter.
Her name is Sara.
She wants to be a clown.
She came Monday.
She came to our school.
She had on makeup.
She had on a wig.
A ball was on her nose.
It was red.
It was big.
She looked scary.
She walked into a class.
The children were young.
The children saw her.
Some children cried.
They were scared.
She took off her wig.
The children were happy.
They knew Sara.

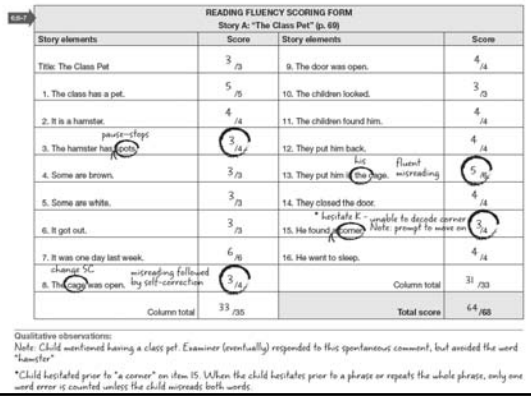
Practice

6.6–7

READING FLUENCY SCORING FORM Story A: "The Class Pet" (p. 69)			
Story elements	**Score**	**Story elements**	**Score**
Title: The Class Pet	/3	9. The door was open.	/4
1. The class has a pet.	/5	10. The children looked.	/3
2. It is a hamster.	/4	11. The children found him.	/4
3. The hamster has spots.	/4	12. They put him back.	/4
4. Some are brown.	/3	13. They put him in the cage.	/6
5. Some are white.	/3	14. They closed the door.	/4
6. It got out.	/3	15. He found a corner.	/4
7. It was one day last week.	/6	16. He went to sleep.	/4
8. The cage was open.	/4	Column total	/33
Column total	/35	**Total score**	**/68**

Qualitative observations:

Practice Key



READING FLUENCY SCORING FORM
Story A: "The Class Pet" (p. 69)

Story elements	Score	Story elements	Score
Title: The Class Pet	3 /3	9. The door was open.	4 /4
1. The class has a pet.	5 /5	10. The children looked.	3 /3
2. It is a hamster.	4 /4	11. The children found him.	4 /4
3. The hamster has spots. (pause—stops)	3 /4	12. They put him back.	4 /4
4. Some are brown.	3 /3	13. They put him in the cage. (his; fluent misreading)	5 /5
5. Some are white.	3 /3	14. They closed the door.	4 /4
6. It got out.	3 /3	15. He found a corner. (* hesitate K – unable to decode corner. Note: prompt to move on)	3 /4
7. It was one day last week.	6 /6	16. He went to sleep.	4 /4
8. The cage was open. (change SC; misreading followed by self-correction)	3 /4	Column total	31 /33
Column total	33 /35	Total score	64 /68

Qualitative observations:
Note: Child mentioned having a class pet. Examiner (eventually) responded to this spontaneous comment, but avoided the word "hamster"

*Child hesitated prior to "a corner" on item 15. When the child hesitates prior to a phrase or repeats the whole phrase, only one word error is counted unless the child misreads both words.

12. Written Expression – Discourse, Sentence, and Word Scores

Practice Story

- ***"Here's another story. It has facts about a little dog. It's okay, but it sounds choppy. Here is an example of how you could put the facts together to make it sound less choppy and more interesting."***

There was a dog.
He was little.
He was brown.
He was white.
He almost got hit by a car.
It was in front of our school.
He was scared.
He was okay.

SUBTEST 12: Written Expression (WE)
Sample Rewritten Story

A little brown-and-white dog almost got hit by a car in front of our school. He was scared, but he was okay.

12. Written Expression – Discourse, Sentence, and Word Scores

- ***"Now it's your turn to put the facts for your story together in a way that sounds better."***

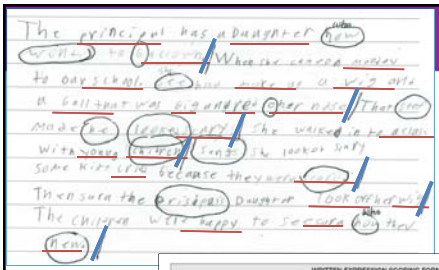
The Principal's Daughte

We have a principal.
The principal has a daughter.
Her name is Sara.
She wants to be a clown.
She came Monday.
She came to our school.
She had on makeup.
She had on a wig.
A ball was on her nose.
It was red.
It was big.
She looked scary.
She walked into a class.
The children were young.
The children saw her.
Some children cried.
They were scared.
She took off her wig.
The children were happy.
They knew Sara.

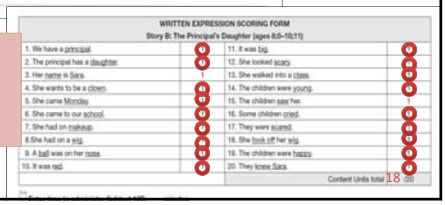
WRITTEN EXPRESSION CONTENT UNITS SCORING FORM
Story B: "The Principal's Daughter" (p. 71)

1. We have a principal.	0	1	11. It was big.	0	1
2. The principal has a daughter.	0	1	12. She looked scary.	0	1
3. Her name is Sara.	0	1	13. She walked into a class.	0	1
4. She wants to be a clown.	0	1	14. The children were young.	0	1
5. She came Monday.	0	1	15. The children saw her.	0	1
6. She came to our school.	0	1	16. Some children cried.	0	1
7. She had on makeup.	0	1	17. They were scared.	0	1
8. She had on a wig.*	0	1	18. She took off her wig.	0	1
9. A ball was on her nose.	0	1	19. The children were happy.	0	1
10. It was red.	0	1	20. They knew Sara.	0	1
			Content Units total		/20

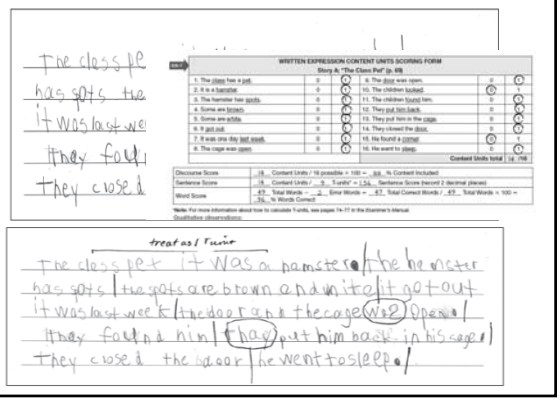
Discourse Score	___ Content Units / 20 possible × 100 = ___% Content Included
Sentence Score	___ Content Units / ___ T-units* = ___ Sentence Score (record 2 decimal places)
Word Score	___ Total Words − ___ Error Words = ___ Total Correct Words / ___ Total Words × 100 = ___% Words Correct



Discourse Score: 18/20 content units = 90%
Sentence Score: 18 content/7 T-units =2.57
Word Score: 74/88 wds without error = 84%



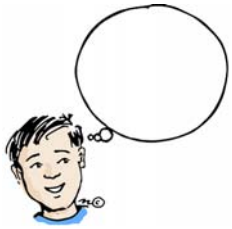
Practice

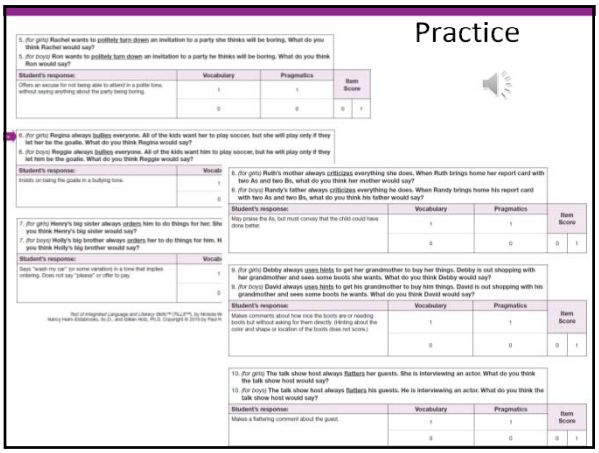


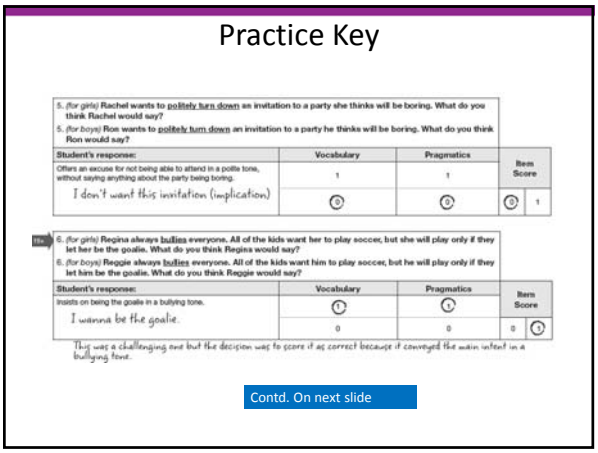
13. Social Communication

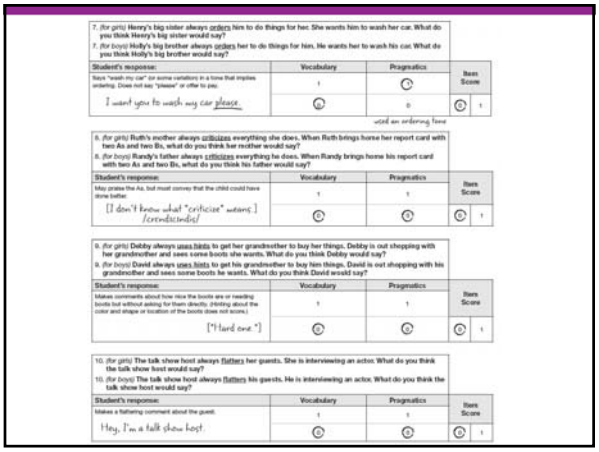
"This activity is about acting a scene, like from a show on TV or a movie. Your job is to be an actor."
Say, ***"I'll give you a really short scene. Then I'll ask you to tell me what one of the people would say. <u>This is important</u>—you should say it <u>how</u> the person would say it in the scene. Remember, you're the actor! Let's try one. I'll do the first one to show you."***

Ron wants to politely turn down an invitation to a party he thinks will be boring. What do you think Ron would say?









14. Digit Span Forward
15. Digit Span Backward

14. Say, ***"I am going to say some numbers. Listen to the numbers, and when I finish, you say them back to me exactly the same way."***

15. "This time, when I read the numbers to you, I want you to listen carefully and say them back to me in backward order."

Is there evidence supporting the test model?

Factor analysis support for the SVR

	Factor Reference Structure (Semipartial Correlations)		Final Communality Estimate
	Factor 1	Factor 2	
Phonemic Awareness	**0.547**	0.074	0.550
Non-word Spelling	**0.600**	0.067	0.642
Non-word Reading	**0.734**	-0.058	0.786
Reading Fluency	**0.406**	0.077	0.325
Written Expression Word Score	**0.409**	0.009	0.267
Story Retelling	-0.052	**0.500**	0.345
Vocabulary Awareness	0.229	**0.472**	0.629
Listening Comprehension	0.009	**0.548**	0.476
Reading Comprehension	0.264	**0.420**	0.589
Following Directions	0.153	**0.409**	0.412
Social Communications	0.075	**0.476**	0.428

How to Use the SLS and TILLS to Understand Language/Literacy Needs of Your Students

TILLS™ TEST OF INTEGRATED LANGUAGE & LITERACY SKILLS™

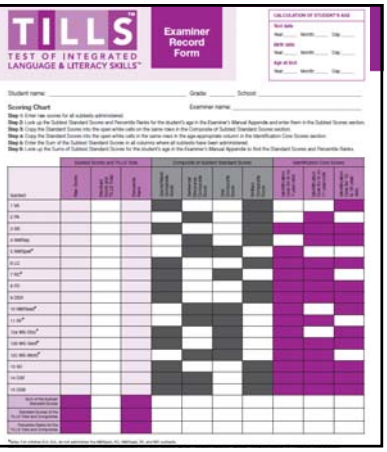
But first…

What will TILLS tell me?

Interpret TILLS results for 3 validated purposes

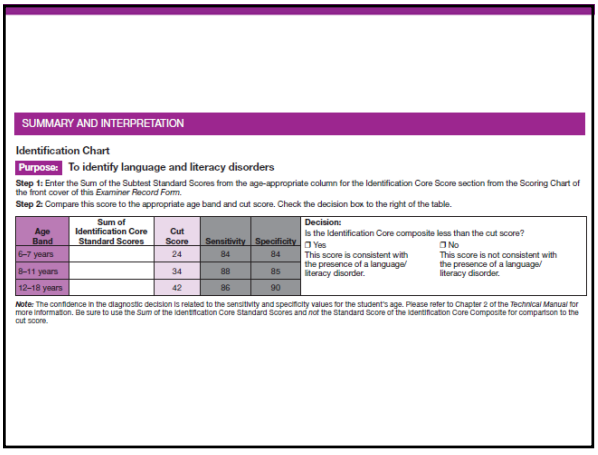
Purpose 1.

Identify language/literacy disorder



Identification Core Subtests, Cut Scores, and Sensitivity/Specificity

6-7 year olds	8-11 year olds	12-18 year olds
• Core subtests – Vocab Aware – Phoneme Aw – NW Rep • Sensitivity 84% • Specificity 84%	• Core subtests – Vocab Aware – NW Spell – NW Read – WE-Discourse • Sensitivity 88% • Specificity 85%	• Core subtests – Phoneme Aw – NW Spell – Rdg Comp – Reading Fluency – WE-Word • Sensitivity 86% • Specificity 90%



SUMMARY AND INTERPRETATION

Identification Chart

Purpose: To identify language and literacy disorders

Step 1: Enter the Sum of the Subtest Standard Scores from the age-appropriate column for the Identification Core Score section from the Scoring Chart of the front cover of this *Examiner Record Form*.

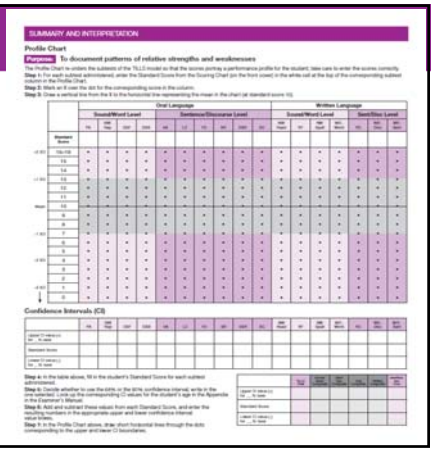
Step 2: Compare this score to the appropriate age band and cut score. Check the decision box to the right of the table.

Age Band	Sum of Identification Core Standard Scores	Cut Score	Sensitivity	Specificity	Decision: Is the Identification Core composite less than the cut score?
6–7 years		24	84	84	❒ Yes: This score is consistent with the presence of a language/literacy disorder. ❒ No: This score is not consistent with the presence of a language/literacy disorder.
8–11 years		34	88	85	
12–18 years		42	86	90	

Note: The confidence in the diagnostic decision is related to the sensitivity and specificity values for the student's age. Please refer to Chapter 2 of the *Technical Manual* for more information. Be sure to use the *Sum* of the Identification Core Standard Scores and *not* the Standard Score of the Identification Core Composite for comparison to the cut score.

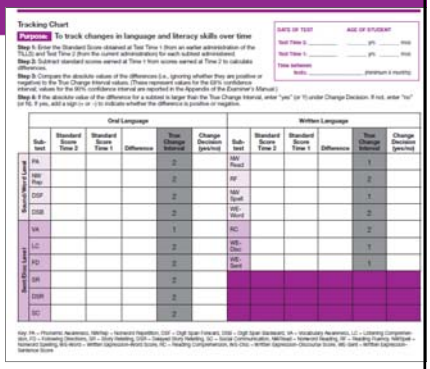
Purpose 2.

Profile strengths and weaknesses



Purpose 3.

Track change over time



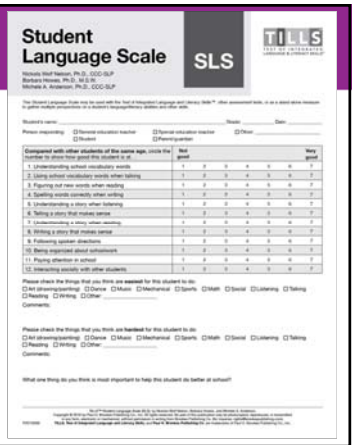
SLS
What is the SLS?
Why should I know about it?

Student Language Scale

SLS

Consider teacher, parent, and student input on the SLS

Multiple sources
Co-norming Student Rating Scale



Uses of the SLS

- Screening
- Different perspectives on strengths and weaknesses
- Communication between school and home

Teacher's/Parent's ratings on the first 8 items--

- Are 2 or more ratings <5?

→ High **sensitivity**
93% of 69 students with LLD identified accurately as having problems

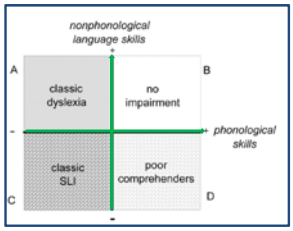
- Are all (but 1) ratings ≥5?

→ High **specificity**
90% of 206 students with NL identified accurately as **not** having problems

How will TILLS help me understand and communicate about students' needs?

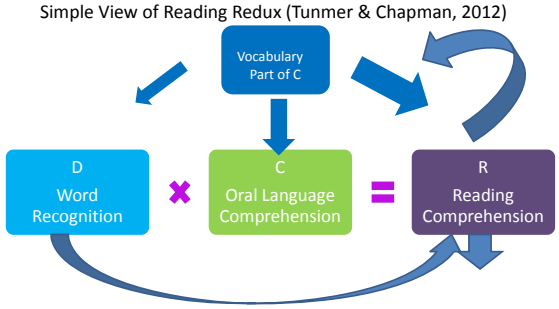
Relationships of Disorders of Oral & Written Language

- Two dimensions may explain dyslexia and specific language impairment (SLI)
  - Phonological skills (sound/word level)
  - Nonphonological skills (sentence/discourse level)



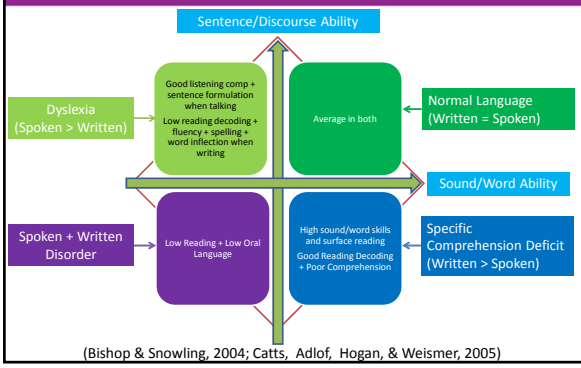
(Bishop & Snowling, 2004; Catts, Adlof, Hogan, & Weismer, 2005)

Simple View of Reading (SVR; Gough & Tunmer, 1986)
Simple View of Reading Redux (Tunmer & Chapman, 2012)

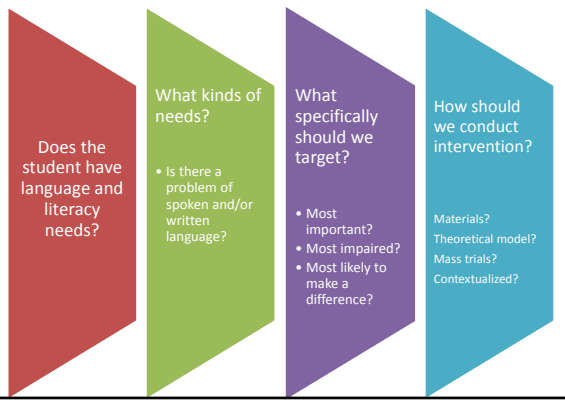


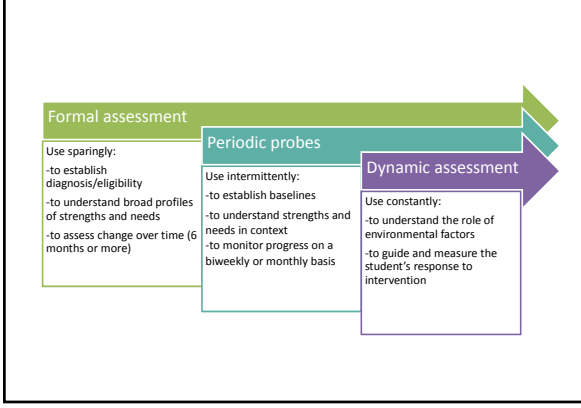
Pattern of Dyslexia
Listening comprehension > Reading comprehension
(Badian, 1999; Stanovich, 1994)

Oral and Written Language Disorders: Two levels reconsidered



(Bishop & Snowling, 2004; Catts, Adlof, Hogan, & Weismer, 2005)





Curriculum-based *language* assessment and intervention

- "Use of curriculum contexts and content for measuring a student's language intervention needs and progress." (Nelson, 1989, p. 171, LSHSS)
- ***Does the student have the language skills to learn the curriculum?***
- Used for periodic probes
- Contributes to dynamic assessment

Curriculum-Based Language Assessment and Intervention

Question	What it yields	Procedures
1. What language skills are required?	Expected Response [ER]	Consider language skills and strategies that effective language users employ.
2. What does the student currently do?	Observed Response [OR]	Describe by working with the student using dynamic assessment procedures.
3. What might the student learn to do differently?	Mismatch between ER ←→ OR	Establish instructional goals and benchmarks to target mismatch.
4. How should curricular task be scaffolded?	Bridge from OR → ER	Use dynamic assessment to design scaffolding and task modifications (if necessary).

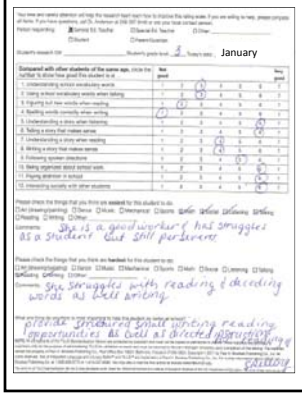
Tale of two students

Core Subtest (8-11)	Student 1	Student 2
Vocab Aware	6*	5
NW Spell	6	4
NW Read	7	2
WE-Discourse	4	11
Identification Core	23	22
Sound/Word Composite	50	85
Sentence/Discourse Composite	75	58

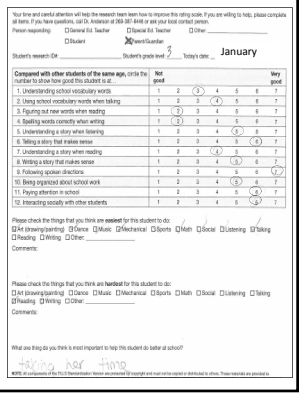
9 year old Third Grade Girl

- History of difficulty learning to read and write
- Tested for special ed in Grade 3 (not with the TILLS), but *did not qualify*
- Classroom teacher reported strength in math "if story problems are read aloud"

Gen Ed. Teacher SLS in 3rd Grade

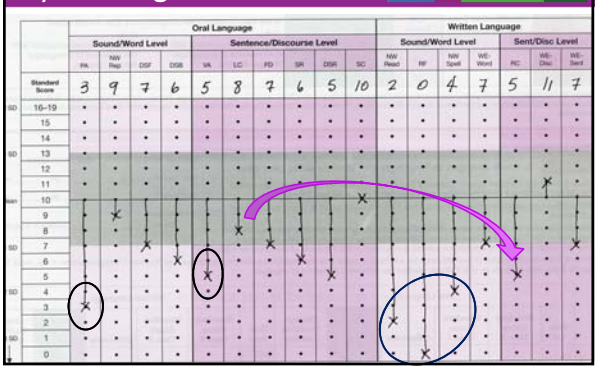


Parent SLS in 3rd Grade



Student 1
9 year old girl

TILLS™

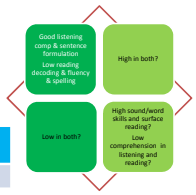


TILLS identification scores for 9 year old 3rd grade girl

Age Band	Identification Composite Standard Score	Cut Score	Sensitivity	Specificity	Decision: Is the identification composite less than the cut score?
6-7 years		24	84	84	
8-11 years	22	34	88	85	☒ Yes This score is consistent with the presence of a language/ literacy disorder.
12-18 years		42	86	90	☐ No This score is not consistent with the presence of a language/ literacy disorder.

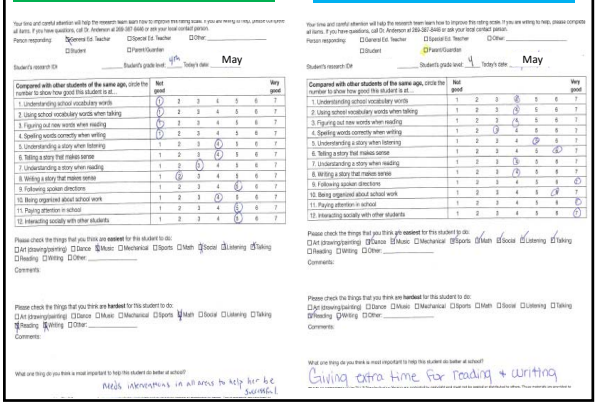
- Core subtests
  - Vocab Aware 5
  - NW Spell 4
  - NW Read 2
  - WE-Discourse 11

Sd/Word Composite	Sent/Disc Composite
50	75



A Little More than One Year Later

Gen Ed. Teacher SLS in 4th Grade | Parent SLS in 4th Grade



Problems at the sound/word level

TILLS Profile

- Low phonemic awareness
- Inadequate sound-symbol association knowledge
- Misses orthographic cues about how to pronounce vowels
- Reading fluency is a big problem
- Spelling rated lowest by both teacher and parent

Curriculum-based language assessment

Misses orthographic cues about how to pronounce vowels

Is student aware of inflectional and derivational morphemes?

Is student using relatively better sentence/ discourse skills to assist with fluency?

Is student using analogical processes to figure out unknown words?

Is student monitoring comprehension – "Does that make sense?"

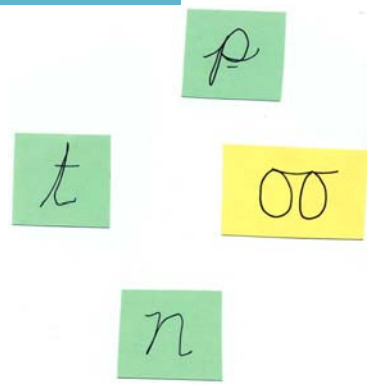
Grade 3 Reading: Foundational Skills

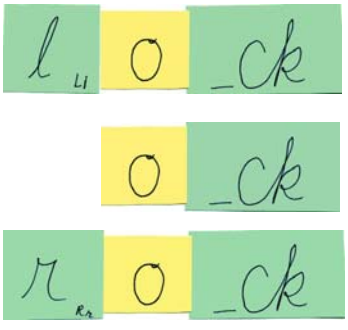
- **Phonics and Word Recognition:**
- CCSS.ELA-Literacy.RF.3.3
- Know and apply grade-level phonics and word analysis skills in decoding words.
  - CCSS.ELA-Literacy.RF.3.3.a
    Identify and know the meaning of the most common prefixes and derivational suffixes.
  - CCSS.ELA-Literacy.RF.3.3.b
    Decode words with common Latin suffixes.
  - CCSS.ELA-Literacy.RF.3.3.c
    Decode multisyllable words.
  - CCSS.ELA-Literacy.RF.3.3.d
    Read grade-appropriate irregularly spelled words.
- **Fluency:**
- CCSS.ELA-Literacy.RF.3.4
  Read with sufficient accuracy and fluency to support comprehension.
  - CCSS.ELA-Literacy.RF.3.4.a
    Read grade-level text with purpose and understanding.
  - CCSS.ELA-Literacy.RF.3.4.b
    Read grade-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.
  - CCSS.ELA-Literacy.RF.3.4.c
    Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

Grade 2 Reading: Foundational Skills

- **Phonics and Word Recognition:**
- CCSS.ELA-Literacy.RF.2.3
  Know and apply grade-level phonics and word analysis skills in decoding words.
  - CCSS.ELA-Literacy.RF.2.3.a
    Distinguish long and short vowels when reading regularly spelled one-syllable words.
  - CCSS.ELA-Literacy.RF.2.3.b
    Know spelling-sound correspondences for additional common vowel teams.
  - CCSS.ELA-Literacy.RF.2.3.c
    Decode regularly spelled two-syllable words with long vowels.
  - CCSS.ELA-Literacy.RF.2.3.d
    Decode words with common prefixes and suffixes.
  - CCSS.ELA-Literacy.RF.2.3.e
    Identify words with inconsistent but common spelling-sound correspondences.
  - CCSS.ELA-Literacy.RF.2.3.f
    Recognize and read grade-appropriate irregularly spelled words.

Identify words with inconsistent but common spelling-sound correspondences.





Distinguish long and short vowels when reading regularly spelled one-syllable words.

Sound-symbol association (alphabetic principle)

- Use multi-modality, multi-sensory approach to make sound-symbol association automatic
- Sound/letter → speech "Say /p/"
  - Make page for "My Sounds & Letters Book"
  - Symbol chip (avoid letter names)
  - Precise articulation; attention to distinctive features
- Sound/speech (visual or aud only) → symbol "Point to /p/"
  - From array of easily distinguished sounds/letters

    ee p t

    m _o_ s a_e
- Symbol → sound "What sound does this letter make?"
- Sound → letter "Write /p/"
- Letter name → "Point to 'p'" (use with caution)

Word Pattern Recognition (Orthographic Principle)

Misses orthographic cues about how to pronounce vowels

Reading fluency is a big problem

Is student aware of inflectional and derivational morphemes?

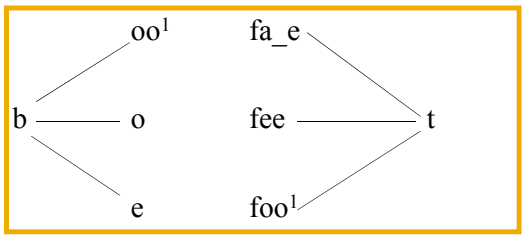
Is student using relatively better sentence/ discourse skills to assist with fluency?

Is student monitoring comprehension – "Does that make sense?"

- Consonant → Vowel
  - Single consonant → multiple vowels
  - Multiple consonants → single vowel
- Vowel → Consonant
  - Single vowel → multiple consonants
  - Multiple vowels → single consonant
- CVC
- Onset → Rime
  - Common "word families"
- Morphology ←→ Orthography
  - Common "chunks" -ing, -tion, un-, dis-

Decode words with common Latin suffixes.

Sound blending/ orthographic patterns



Alternative spellings for vowels (cross drill)

i_e	igh	_y
o_e	oa	_ow[2]
a_e	ai	_ay

Know spelling-sound correspondences for additional common vowel teams.

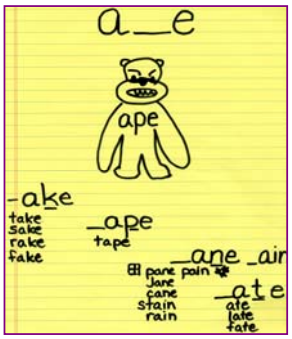
Combine work on speech & literacy

see	see	see
sa_e	say	sai_
si_e	si_e	sigh
so_e	soa	so
soo	sou	sue

Word Families (analogical processes)

- Misses cues about orthographic regularities in reading and spelling
- Limited use of analogical reading strategies

Read grade-appropriate irregularly spelled words.



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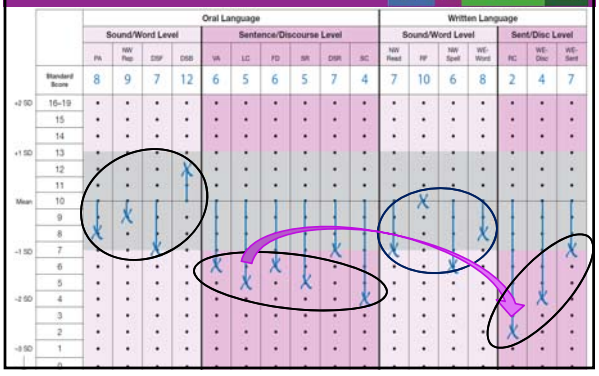
Problems at the sentence/discourse level and with vocabulary

Initial Case Example

- 9 year old originally referred for speech disorder
- after working on phonology, re-tested with CELF-5 and no longer qualifies for services
- team still concerned

9 year old 2nd grade girl TILLS



TILLS scores for 9 year old 2nd grade girl

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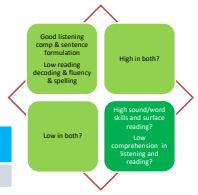
  - Vocab Aware 6
  - NW Spell 6
  - NW Read 7
  - WE-Discourse 4

Sd/Word Composite	Sent/Disc Composite
85	58



Comprehension & Composition

Nonword Reading and Reading Fluency cannot explain low Reading Comprehension.

Listening Comprehension and Reaching Comprehension both low

Omitted content in Written Expression suggests difficulty transferring content from Stimulus Book page (but good WM on DSB)

Vocabulary and Social Communication both low

Did improve on Delayed Story Retelling

- Start with expression of own ideas
  - Orally
  - In writing
  - General principle: Elaboration before correctness
- Dynamic assessment/scaffolding of area of breakdown
  - Missing key vocabulary?
    - Direct instruction, illustration, application in new contexts; moisten the vocabulary sponge
  - Sentence level?
    - Paraphrasing
    - Sentence verification
    - Use relatively stronger oral language abilities
  - Discourse level?
    - Detecting macrostructure
    - Organizing texts to achieve a communicative purpose

Grade 2 Reading: Key Ideas

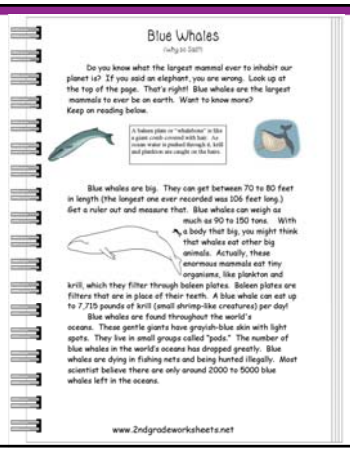
Informational Text

- CCSS.ELA-Literacy.RI.2.1 Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text.
- CCSS.ELA-Literacy.RI.2.2 Identify the main topic of a multiparagraph text as well as the focus of specific paragraphs within the text.
- CCSS.ELA-Literacy.RI.2.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text.

Literature

- CCSS.ELA-Literacy.RL.2.1 Ask and answer such questions as *who, what, where, when, why*, and *how* to demonstrate understanding of key details in a text.
- CCSS.ELA-Literacy.RL.2.2 Recount stories, including fables and folktales from diverse cultures, and determine their central message, lesson, or moral.
- CCSS.ELA-Literacy.RL.2.3 Describe how characters in a story respond to major events and challenges.

Second Grade Text


Blue Whales

Do you know what the largest mammal ever to inhabit our planet is? If you said an elephant, you are wrong. Look up at the top of the page. That's right! Blue whales are the largest mammals to ever be on earth. Want to know more? Keep on reading below.

Blue whales are big. They can get between 70 to 80 feet in length (the longest one ever recorded was 106 feet long.) Get a ruler out and measure that. Blue whales can weigh as much as 90 to 150 tons. With a body that big, you might think that whales eat other big animals. Actually, these enormous mammals eat tiny organisms, like plankton and krill, which they filter through baleen plates. Baleen plates are filters that are in place of their teeth. A blue whale can eat up to 7,715 pounds of krill (small shrimp-like creatures) per day!

Blue whales are found throughout the world's oceans. These gentle giants have grayish-blue skin with light spots. They live in small groups called "pods." The number of blue whales in the world's oceans has dropped greatly. Blue whales are dying in fishing nets and being hunted illegally. Most scientist believe there are only around 2000 to 5000 blue whales left in the oceans.

www.2ndgradeworksheets.net

Expository Text Macrostructure

- Hierarchical/descriptive

Superordinate

Subordinate Subordinate

- Procedural sequence

[1] details → [2] details → [3] details

- Comparison/contrast

Topic

like different

Antecedent → Consequence

[details] [details]

Examples from a 4th Grade Science Textbook

1. How is the crust under the ocean different from the continental crust?
   (compare-contrast)
2. Name 3 ways that plates can move in relation to each other?
   (hierarchical descriptive)

Examples (cont'd.)

3. How could convection currents in the mantle cause the plates to move?
   (antecedent-consequence)
4. How does the movement of the plates in the Atlantic Ocean create volcanoes in the ocean?
   (antecedent-consequence)

Semantic Hierarchies

- Charts
  - Is a…
  - Has a…
  - Kinds of…
- Backward and forward questioning
  - "What is a blue whale?"
  - "What is the largest mammal on earth?"

Whales

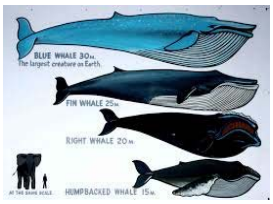
Blue whale is

- Largest mammal on earth
- 70-80 feet long
- 90-150 tons
- Big mammal but eats tiny organisms
  - Plankton
  - Krill

Blue whale has

- Baleen plates
- Grayish blue skin with white spots

Kinds of Whales



Plankton/Krill is a kind of tiny organism that whales eat

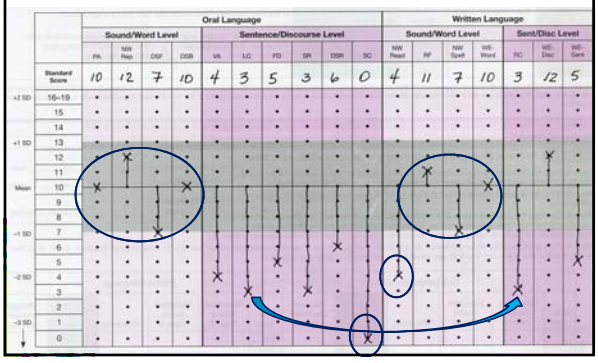
Older students with multiple needs

10 year old 5th Grade Boy

- Hx of prematurity; born at 26 weeks, in hospital for 5 months
- Primary eligibility speech/language impairment on basis of language
- Goals in multiple areas of language and math
  - Verbal expression
  - Language content
  - Reading comprehension
  - Math calculation
  - Math reasoning

10 year old boy

TILLS™

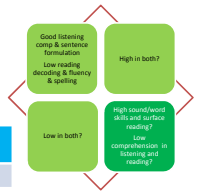


TILLS scores for 10 year old boy

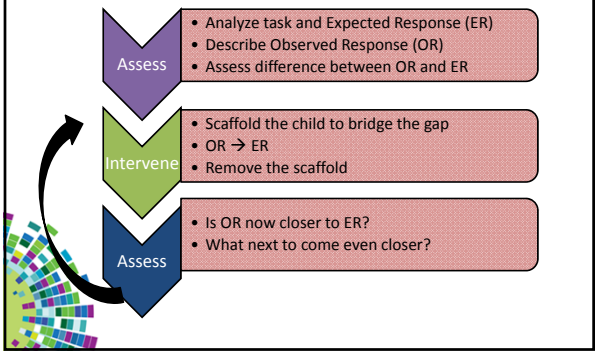
Age Band	Identification Composite Standard Score	Cut Score	Sensitivity	Specificity	Decision: Is the identification composite less than the cut score?
6-7 years		24	84	84	☒ Yes This score is consistent with the presence of a language/ literacy disorder.
8-11 years	27	34	88	85	☐ No This score is not consistent with the presence of a language/ literacy disorder.
12-18 years		42	86	90	

- Core subtests
  - Vocab Aware
  - NW Spell
  - NW Read
  - WE-Discourse

Sd/Word Composite	Sent/Disc Composite
92	57



Dynamic Assessment



Scaffolding

- Questions as guides, not tests--contrasting with traditional "teacher talk"
- "What teachers say or do to enable children to complete complex mental tasks they could not complete without assistance" (Pearson & Fielding, 1991, p. 842)
- A bridge from the OR to ER
- Allowing students to see what they do know
- Build the scaffold, but don't forget to take it down (working strategically toward independence)

- **Questions**
  "I wonder," "Wait, let me think," "What if..."
- **Frame and focus**
  "Look at you putting the –ed ending on your verbs!" "Take a look at this."
- **Guides/models/recasts**
  "How about if we try this? "Say _____ (in syllables)."
- **Feedback cues**
  "Tripping" over errors [the Columbo routine]
  "Wait a minute,_____ doesn't make sense to me."
- **Create new learning strategies**
  Provide tool book pages and other supports
  Highlight aspects of text macrostructures

Example of 5th Grade Text

(p. 64, CCSS, Appendix B)

Farley, Walter. *The Black Stallion*. New York: Random House Books for Young Readers, 2008. (1941)
From Chapter 1: "Homeward Bound"
The tramp steamer *Drake* plowed away from the coast of India and pushed its blunt prow into the Arabian Sea, homeward bound. Slowly it made its way west toward the Gulf of Aden. Its hold was loaded with coffee, rice, tea, oil seeds and jute. Black smoke poured from its one stack, darkening the hot cloudless sky.

Alexander Ramsay, Jr., known to his friends back home in New York City as Alec, leaned over the rail and watched the water slide away from the sides of the boat. His red hair blazed redder than ever in the hot sun, his tanned elbows rested heavily on the rail as he turned his freckled face back toward the fast-disappearing shore.

A Voyage That Changed History

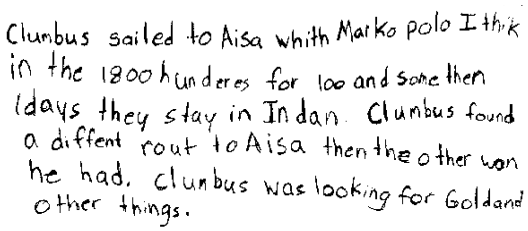
Have you ever read a book over and over again? About 500 years ago, Christopher Columbus did. The book told of faraway countries where people dressed in brightly colored silks. It described a beautiful gold palace.

The book had been written by an Italian named Marco Polo in 1298, more than 150 years before Columbus was born. It described the 17 years Marco Polo spent in India, China, and Japan. Columbus hoped one day to see those Asian countries for himself. In the 1400's, however, the trip to Asia was as long and difficult as it had been in Marco Polo's day. The only routes Columbus knew crossed huge deserts and tall mountains. Still, Columbus felt sure there was a faster, shorter way to Asia. He planned to find it.

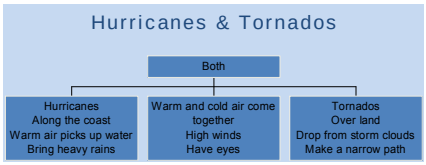
Fifth grader – Speech-language services only

Columbus, he um
Columbus was sailing Marco Polo to Asia
and he was trying to find a different route…to Asia
and…
A hundred years they spent
A hundred something years they spent in India or something…
somewhere around there
and um…
Can't remember

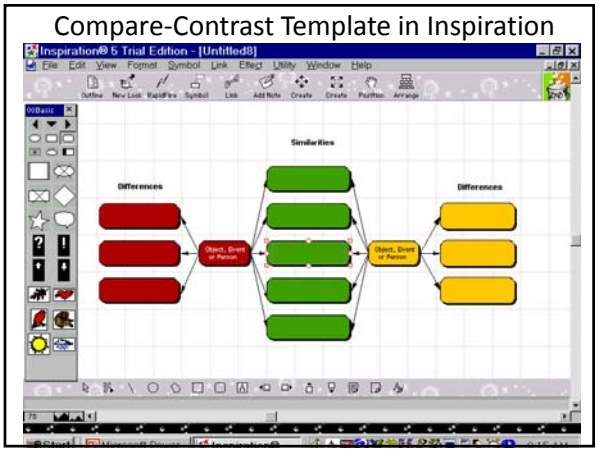
Writing Sample


Clumbus sailed to Aisa whith Marko polo I thik in the 1800 hunderes for 100 and some then 1days they stay in Indan. Clumbus found a diffent rout to Aisa then the other won he had. clumbus was looking for Gold and other things.

Compare and Contrast



Compare-Contrast Template in Inspiration



My Big Idea: (what type of weather will you study?)

Hail

What do you already know about your BIG IDEA? hail I know that hail can brake cars and houses because they are so big they can brake alot of things and it can kill people and other things that are out side and people that are outside

What resources will you use and how will you use them? (where will you get your information?

1. we will yous internet
2. books
3. teachers

List 5 questions that you have about your big idea that will lead your research.

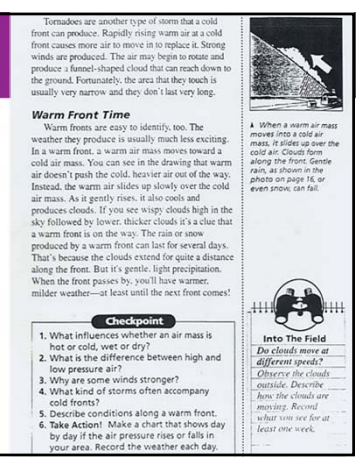
1. I want to know how big can it glow in life
2. I want to know can they break alot of stuff
3. is it true they can be dandouts around kids like me
4. do you know what you can do with hail
5. can you discover about diferent stuff about hail

On the back: Begin to plan how you will organize your weather presentation.

Or take notes from your science book (Discover the Wonder) about the type of weather you've chosen to study.

Minilesson on Note taking

Grad student: Frazier Jordan


Tornadoes are another type of storm that a cold front can produce. Rapidly rising warm air at a cold front causes more air to move in to replace it. Strong winds are produced. The air may begin to rotate and produce a funnel-shaped cloud that can reach down to the ground. Fortunately, the area that they touch is usually very narrow and they don't last very long.

Warm Front Time

Warm fronts are easy to identify, too. The weather they produce is usually much less exciting. In a warm front, a warm air mass moves toward a cold air mass. You can see in the drawing that warm air doesn't push the cold, heavier air out of the way. Instead, the warm air slides up slowly over the cold air mass. As it gently rises, it also cools and produces clouds. If you see wispy clouds high in the sky followed by lower, thicker clouds it's a clue that a warm front is on the way. The rain or snow produced by a warm front can last for several days. That's because the clouds extend for quite a distance along the front. But it's gentle, light precipitation. When the front passes by, you'll have warmer, milder weather—at least until the next front comes!

▲ When a warm air mass moves into a cold air mass, it slides up over the cold air. Clouds form along the front. Gentle rain, as shown in the photo on page 16, or even snow, can fall.

Checkpoint

1. What influences whether an air mass is hot or cold, wet or dry?
2. What is the difference between high and low pressure air?
3. Why are some winds stronger?
4. What kind of storms often accompany cold fronts?
5. Describe conditions along a warm front.
6. **Take Action!** Make a chart that shows day by day if the air pressure rises or falls in your area. Record the weather each day.

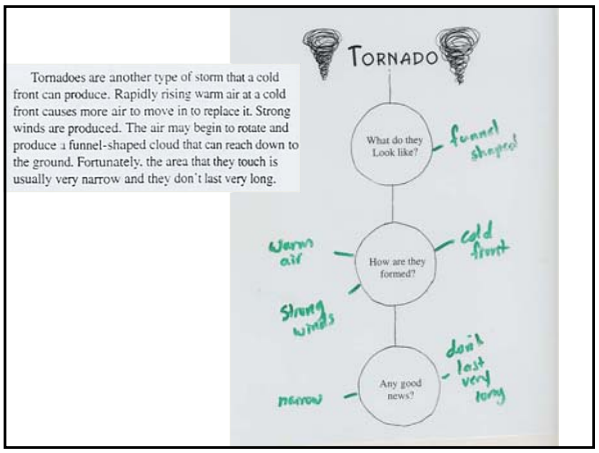
Into The Field

Do clouds move at different speeds?

Observe the clouds outside. Describe how the clouds are moving. Record what you see for at least one week.

Scaffolding Note-Taking from Videotape

- Keep your questions in mind
- Scan for answers and interesting information
- Chunk information (don't try to write down every thing; abbreviate)
- Use key vocabulary but explain in your own words

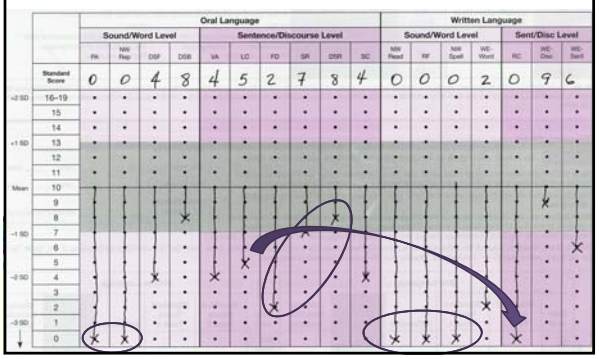


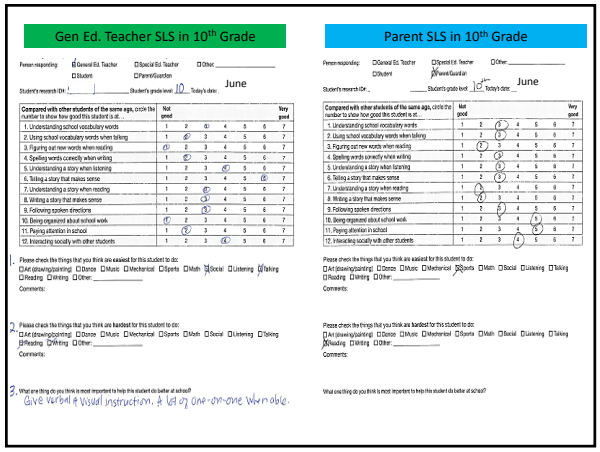
14 year old 10th Grade Boy

- Hispanic; had been learning English since birth
- History of speech/language impairment on basis of language
  - Syntax goals
  - Morphology goals
- SLI primary and SLD secondary on IEP

14 year old boy

TILLS™





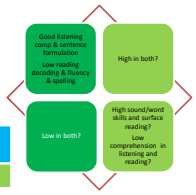
TILLS scores

Age Band	Identification Composite Standard Score	Cut Score	Sensitivity	Specificity
6-7 years		24	84	84
8-11 years		34	88	85
12-18 years	2	42	86	90

Decision:
Is the identification composite less than the cut score?
☒ Yes
This score is consistent with the presence of a language/ literacy disorder.
☐ No
This score is not consistent with the presence of a language/ literacy disorder.

- Core subtests
  - Phoneme Aw
  - NW Spelling
  - Reading Comp
  - Reading Fluency
  - WE-Word

Sd/Word Composite	Sent/Disc Composite
8	58



450219

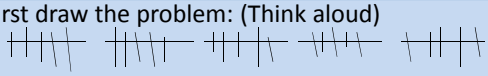
Take 2 numbers and do something.

- There are 5 bike racks at Sam's school. Each rack holds 5 bikes. How many students can park their bikes in a rack?

- 5 + 5 = 10

There are 5 bike racks at Sam's school. Each rack holds 5 bikes. How many students can park their bikes in a rack?

First draw the problem: (Think aloud)



Then do the math:

5 (racks) x 5 (bikes *each*) = 25

Does that make sense? Does it match the picture?

WHAT DO I NEED TO DO?

FIRST DRAW THE PROBLEM AND THEN DO THE MATH.

Similar Student's Story (TOWL-2)

- Josh
- Story on TOWL-2
  - Many spelling errors
  - Limited evidence of morphemic awareness
  - Some morphosyntax errors in writing not observed in speech

The cave men fited of the grat mamist. They trow spears at the mamist. They cepe coming. They wanead food. More cave men come and fit them off but they unsixses fil. The the trow rock and stowns and they won the batil but not the wore between man and beast. They ma come back or not but they will be retey.

First story in Writing Lab

ONE MORNING DUKE WOKE ME UP. WE PLAYED WITH HIS CHEWY TOY. IT THREW IT UP AND HE CAUGHT IT. WE DID IT A COUPLE OF TIMES. THEN WE ATE BREAKFAST. WE PLAYED SOME MORE. I LET HIM OUT SIDE. IT WAS RAINING OUT. HE DIDN'T STAY OUT VERY LONG. HE WAS HYPER. BUT HE SETTLED DOWN. HE WENT TO SLEEP FOR A WHILE. THEN HE MESSED WITH THE CAT. THE CAT WAS NOT HAPPY. THE CAT RAN, THE DOG RAN AFTER IT. HE BARKED THEN HE STOPPED. IT WAS NO FUN ANY MORE. I PLAYED WITH HIM HE WAS HAPPY NOW.

Intervention Goals for Josh

- Demonstrate leadership during author groups
- Discourse: Generate story ideas (beyond dogs and horses) using computer supports
- Sentence: Produce majority complex sentences, using variety of subordinating and embedding
  - Use peer editing feedback to add details
  - Use computer tools during revising & editing to elaborate syntax and correct any errors
- Word: Improve independent spelling
  - Demonstrate sound-symbol association knowledge with key board to generate good phonetic equivalents (GFE) while drafting
  - Show knowledge of morphemic-orthographic relationships (*-ed, -tion, -ead, -ough*, etc.)
  - Use spell checker effectively to correct spelling during editing

Progress for Josh

- Role model for younger students; friendly competition with sibling of one student in group
- Discourse: Mixed interest in nature with experimentation in adventure and mystery writing "Nature Nightmare," "On the Edge of Extinction"
- Sentence: Final story
  - 188 total words (100 different word roots)
  - 23 T-units, MLTU 9.35 words
  - Variety of sentence types (although simple still dominated)
    1 [si] 11[sc] 1[ci] 7[cc]
- Word: Improve independent spelling
  - Mastered spell checker in two programs
  - When spell checker did not suggest correct alternative, benefited from scaffolding to generate GFE to produce alternative that could be recognized by computer

Flight 101

It started off in space. I'm Tom and here is my band of misfits. We're to protect the colony of Z-6. The colony is pretty peaceful. Sometimes we help other colonies with their troubles. We fly a Mustang xl 117. Sometimes we engaged the enemy in battle at the very ends of the universe. One morning my squad found some pirates firing on a smaller colony. We fired on them. Before they left we got five of them, but this time they fired back, so we attacked them. They lost 11 of the 12 ships; we lost 2 of the 10. We let one of them get away to tell the pirates. That day the colony of Z-6 was sad for the men that died that morning. The colony replaced the men and ship with new recruits and with the new Mustang xl 117. The next day we cleaned our Mustang xl 117s until they shined, loaded them up with fuel and ammo. The pirates attacked the colony so we scrambled the Mustang xl 117. Our squad took the pirates apart. The pirates never messed with the colony of Z-6 or any other colonies again.

THE END

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