

# Technical Information

## Technical Adequacy of Progress Monitoring Passages

Over the course of three school years (2002-2003, 2003-2004, and 2004-2005), READ NATURALLY field tested dozens of reading passages at each grade level for the purpose of continuous progress monitoring. We sent passages to classrooms throughout the country and piloted with a diversity of students. We tested students on these passages as well as on grade level benchmark passages from the Reading Fluency Benchmark Assessor and compared students' words correct per minute (WCPM) on the monitoring passages with their WCPM on the benchmark passages. Some monitoring passages were too hard for a particular grade level and some were too easy. We modified these passages and/or tested them in a different grade. Ultimately, each passage met the benchmark passage in difficulty or we discarded it. We calibrated a total of 30 passages per grade level. The table below summarizes the results of these analyses.

The table lists correlation data about the progress monitoring passages compared to each other and to the grade level benchmarks. The correlation between the benchmark and monitoring passages is a measure of validity. Correlations range from -1.0 to +1.0. High correlations (.8 or higher) between the monitoring passage and the benchmark passage means that the two passages are measuring the same skill (reading fluency) with a high degree of consistency. Monitoring passages with high correlations to the benchmark and to other monitoring passages have high reliability and validity.

The table also lists data on the difficulty of the monitoring passages compared to the benchmarks. A difficulty of -2.1, for example, would indicate that the median WCPM of all students tested on the monitoring passage was 2.1 words less than their median WCPM on the benchmark passage. If the median WCPM for students on the benchmark was 50.5 and the median WCPM for students on the monitoring passage was 48.4, the difficulty on that passage would be 48.4 minus 50.5, which is -2.1. (For more detailed technical information on the benchmark passages, see the READ NATURALLY website, [www.readnaturally.com/support](http://www.readnaturally.com/support), or the Reading Fluency Benchmark Assessor.)

Grade (30 passages per grade)	Median Correlation with Benchmark	Benchmark Correlation Range	Median Correlation with Other Passages	Other Passage Correlation Range	Median Difficulty (words correct per minute difference)	Range of Difficulty
1	.96	.91 to .99	.96	.92 to .99	-2.0	-6.0 to 4.0
2	.95	.90 to .99	.96	.92 to .99	-1.5	-5.9 to 4.1
3	.94	.89 to .99	.94	.90 to .99	-0.5	-5.5 to 3.8
4	.94	.92 to .98	.94	.90 to .97	1.3	-4.9 to 5.3
5	.93	.81 to .98	.93	.79 to .96	0.3	-5.1 to 5.3
6	.94	.89 to .97	.95	.85 to .97	-0.7	-5.6 to 6.0
7	.94	.87 to .97	.95	.88 to .97	-1.2	-5.7 to 5.8
8	.95	.88 to .98	.95	.91 to .97	-0.7	-5.5 to 5.2

# Correlation Summary for Grade 1 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 1. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor passage scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
I Like Fall	-2.1	.97	.98	73
Pets	1.8	.95	.95	60
My Big Sister	-2.1	.95	.92	60
Jill's First Bike	0.5	.94	.92	60
Meg's Race	-0.9	.99	.99	59
Colors	0.6	.98	.99	59
Baby Sara	1.0	.98	.99	59
My New Puppy	-1.9	.97	.95	61
Pennies for Pine Cones	-4.0	.96	.96	60
My Camera	2.4	.96	.97	60
Art	3.9	.98	.97	56
Pigs	-5.1	.91	.94	61
Sugar Cookies	-0.8	.94	.94	61
Grandpa	-4.1	.97	.96	60
Bubble Gum	-2.8	.96	.97	60
Making Lunch	-2.3	.95	.95	60
Mom's Hobby	-6.0	.94	.94	60
Sue's Birthday	-3.9	.98	.96	61
Math	3.4	.94	.95	60
Bath Time	-4.3	.97	.96	89
Bread	-5.3	.94	.96	88
Fruit	0.8	.96	.96	58
Tree Houses	1.4	.94	.96	58
Loose Tooth	-3.2	.95	.95	70
Stay Healthy	-3.3	.97	.96	70
Igloos	-1.3	.95	.95	60
Zoo Trip	0.2	.98	.95	60
Root Beer Floats	4.1	.98	.98	59
Popcorn	-5.2	.97	.97	59
Ann's Fall	-5.6	.96	.97	55

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and

# Correlation Summary for Grade 2 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 2. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor passage scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
Let's Go Camping	3.1	.95	.96	60
Jane's Recital	4.1	.96	.96	60
Groups of Dogs	-4.6	.99	.98	60
All About Crabs	-2.3	.99	.99	60
George's New Neighbors	-1.4	.97	.98	60
My Baby Brother	4	.96	.96	59
Making Pizza	-4.4	.97	.97	60
Teeth	0.3	.92	.92	60
Kate's Painting	-5.9	.93	.95	53
Best Birthday	-0.8	.95	.95	53
Too Much Candy	-1.6	.90	.94	60
The Shot	3.2	.94	.94	60
Stars of the Sea	-1.5	.94	.93	64
Antlers	-3.9	.95	.95	59
Sam's Play	-1.4	.94	.95	59
The Store	1.1	.94	.94	60
Fire Fighters	-4.8	.95	.92	51
Wind	-4.6	.97	.97	60
Ducks	-5.6	.97	.96	60
Spelling Bee	1.4	.96	.96	60
Sand	0.8	.94	.95	59
Water	-1.2	.95	.95	60
S'mores	-0.5	.94	.96	59
Lions	0.3	.97	.97	60
Lemonade Stands	-3.98	.93	.95	60
The Science Fair	3.3	.94	.94	60
Seals	-2.55	.96	.96	60
Sleepover Party	-2.11	.95	.95	60
Uncle Bob	-3.9	.96	.96	56
Saint Patrick's Day	-4.1	.97	.96	57

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and testing cycles and were thus tested with a considerably higher number of students overall.

# Correlation Summary for Grade 3 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 3. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor passage scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
The Gift	-5.5	.94	.94	60
Fishing Fun	-0.3	.95	.96	60
Spiders Everywhere	-3.4	.92	.93	64
Bobby's Play	3.8	.95	.95	60
Full of Freckles	0.6	.97	.98	60
Green Flash	0.7	.93	.93	57
Fire Ranch	-3.2	.95	.93	30
Becoming a Knight	2.3	.92	.93	30
How High?	-4.7	.94	.94	60
The Light Fantastic	-3.8	.89	.94	60
April Fools	0.0	.94	.92	60
Groundhog Day	-1.0	.93	.93	60
Costume Contest	-.9	.92	.92	60
Hiccup Cures	-0.6	.95	.95	60
John's Drums	1.5	.95	.95	60
Becky's Big Responsibility	2.1	.96	.96	58
Panning for Gold	2.1	.96	.95	59
Trick Candles	-2.8	.94	.94	30
Stoplights	.5	.93	.90	60
Listening to Shells	1.4	.93	.90	60
Fairy Rings	0.4	.92	.93	58
Millie's Lake	1.9	.93	.92	58
Frogs in a Fix	-4.9	.93	.95	60
Life 100 Years Ago	0.6	.93	.94	60
Sprained Ankle	1.8	.93	.94	60
Trip to the Aquarium	0.96	.95	.94	60
My Confusing Sister	-1.21	.97	.97	60
Beautiful Statue	-2.9	.96	.97	60
Poison Ivy	0.97	.95	.95	60
Whale Watch	-0.76	.94	.95	60

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and testing cycles and were thus tested with a considerably higher number of students overall.

# Correlation Summary for Grade 4 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 4. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor passage scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
Insects	-1.2	.96	.96	60
Porcupine Prickles	4.4	.98	.95	60
Rodeo	5.2	.96	.95	60
Harriet Quimby	1.2	.95	.95	60
Roses	2.3	.92	.91	60
Chester's Journey	-4.9	.96	.93	60
Nellie Cashman	-4.5	.93	.92	60
She Sells Seashells	3.4	.94	.93	60
Snowy Owl	2.8	.92	.90	60
Sunburn	-3.0	.93	.91	60
Martina	1.1	.94	.92	60
Mark's Mysteries	0.9	.93	.93	60
Summer Pal	-0.58	.94	.93	60
John Deere and the Steel Plow	0.95	.95	.96	60
A Sport for Jason	1.79	.96	.95	60
Ted's Report Card	-3.48	.93	.91	60
The Beach	1.5	.94	.94	60
The Perfect Costume	2.6	.94	.93	60
Too Much Television	-4.61	.96	.96	60
Paper Birch	-0.95	.95	.94	60
Lacrosse	4.32	.93	.93	96
Leslie's Haircut	1.36	.93	.94	60
Venice	3.02	.92	.94	60
Forgetting Garrett's Birthday	2.8	.92	.93	60
A Cavity	4.6	.96	.97	59
Captain Kidd	2.2	.96	.96	60
Milk	5.3	.96	.97	60
Space Walk	2.8	.94	.93	96
Paper Cup Telephones	4.6	.96	.92	60
Grandpa's Garden	4.2	.95	.94	60

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and testing cycles and were thus tested with a considerably higher number of students overall.

# Correlation Summary for Grade 5 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 5. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor passage scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
Galeras	0.9	.98	.96	60
What's For Dinner?	0.1	.96	.95	60
Dictionary Day	-3.1	.97	.96	60
The Recorder	-2.1	.93	.93	60
Real Detective Work	-1.0	.96	.95	60
Sugar Spark	2.1	.94	.95	60
The First Nerd	-1.6	.95	.95	60
The Swan	-1.5	.92	.93	60
Sweat Baths	-3.7	.97	.96	60
Lady of Numbers	-4.1	.95	.93	60
Albino Animals	-4.1	.95	.96	60
Bill Gates	1.7	.95	.95	60
Legumes	-2.8	.93	.94	51
Catching a Comet's Tail	-3.85	.93	.93	60
Lions and Tigers and Bears	-.85	.89	.92	60
Maria Merian's Love of Bugs	3.9	.92	.94	64
Pumpkin Carving	-2.9	.95	.95	60
Frank's New Shoes	3.7	.91	.93	60
Kelly's Audition	3.5	.92	.92	60
Nanny	4.4	.86	.90	60
Billy's Broken Leg	0.4	.93	.93	60
Recipe for Hummingbird Nectar	2.5	.83	.90	60
The Necklace	4.3	.90	.91	60
A New Sport	-0.8	.96	.94	61
Blue Eyes	5.3	.92	.93	60
Watching the Clouds	4.7	.93	.92	60
Tonsils Out	3.1	.90	.91	60
Leah's New Niece	4.0	.92	.93	60
Lucretia Mott	-5.1	.91	.92	60
Beagles	5.0	.94	.93	60

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# Correlation Summary for Grade 6 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 6. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor passage scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
Real World Geometry	-4.9	.91	.91	60
A Babysitting Adventure	2.7	.95	.95	60
The Brothers Grimm	-2.9	.93	.97	40
Cha Ching	1.9	.96	.97	40
Ansel Adams	2.5	.96	.97	40
Lord of the Dance	-5.1	.97	.95	40
Chauncy Jerome	-0.9	.96	.96	40
Eating in Space	-4.6	.97	.97	60
Petra	-2.8	.96	.97	60
Rock Climbing	3.9	.94	.92	60
Julia Butterfly Hill	-3.5	.94	.94	60
Spotting a Jaguar	-2.3	.93	.95	60
All-Nighter	-1.7	.94	.95	60
The Beatles	-2.3	.95	.93	60
Rowing	0.6	.93	.92	60
Balsam Lake	-4.3	.90	.90	60
Long Distance Friend	5.6	.92	.92	60
Cryptic Notes	-5.6	.91	.90	60
Judy Garland	-5.4	.89	.85	64
Tim's Date	-3.48	.90	.89	60
My Tree	1.5	.89	.88	60
Tips to Care for the Earth	2.58	.89	.88	119
Hubble Telescope	.3	.91	.94	60
Bad Day	4.6	.93	.95	67
Gymnastics Team	-3.3	.94	.96	67
Super Bowl	.9	.96	.96	60
Sitting the Bench	6.0	.94	.96	60
Korczak's Crazy Horse Monument	-5	.94	.92	60
Moonwalk	-.5	.95	.96	60
Camels in the Army	6.0	.94	.92	49

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and testing cycles and were thus tested with a considerably higher number of students overall.

# Correlation Summary for Grade 7 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 7. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
Arctic Expedition	2.8	.94	.95	61
Life at Court	-3.1	.95	.95	60
Babysitting My Cousins	4.2	.92	.92	60
The Peace Corps	-1.4	.97	.96	60
Mr. Humdrum	0.2	.96	.96	60
Sylvan Lake	1.4	.95	.95	60
Bird Watching	5.6	.91	.91	60
Elvis	-5.1	.92	.93	60
Career Day	5.6	.90	.91	60
Harry Truman	-2.67	.93	.95	60
Kind Strangers	-4.5	.96	.96	60
White-Water Rafting	5.8	.96	.95	60
History of the Olympics	-5.0	.92	.95	59
Too Much Baking	-2.4	.97	.97	59
Social Security	-3.9	.95	.96	60
Ears Pierced	-2.0	.94	.94	59
Hubert Humphrey	3.5	.90	.93	60
The Marathon	-0.3	.93	.93	53
Santo Domingo	-2.0	.91	.92	53
A Lobster Dilemma	-1.0	.94	.94	53
Heart Attack	0.6	.95	.94	60
Rainy Day in New York	.8	.95	.95	60
Mythology Test	-3.1	.94	.94	60
A Family Affair	0.8	.90	.90	57
Jamestown	-5.2	.90	.90	57
Soudan Mine	-5.7	.94	.95	60
The United Nations	-1.3	.94	.95	60
Andrew Jackson	2.4	.87	.88	40
Frederick Douglass	-3.2	.95	.96	57
Football Tryouts	1.5	.94	.94	57

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and testing cycles and were thus tested with a considerably higher number of students overall.

# Correlation Summary for Grade 8 Progress Monitoring Passages

The table below provides details on all 30 passages for grade 8. Correlations with the benchmark passages and other monitoring passages were consistently at or above .90. The median difference between the benchmark scores and the Reading Fluency Progress Monitor scores was less than six words correct per minute.

Passage Title	Difficulty	Correlation with Benchmark	Median Correlation with Other Monitoring Passages	Number of Students Tested*
The History of Photography	-3.7	.95	.94	60
The Annual Food Drive	-3.6	.96	.95	63
The Cliff Dwellings of Mesa Verde	-1.7	.90	.94	59
Grover Cleveland	2.9	.88	.94	59
Hoover Dam	4.8	.95	.95	60
Nelson Mandela	-4.7	.91	.92	62
Sears Tower	-0.8	.96	.92	62
Sonnets	-2.1	.95	.95	60
NATO	4.7	.95	.93	60
Job Interview	5.2	.91	.92	60
Botany	-0.4	.96	.97	60
Computers	-0.9	.96	.95	60
Yoga	-3.18	.93	.94	60
Artificial Intelligence	-2.35	.91	.93	60
Interstate Highway System	-3.07	.92	.92	60
Flight Lessons	-5.5	.90	.91	60
Super Bacteria	4.22	.95	.95	60
Pneumonia	0.4	.96	.96	60
Dust Bowl	1.8	.98	.97	60
The Caucus	0.9	.94	.96	60
Mae Jemison	1.9	.97	.97	60
Island of Exile	-3.4	.95	.95	60
Basketball	-2.3	.96	.95	60
Highland Theater	2.3	.98	.96	59
Fitness Fanatic	-0.1	.97	.96	60
Dissection	0.5	.91	.94	60
The History of Heels	-3.2	.96	.96	60
Graduation	-.5	.94	.97	60
My Trip to the Louvre	4.1	.92	.91	60
Carl Sagan	-1.5	.91	.91	60

\*Number of Students Tested refers to the number of students tested on the version of the passage as published in the Reading Fluency Progress Monitor. Most passages went through multiple revisions and testing cycles and were thus tested with a considerably higher number of students overall.