HINGHAM PUBLIC SCHOOLS

MCAS ASSESSMENT & ACCOUNTABILITY RESULTS SPRING 2019

November 18, 2019
Dr. James M. LaBillois
Assistant Superintendent of Schools

PRESENTATION AGENDA

- **Part I:** District Accountability Information
- **Part II:** Results of 2019 MCAS Performance: All Students; Benchmark Comparisons
- **Part III:** Results of 2019 MCAS Performance: Special Education & High Needs; Benchmark Comparisons
- **Part IV:** Next Steps

Part I: District Accountability Information

HPS 2019 ACCOUNTABILITY RESULTS

School	Progress Toward Targets
Hingham High School	80% Meeting or Exceeding Targets
Hingham Middle School	61% Substantial Progress Toward Targets
East Elementary School	92% Meeting or Exceeding Targets
Foster Elementary School*	91% Meeting or Exceeding Targets
Plymouth River Elementary School	91% Meeting or Exceeding Targets
South Elementary School	93% Meeting or Exceeding Targets

* 2019 School of Recognition – High Achievement – High Growth

HPS 2019 ACCOUNTABILITY RESULTS: PERCENTILES

School	Percentile
Hingham High School	98th
Hingham Middle School	85th
East Elementary School	94th
Foster Elementary School	99th
Plymouth River Elementary School	93rd
South Elementary School	99th

Part II: Results of 2019 MCAS Performance: All Students; Benchmark Comparisons

2019 Assessments

Schools	Assessment
Hingham High School	
• Grade 9 Biology	Legacy MCAS
• Grade 10 ELA & Math	Next-Generation MCAS
Hingham Middle School	
• Grade 6 ELA & Math	Next-Generation MCAS
• Grade 7 ELA & Math	Next-Generation MCAS
• Grade 8 ELA & Math	Next-Generation MCAS
• Grade 8 STE	Hybrid – Legacy/Next-Generation MCAS
Elementary Schools	
• Grade 3 ELA & Math	Next-Generation MCAS
• Grade 4 ELA & Math	Next-Generation MCAS
• Grade 5 ELA & Math	Next-Generation MCAS
• Grade 5 STE	Hybrid – Legacy/Next-Generation MCAS

MCAS RESULTS
Meeting/Exceeding Expectations 2019

Grades 3, 4, & 5	Hingham	State
Grade 3 Reading	80	56
Grade 3 Math	71	49
Grade 4 ELA	78	52
Grade 4 Math	74	50
Grade 5 ELA	80	52
Grade 5 Math	79	48
Grade 5 STE*	81	49

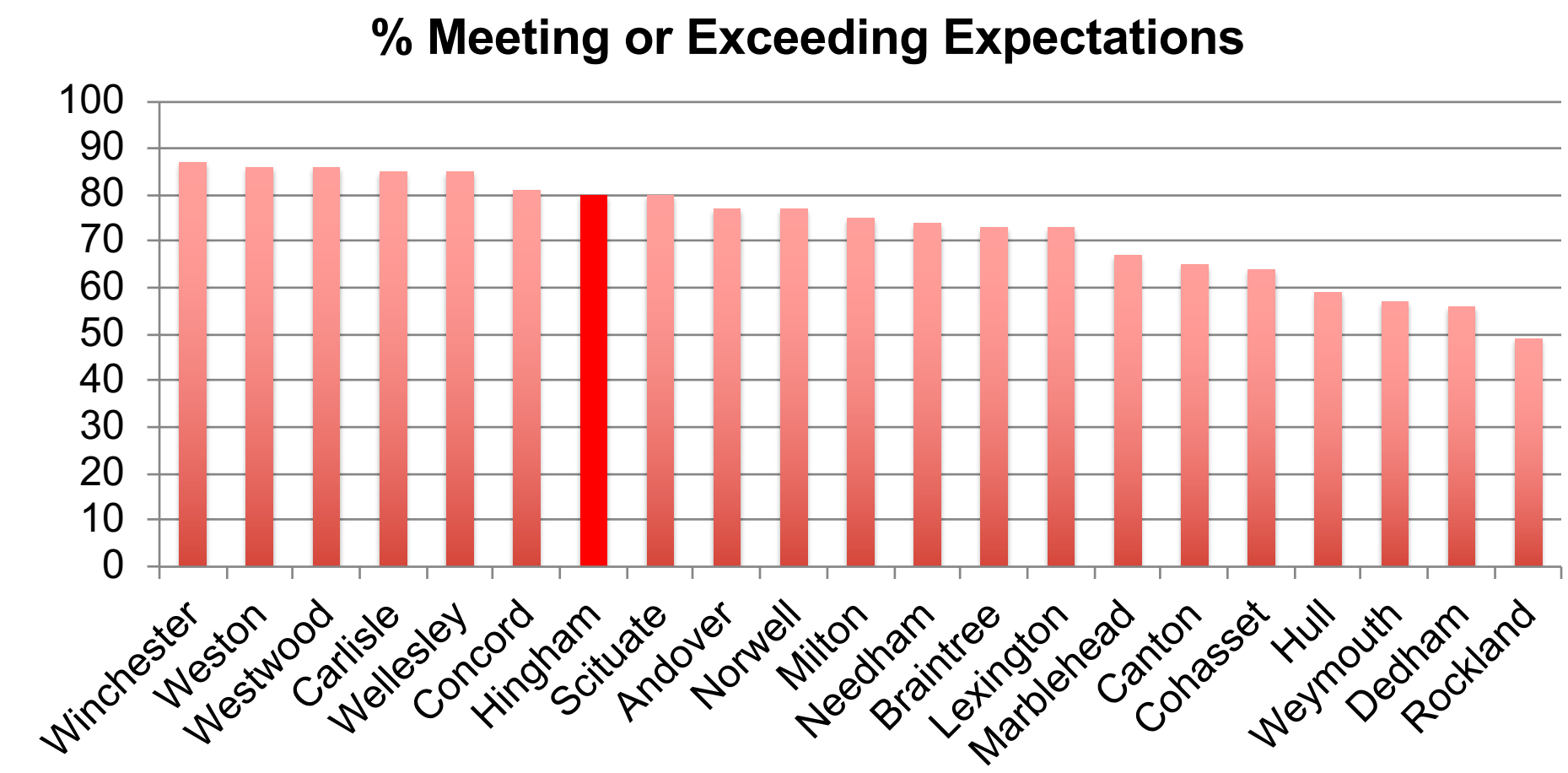
Grades 6, 7, & 8	Hingham	State
Grade 6 ELA	90	53
Grade 6 Math	85	52
Grade 7 ELA	90	48
Grade 7 Math	76	48
Grade 8 ELA	83	52
Grade 8 Math	64	46
Grade 8 STE*	76	46

All Grades K-8	Hingham	State
ELA	83	52
Math	74	49

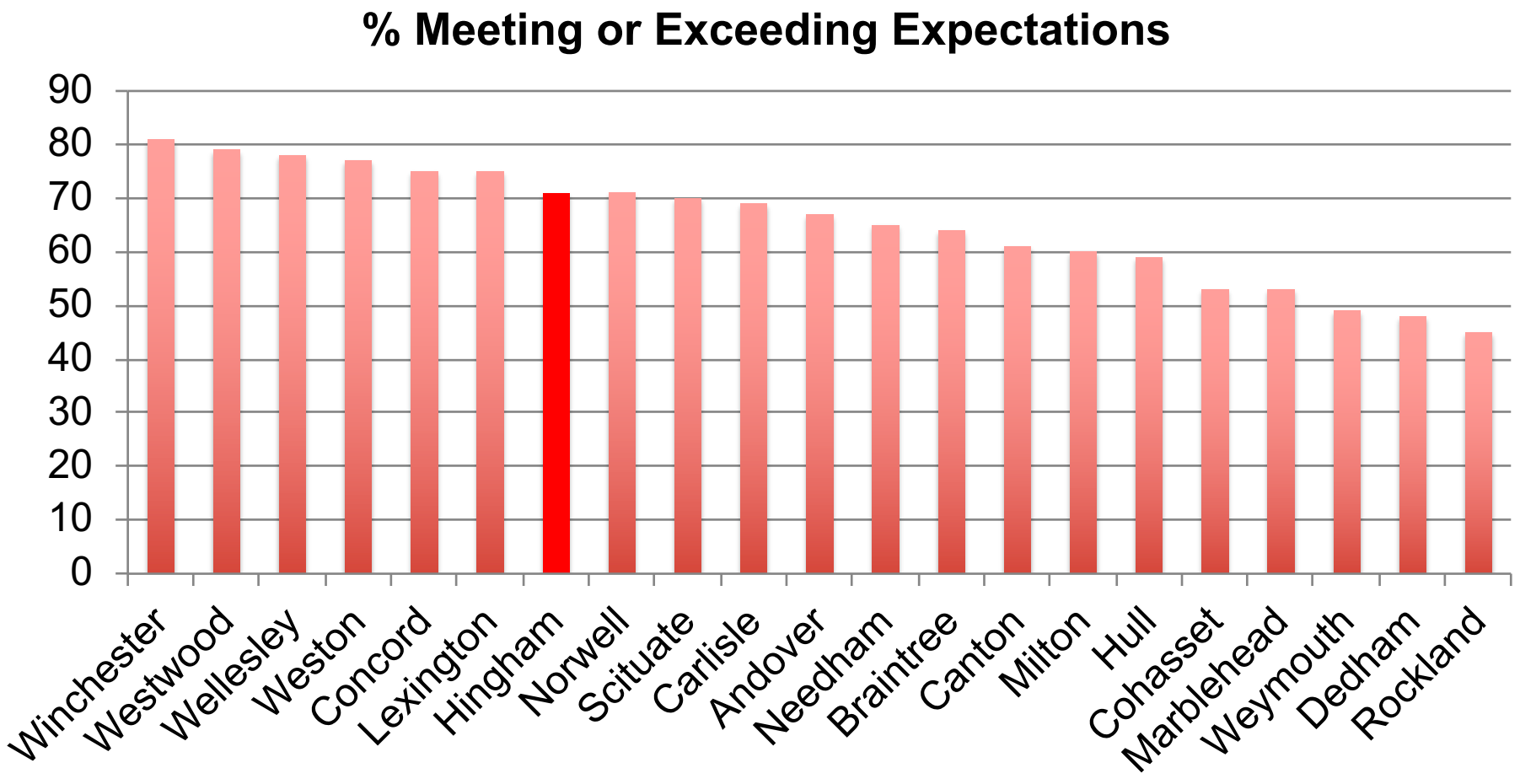
Grade 10	Hingham	State
Grade 10 ELA	89	61
Grade 10 Math	83	59
Grade 10 Science*	94	74

*** Legacy MCAS - % Proficient or Advanced**

Benchmark Comparison: Grade 3 Reading



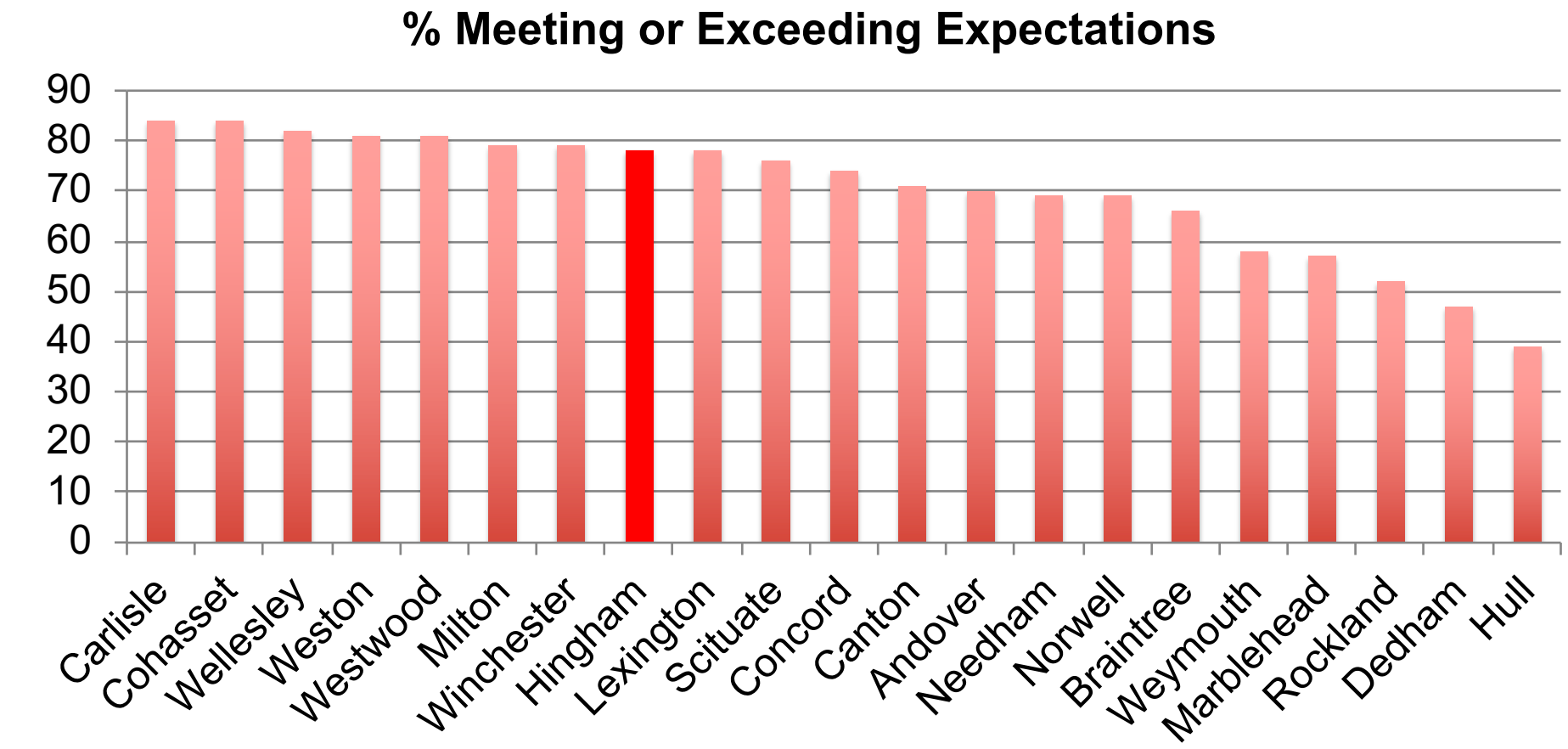
Benchmark Comparison: Grade 3 Math



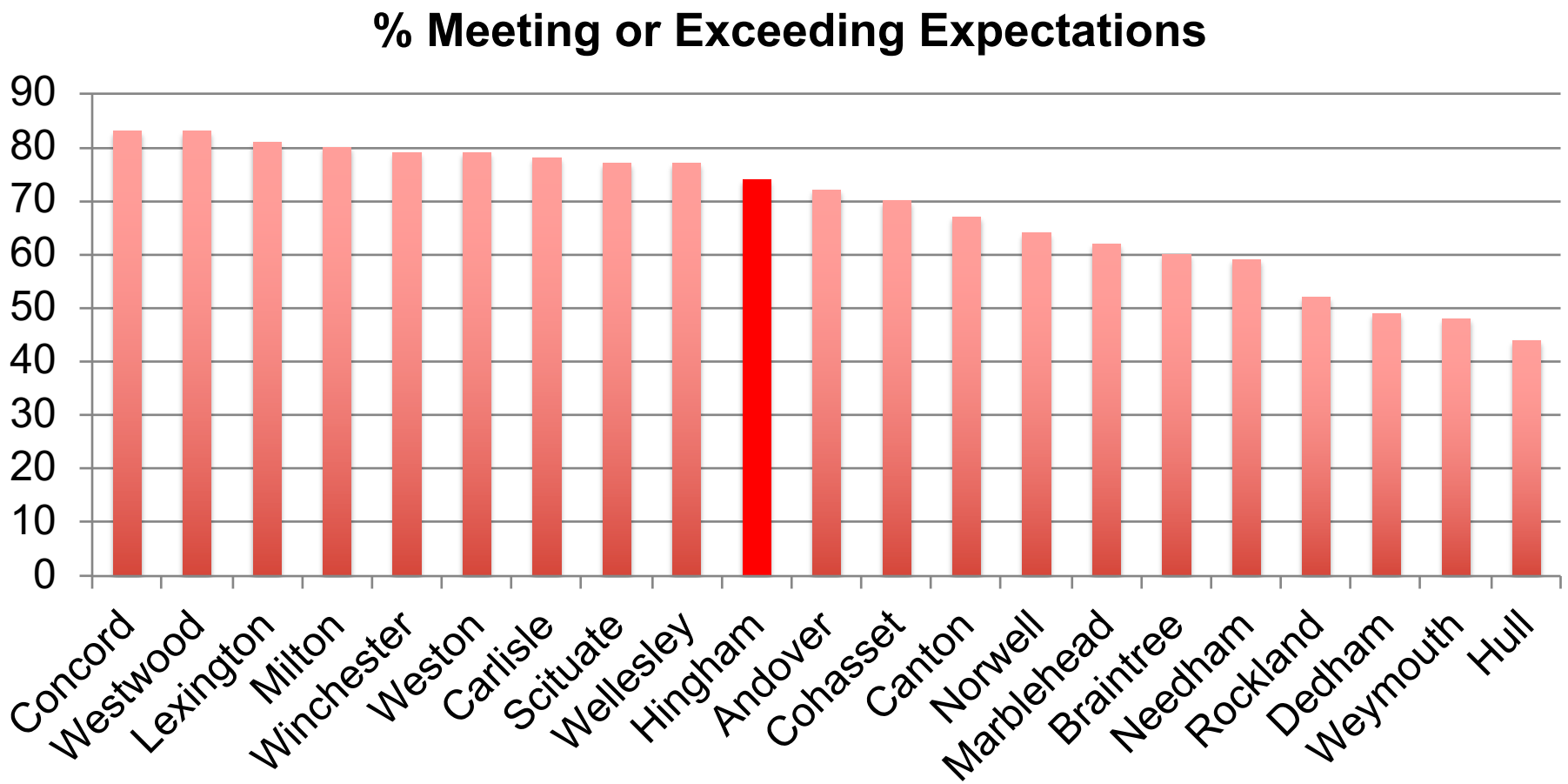
Grade 3: Performance Summary

Subject	Summary
ELA	• 79% of Hingham Grade 3 ELA students met or exceeded expectations (an increase of 3% from last year) • Hingham Grade 3 ELA students performed 10% higher than the state average in ALL content strands: language, reading, and writing • Performed ABOVE the state average on all 26 test items
Math	• 95% of Grade 3 math students earned a passing score on mathematics MCAS; 71% meeting expectations or higher • Performed above the state average on all but 1 test question. • Hingham Grade 3 students performed between 11-14 points above the state average for the content strands: *Geometry, Measurement & Data, Number and Operations in Base Ten, Number and Operations - Fractions, and Operations & Algebraic Thinking.*

Benchmark Comparison: Grade 4 ELA



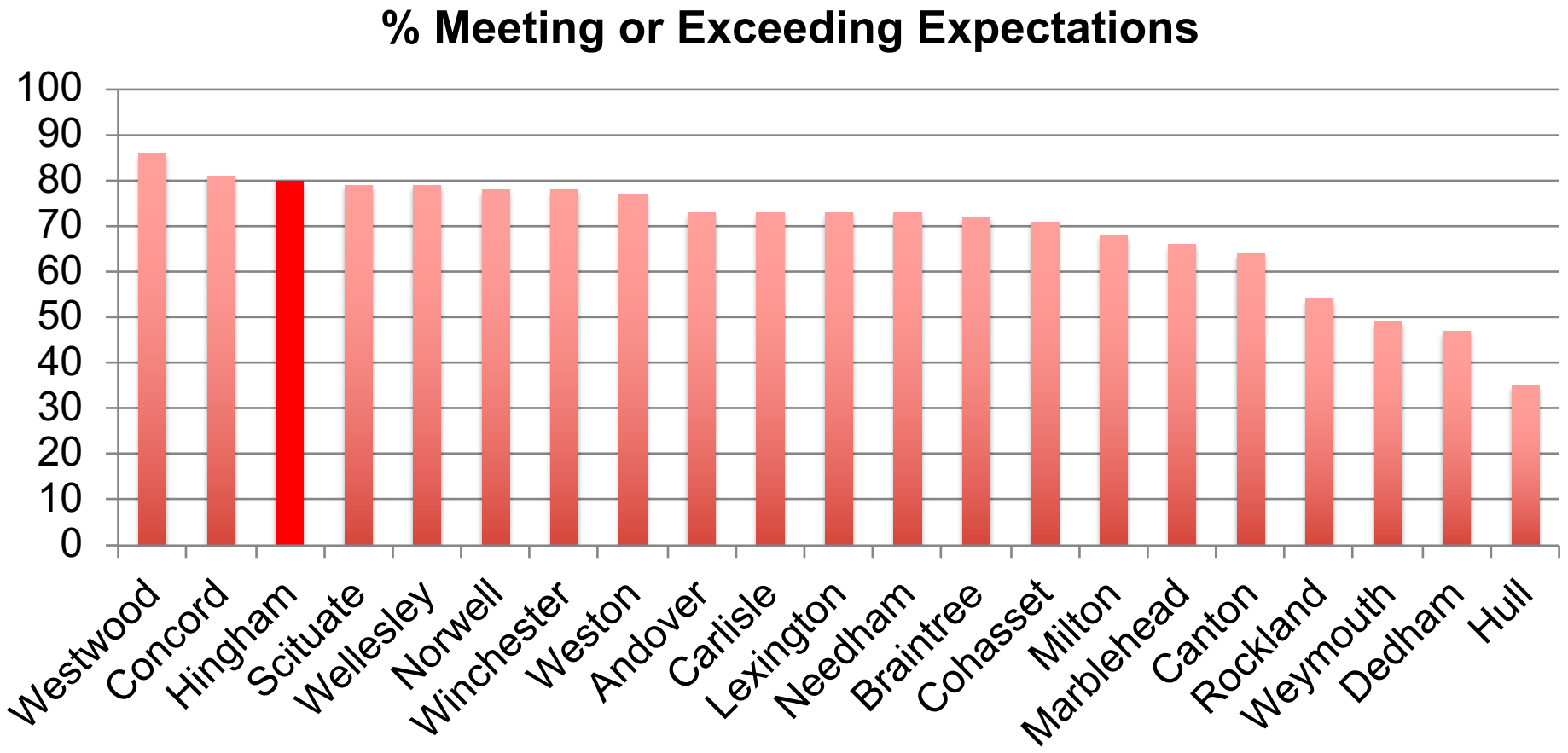
Benchmark Comparison: Grade 4 Math



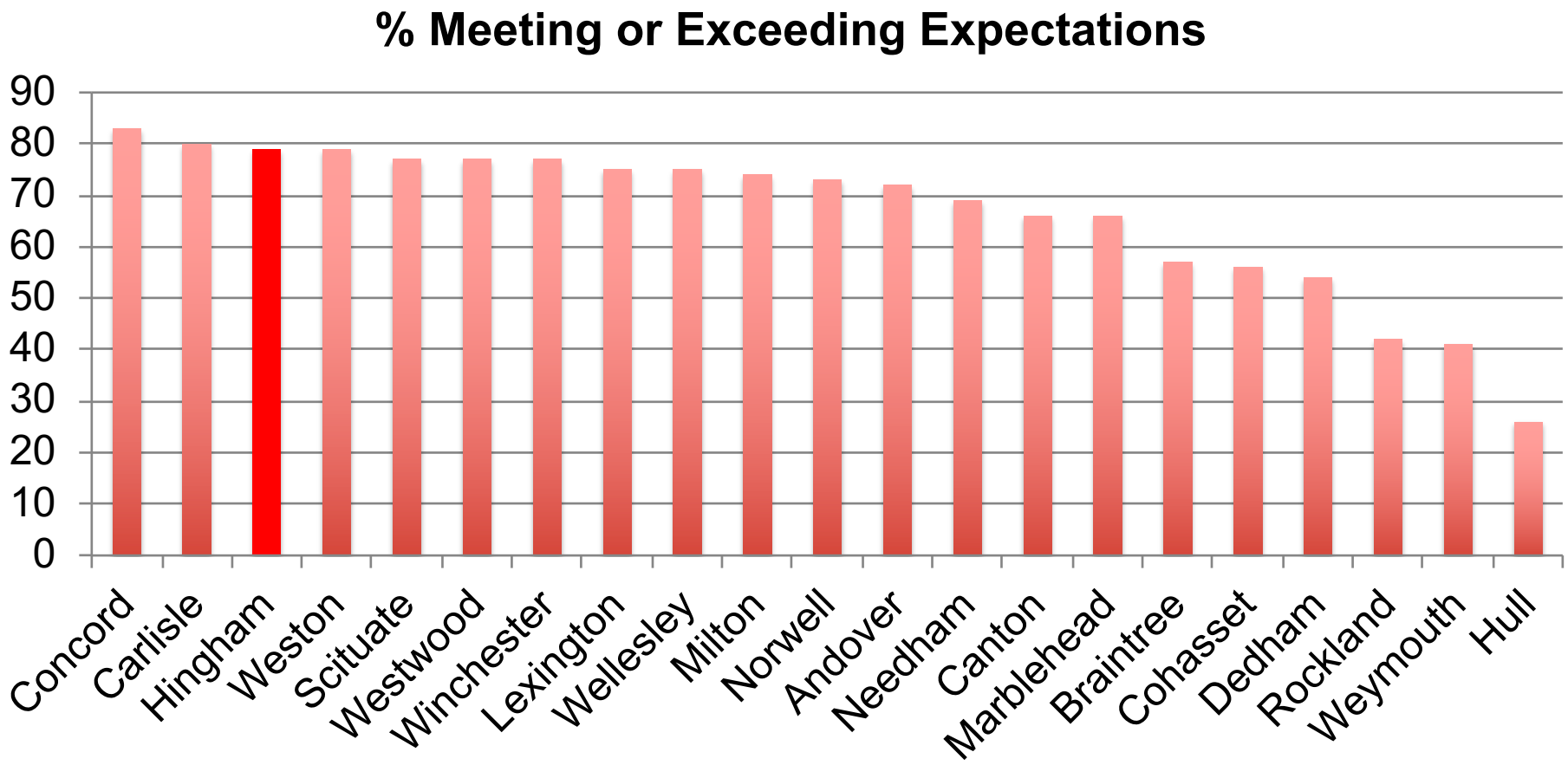
Grade 4: Performance Summary

Subject	Summary
ELA	• 78% of Hingham Grade 4 ELA students met or exceeded expectations (an increase of 2% from last year) • Performed 12% higher than the state average in ALL content strands: language, reading, and writing • Performed ABOVE the state average on 25 of the 26 test items
Math	• 98% earned a passing score; 74% earning a score of meeting expectations or higher. • Performed above the state average on all 40 test questions • Performed between 10-15 points above the state average for all content strands: *Geometry, Measurement & Data, Number and Operations in Base Ten, Number and Operations - Fractions, and Operations & Algebraic Thinking*

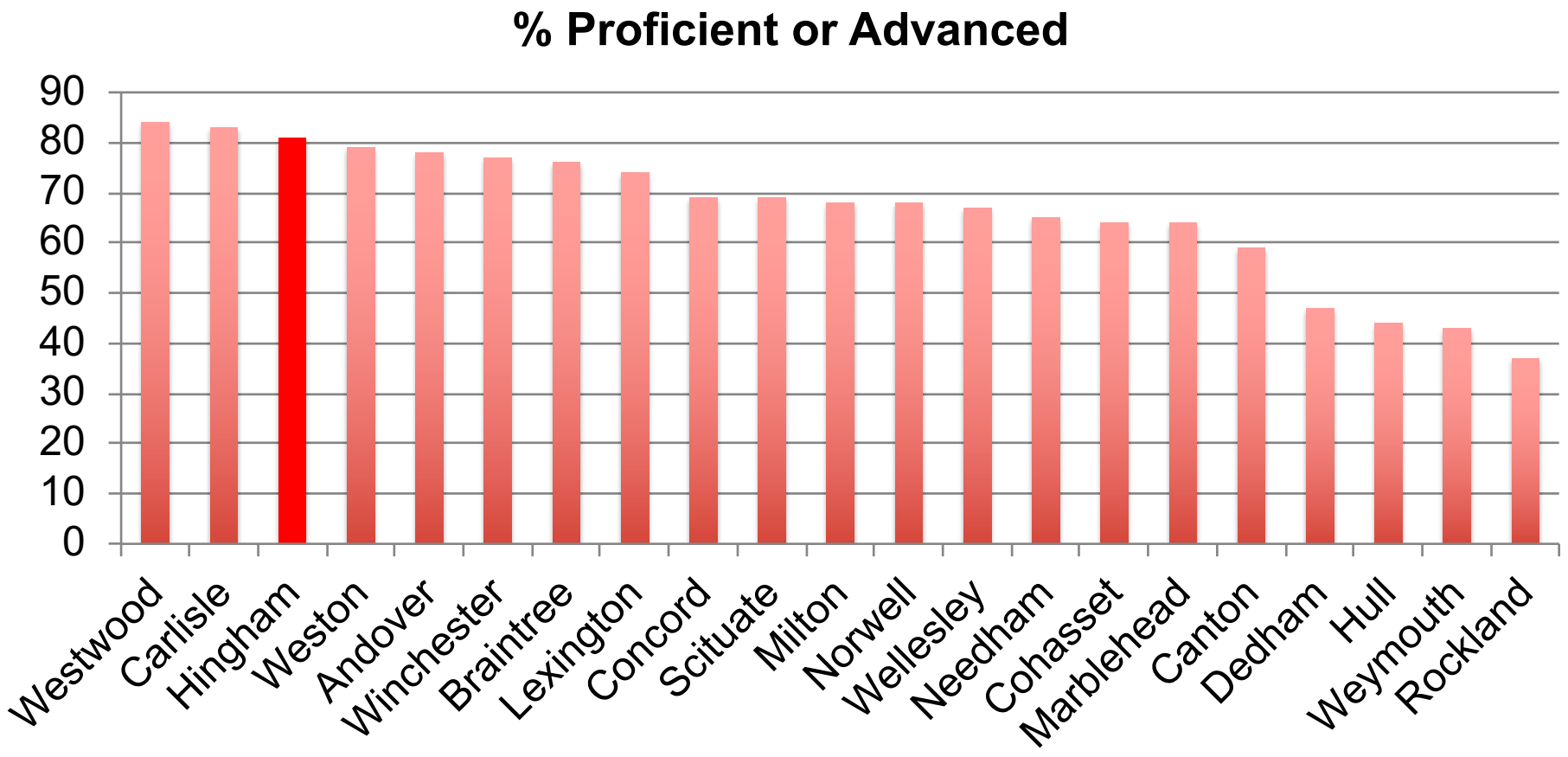
Benchmark Comparison: Grade 5 ELA



Benchmark Comparison: Grade 5 Math



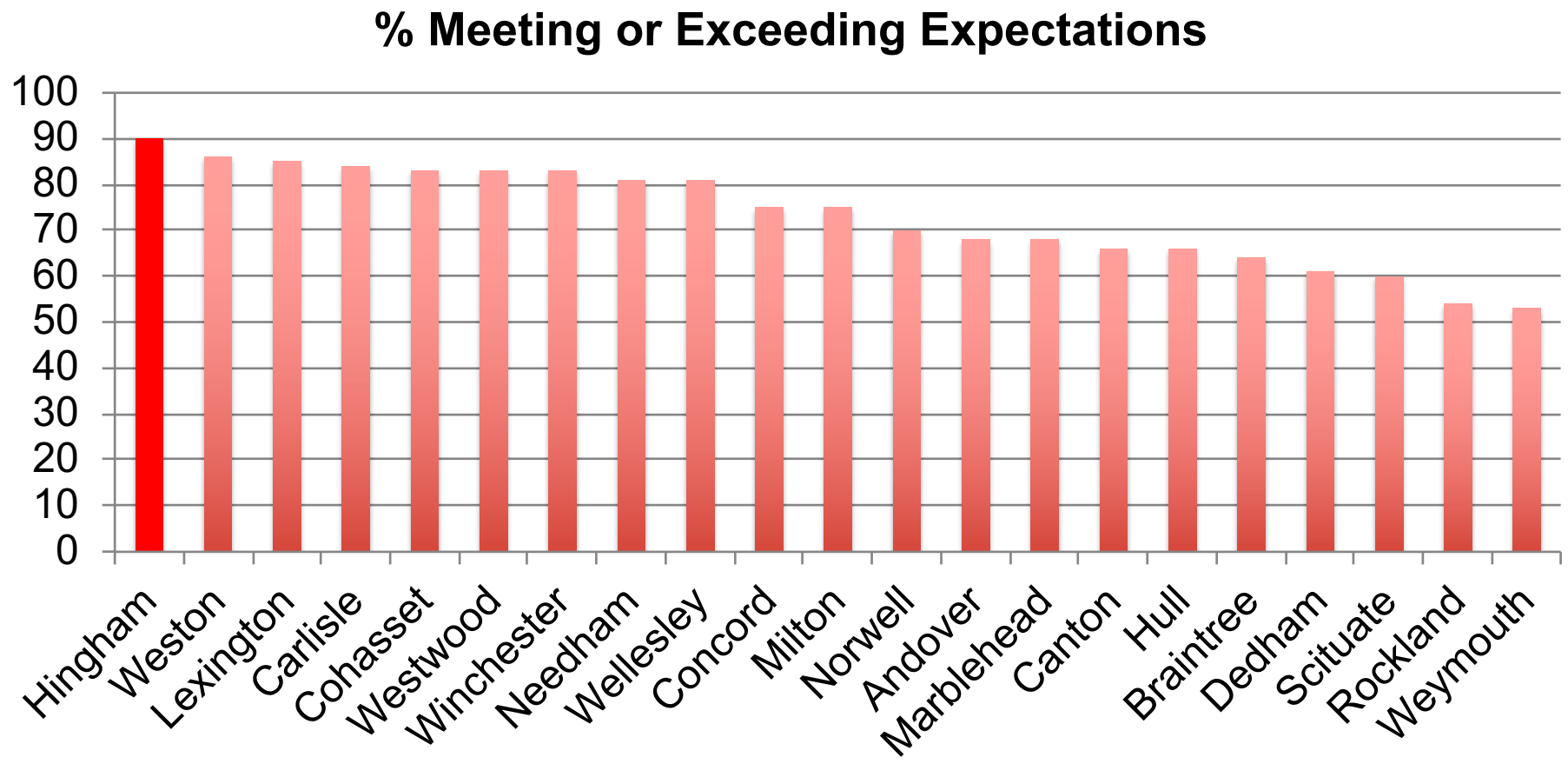
Benchmark Comparison: Grade 5 STE



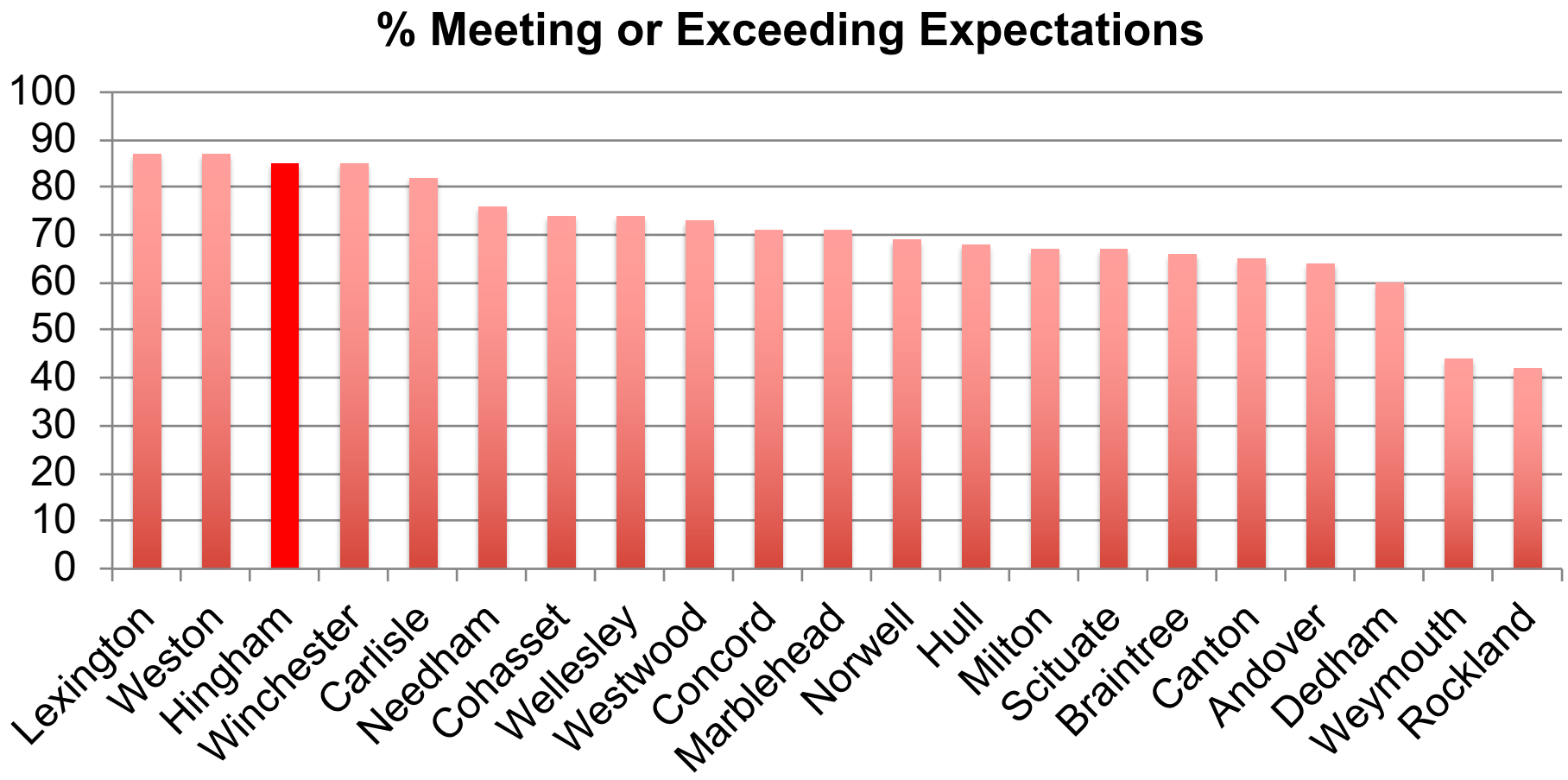
Grade 5: Performance Summary

Subject	Summary
ELA	• 80% of Hingham Grade 5 ELA students met or exceeded expectations on the exam • Performed 12% higher than the state average in ALL content strands: language, reading, and writing • Performed ABOVE the state average on all 28 test items
Math	• 98% earned a passing score; 78% of students earning a score of meeting expectations or higher. • Performed above the state average on 39 of 40 test questions • Performed between 10-21 points above the state average for all content strands: *Geometry, Measurement & Data, Number and Operations in Base Ten, Number and Operations - Fractions, and Operations & Algebraic Thinking*
Science	• 98% earned a passing score; 82% of students earning a score of proficient or higher. • Performed at or above the state average on all 42 test questions

Benchmark Comparison: Grade 6 ELA



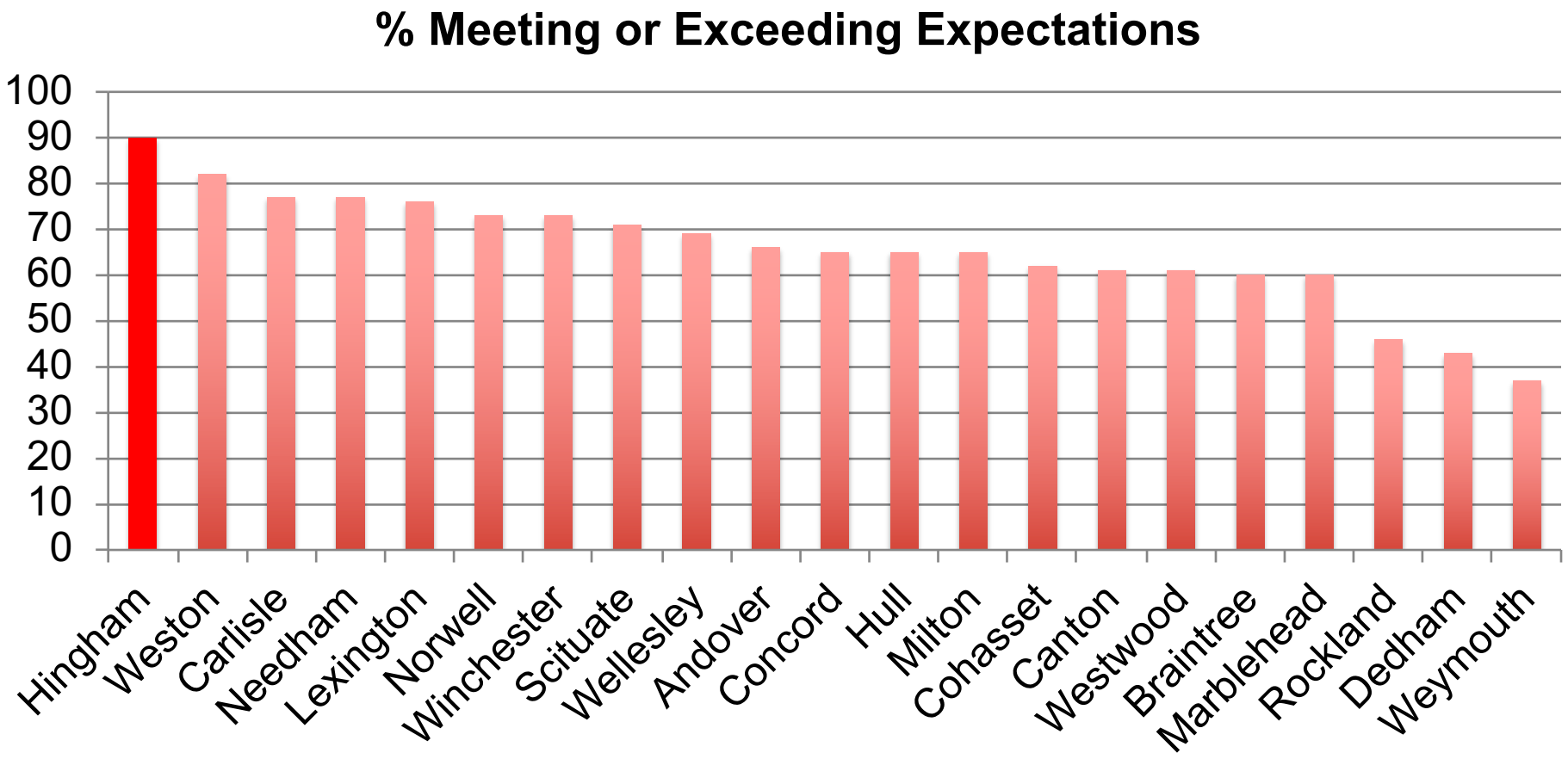
Benchmark Comparison: Grade 6 Math



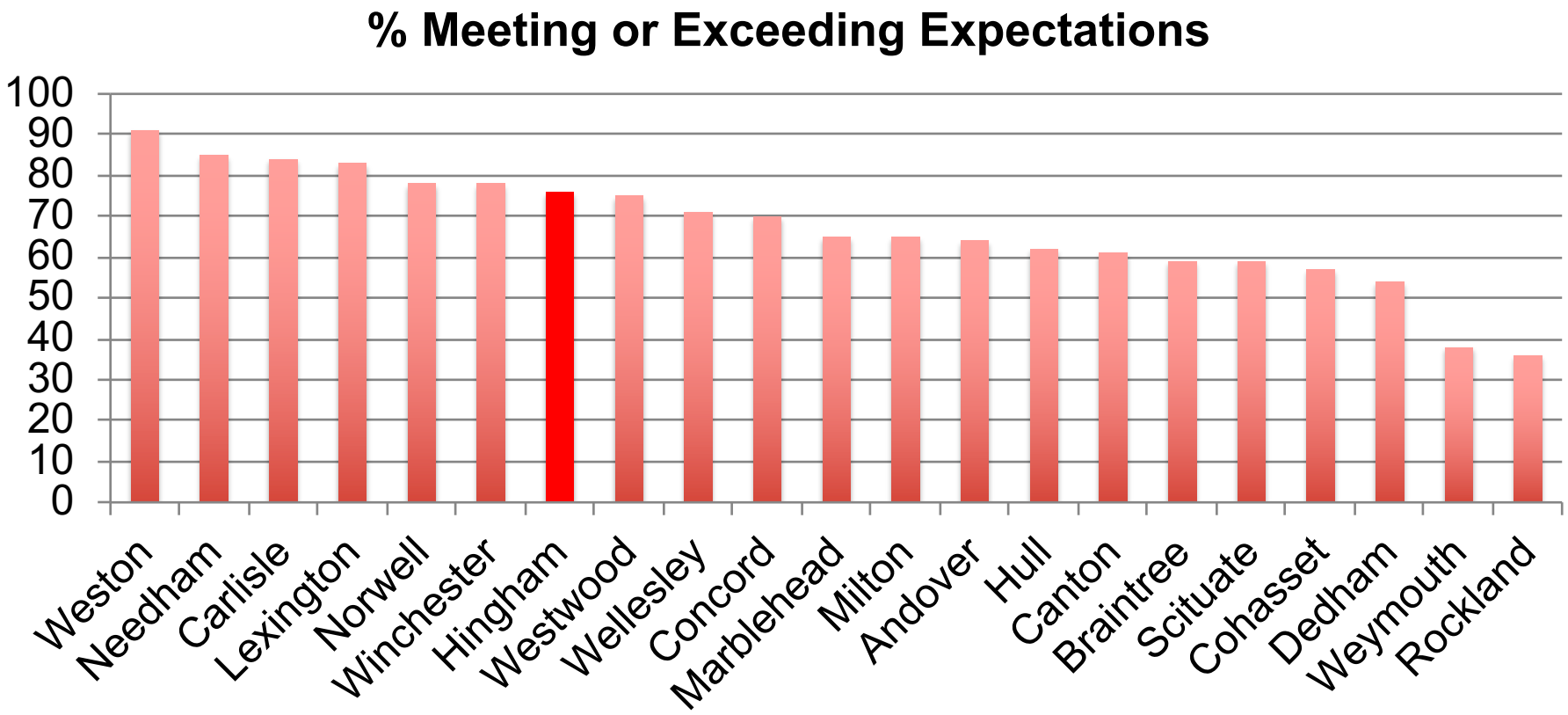
Grade 6: Performance Summary

Subject	Summary
ELA	• 90% met or exceeded expectations (an increase of 4% from last year) • Performed 20% higher than the state average in ALL content strands: language, reading, and writing • Performed ABOVE the state average on all 27 test items
Math	• 98% earned a passing score; 83% meeting expectations or higher. • Performed above the state average on all 40 test questions. • Performed between 13-33 points above the state average for content strands: *Geometry, Expressions and Equations, Ratios and Proportional Relationships, Statistics and Probability, The Number System*

Benchmark Comparison: Grade 7 ELA



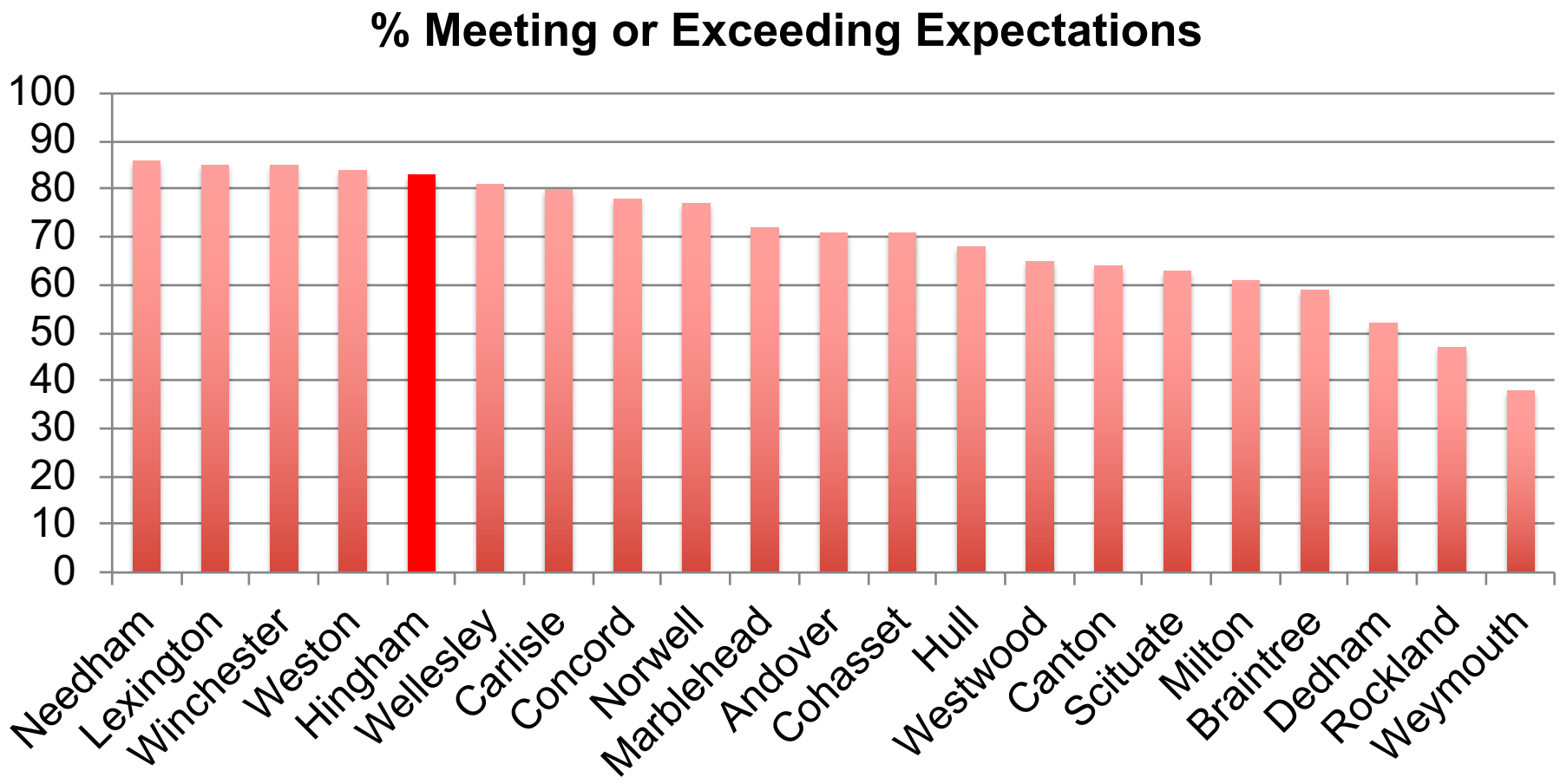
Benchmark Comparison: Grade 7 Math



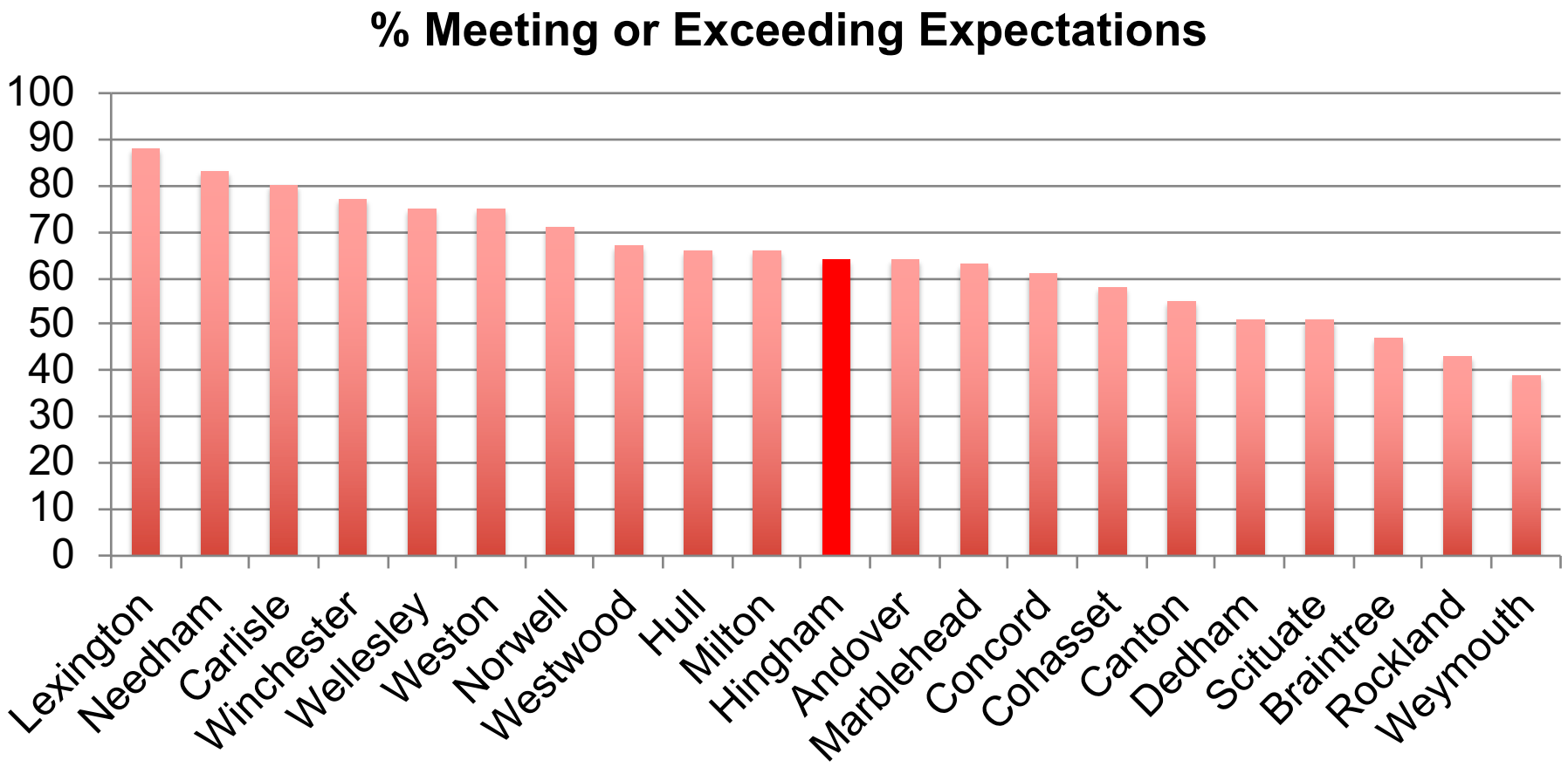
Grade 7: Performance Summary

Subject	Summary
ELA	• 89% met or exceeded expectations (increase of 17% over last year) • Performed 19% higher than the state average in ALL content strands: language, reading, and writing • Performed ABOVE the state average on all 27 test items
Math	• 99% earned a passing score; 65% meeting expectations or higher. • Performed at or above the state average on 38 of 40 test questions. • Performed between 9-15 points above the state average for content strands: *Expressions and Equations, Ratios and Proportional Relationships, Statistics and Probability, The Number System, and Geometry*

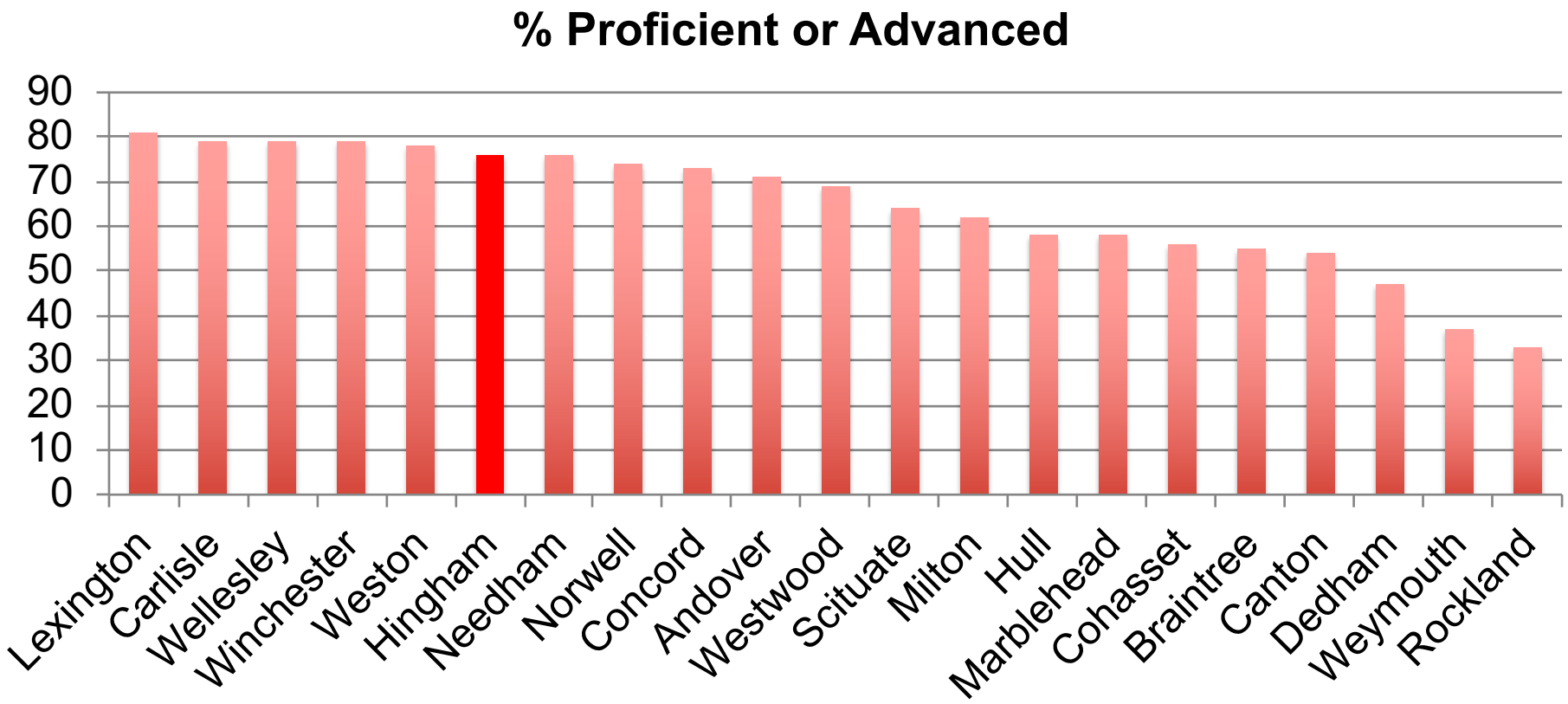
Benchmark Comparison: Grade 8 ELA



Benchmark Comparison: Grade 8 Math



Benchmark Comparison: Grade 8 STE



Grade 8: Performance Summary

Subject	Summary
ELA	• 83% met or exceeded expectations (an increase of 5% from last year) • Performed 14% higher than the state average in ALL content strands: language, reading, and writing • Performed ABOVE the state average on all 27 test items
Math	• 97% earned a passing score; 64% of students earning a score of meeting expectations or higher • Performed at or above the state average on 30 of 40 test questions • Performed between 7-11 points above the state average for content strands: *Geometry, Expressions and Equations, Ratios and Proportional Relationships, Statistics and Probability, The Number System*
Science	• 99% earned a passing score; 76% of students earning a score of proficient or higher. • Performed above the state average on 40 of 42 test questions. • Performed on average 10 points above performance of peers across the state

Part III: Results of 2019 MCAS Performance: Special Education & High Needs; Benchmark Comparisons

High Needs Subgroup

- An unduplicated count of all students in a school or district belonging to at least one of the following individual subgroups: ***students with disabilities***, ***English language learners (ELL) and former ELL students***, or ***economically disadvantaged***.

MCAS RESULTS: High Needs Meeting/Exceeding Expectations 2019

Grades 3, 4, & 5	Hingham	State
Grade 3 Reading	45	39
Grade 3 Math	38	32
Grade 4 ELA	41	33
Grade 4 Math	38	32
Grade 5 ELA	39	34
Grade 5 Math	45	30
Grade 5 STE*	50	30

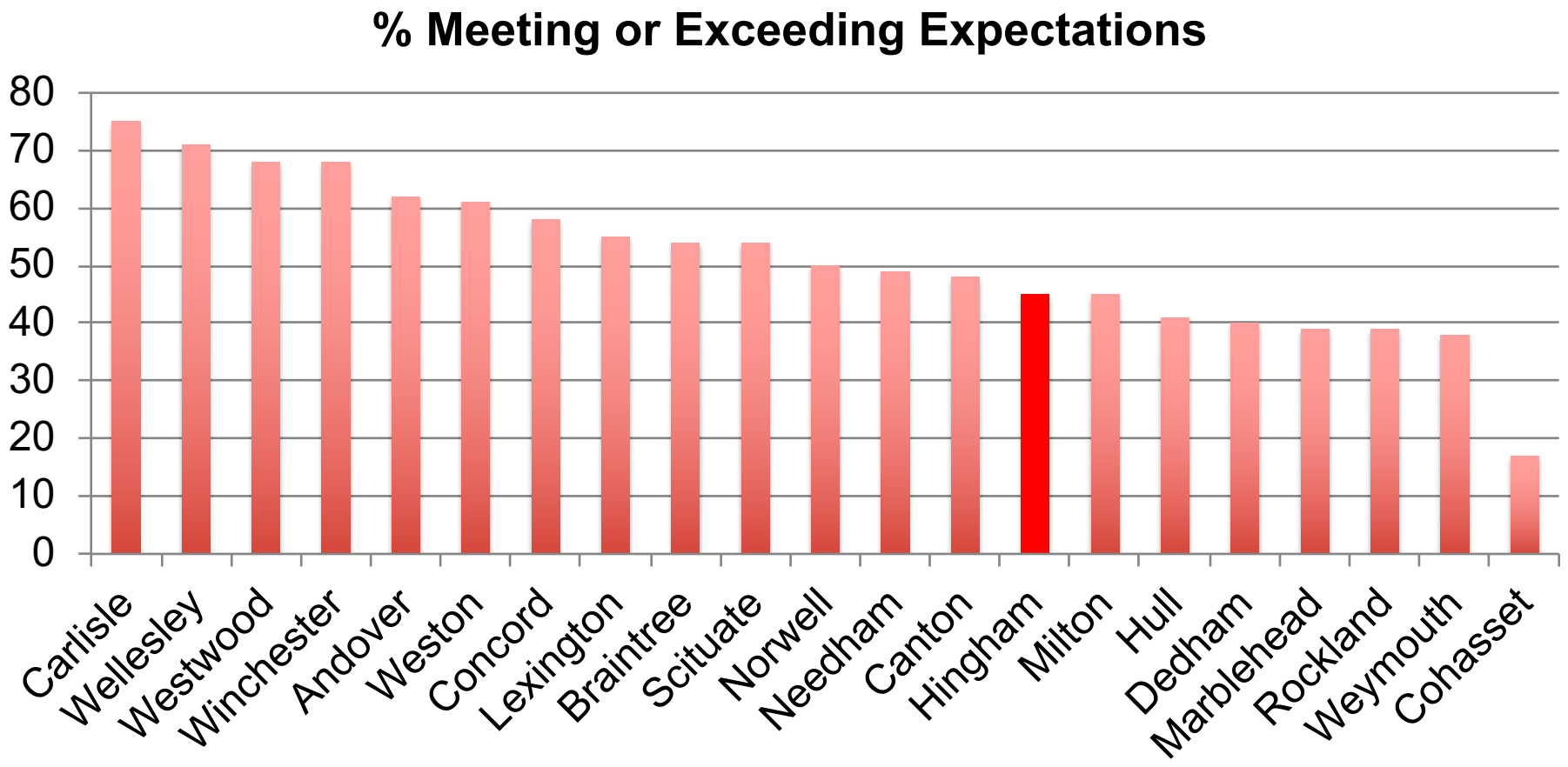
Grades 6, 7, & 8	Hingham	State
Grade 6 ELA	67	33
Grade 6 Math	54	31
Grade 7 ELA	62	27
Grade 7 Math	43	26
Grade 8 ELA	44	28
Grade 8 Math	31	24
Grade 8 STE*	44	24

All Grades 3-8	Hingham	State
ELA	48	33
Math	41	29

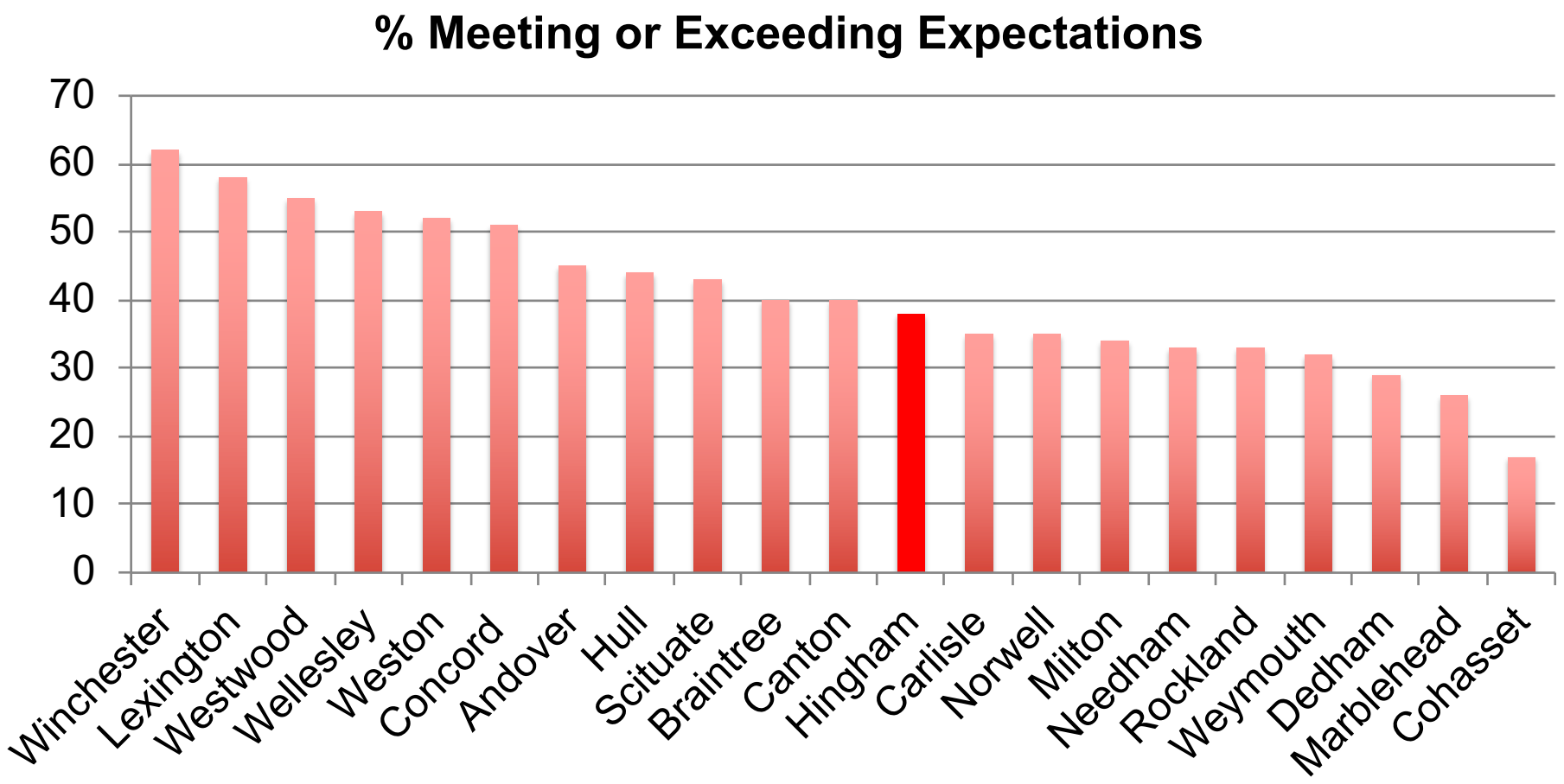
Grade 10	Hingham	State
Grade 10 ELA	53	36
Grade 10 Math	34	33
Grade 10 Science*	70	52

*** Legacy MCAS - % Proficient or Advanced**

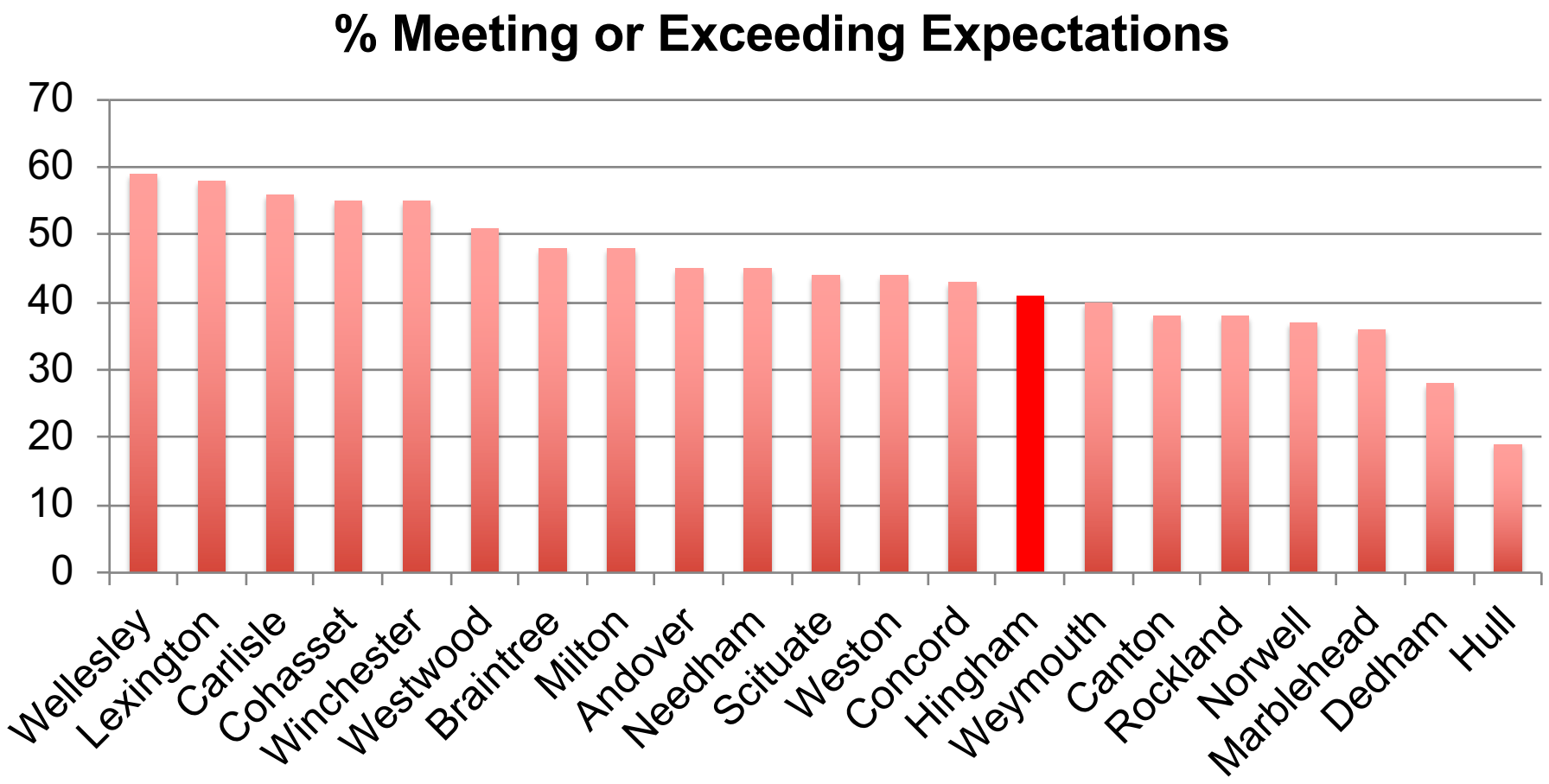
High Needs: Grade 3 Reading



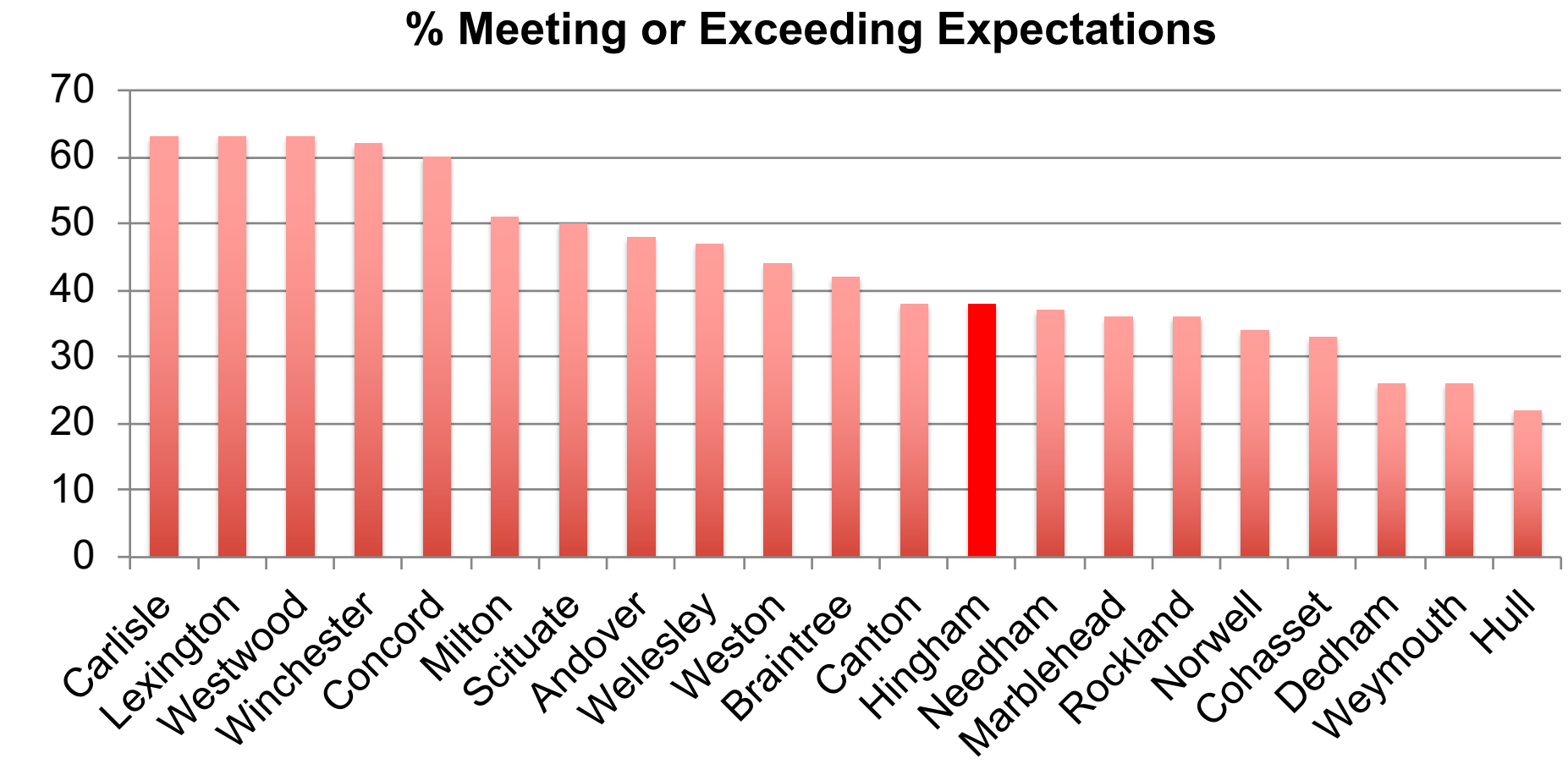
High Needs: Grade 3 Math



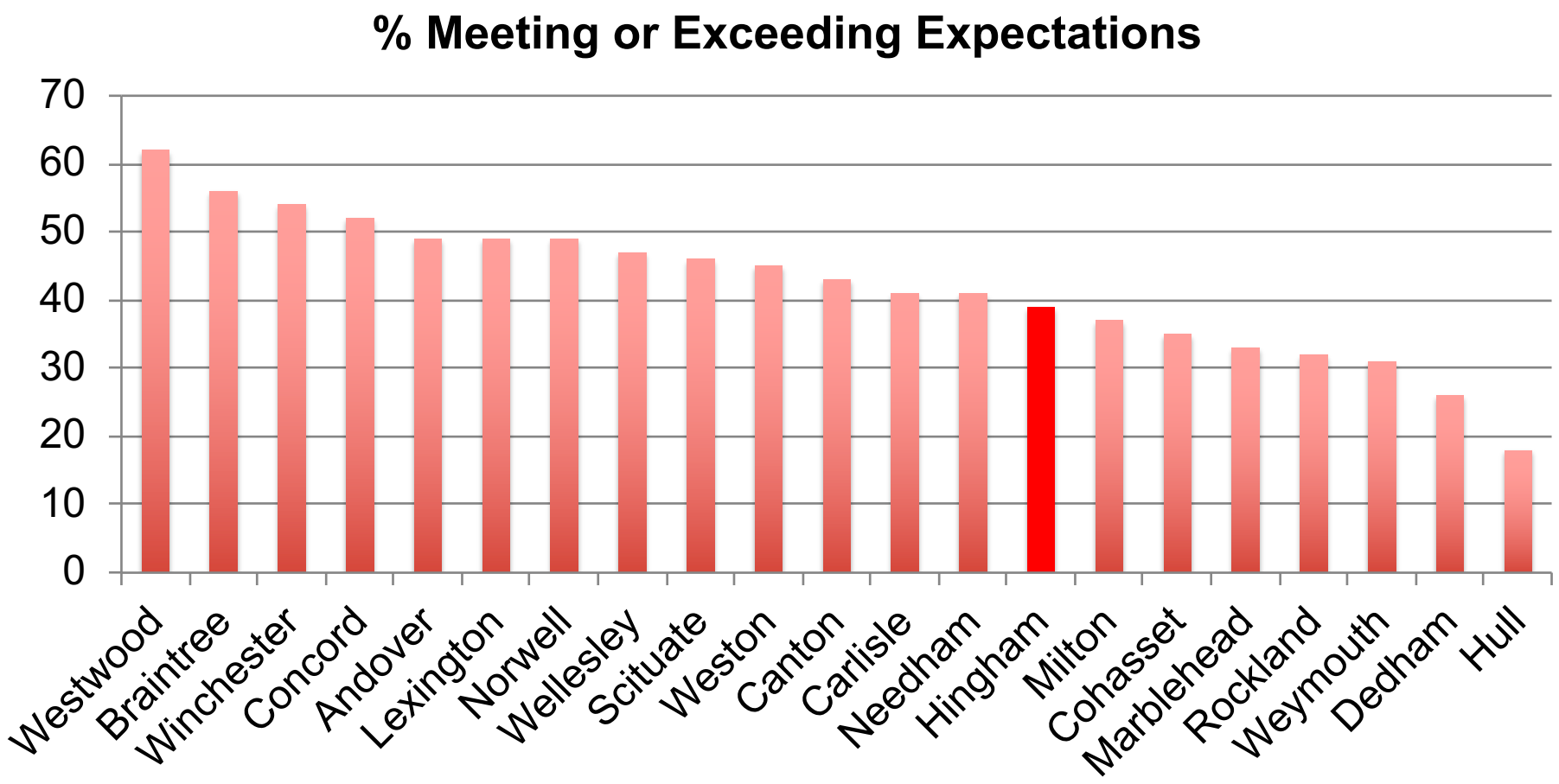
High Needs: Grade 4 ELA



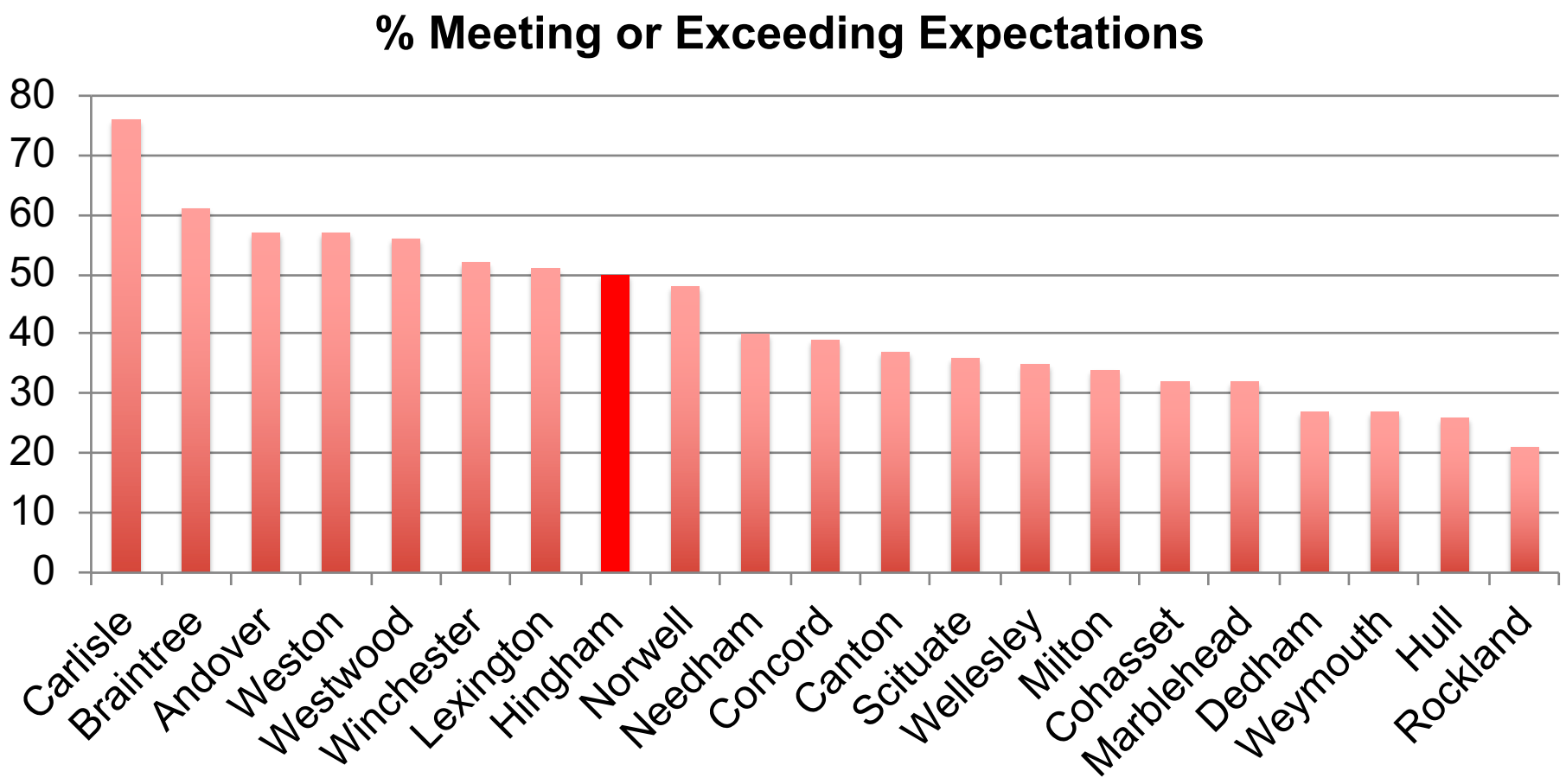
High Needs: Grade 4 Math



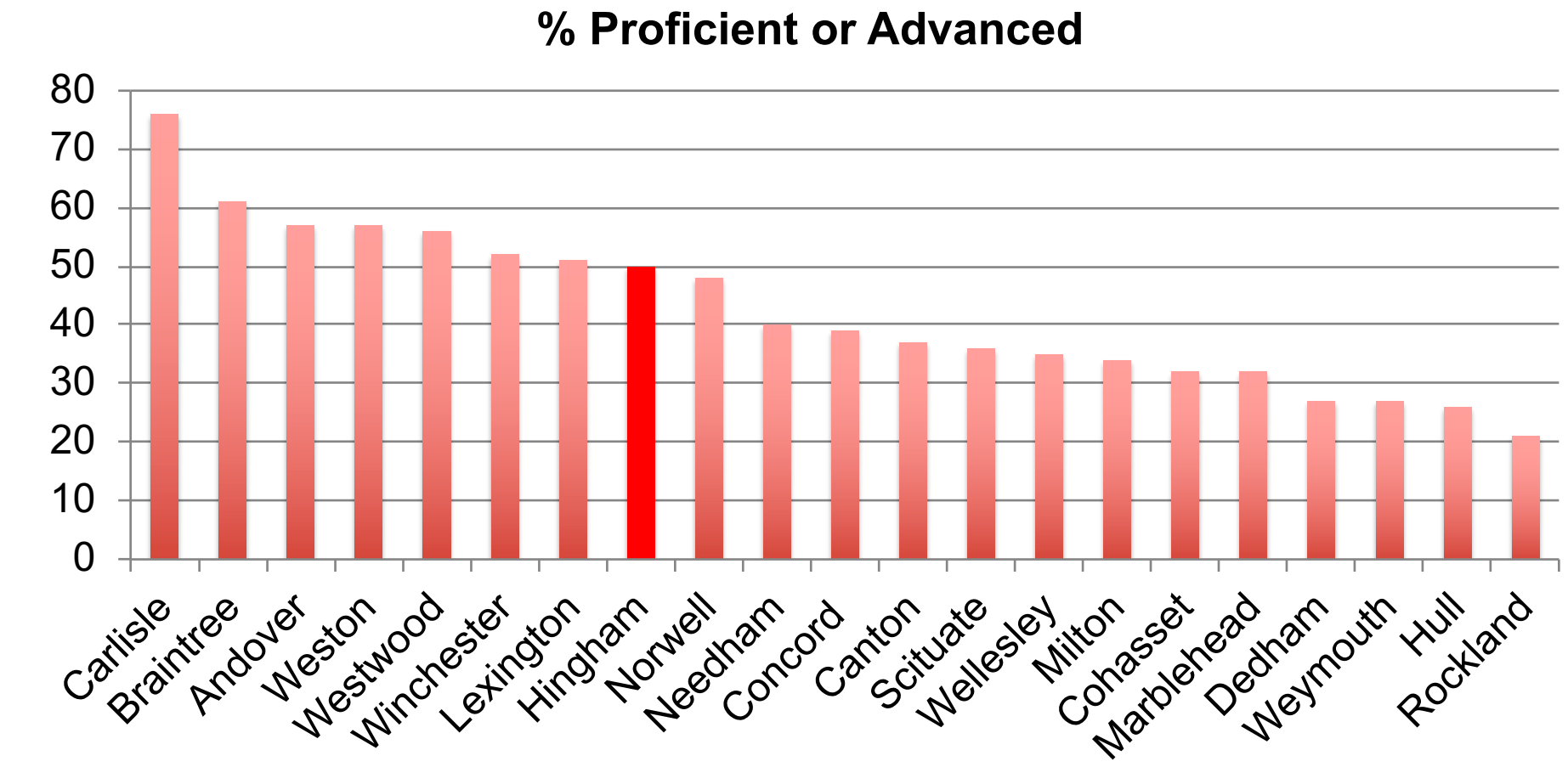
High Needs: Grade 5 ELA



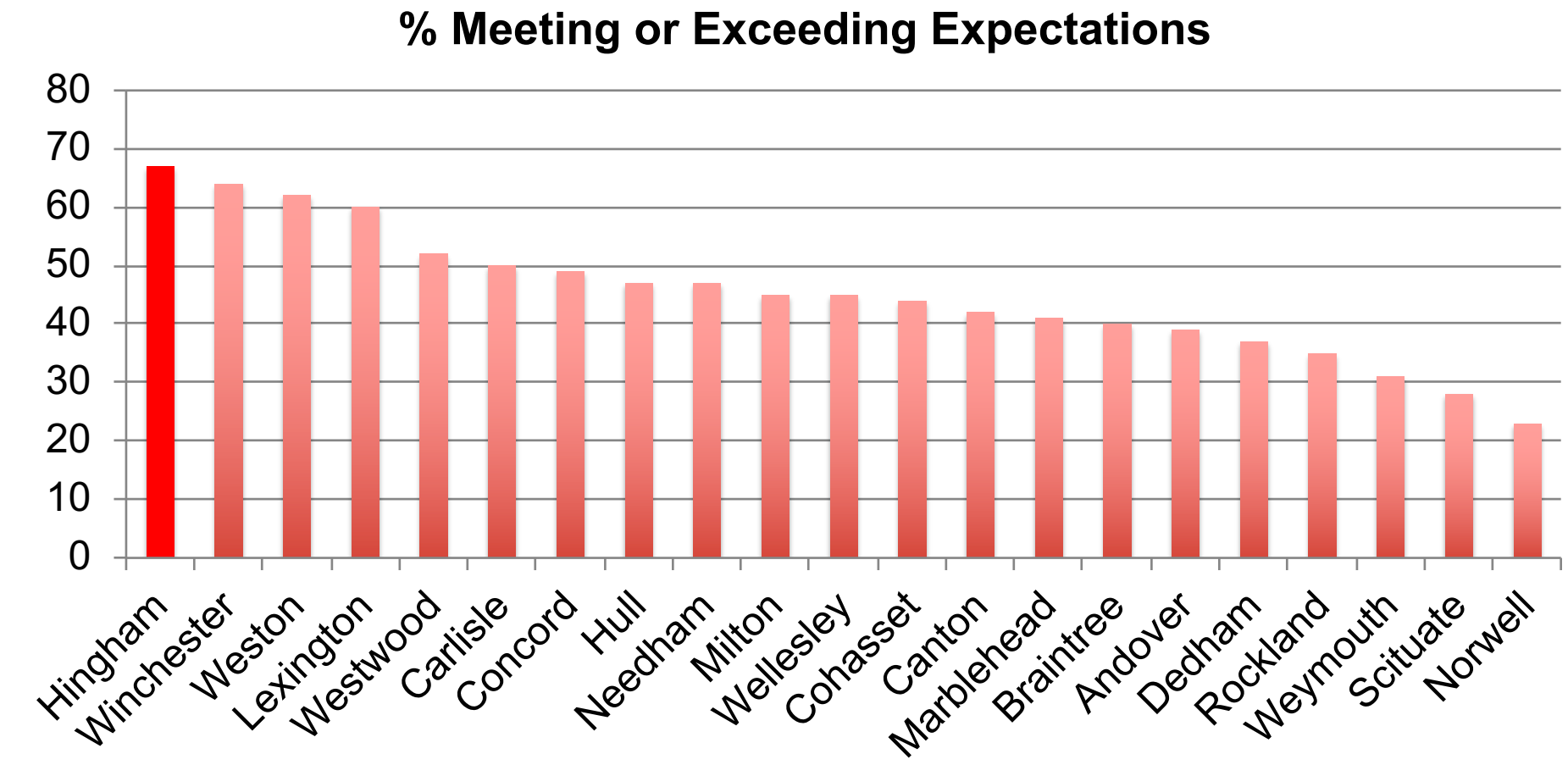
High Needs: Grade 5 Math



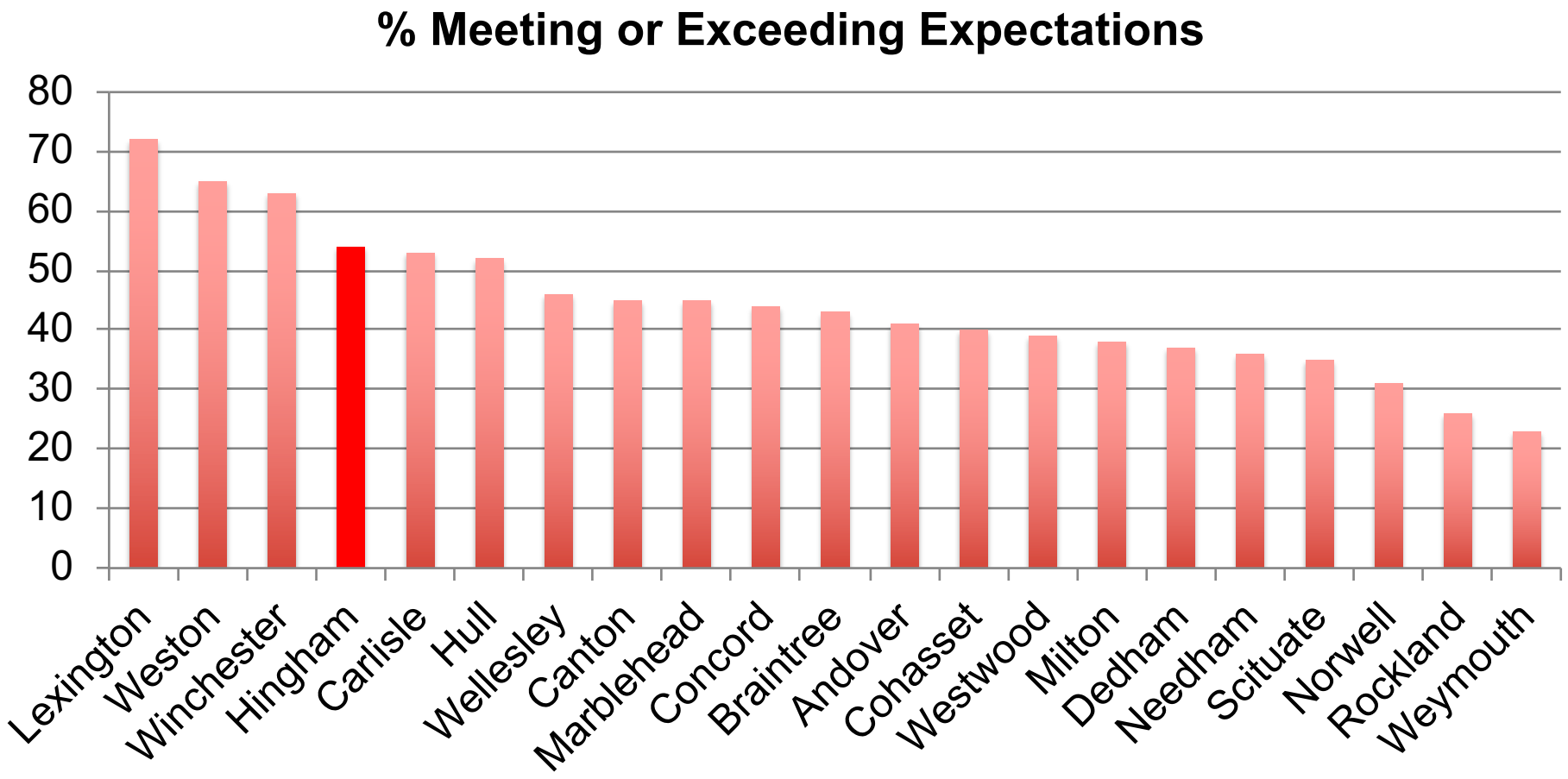
High Needs: Grade 5 STE



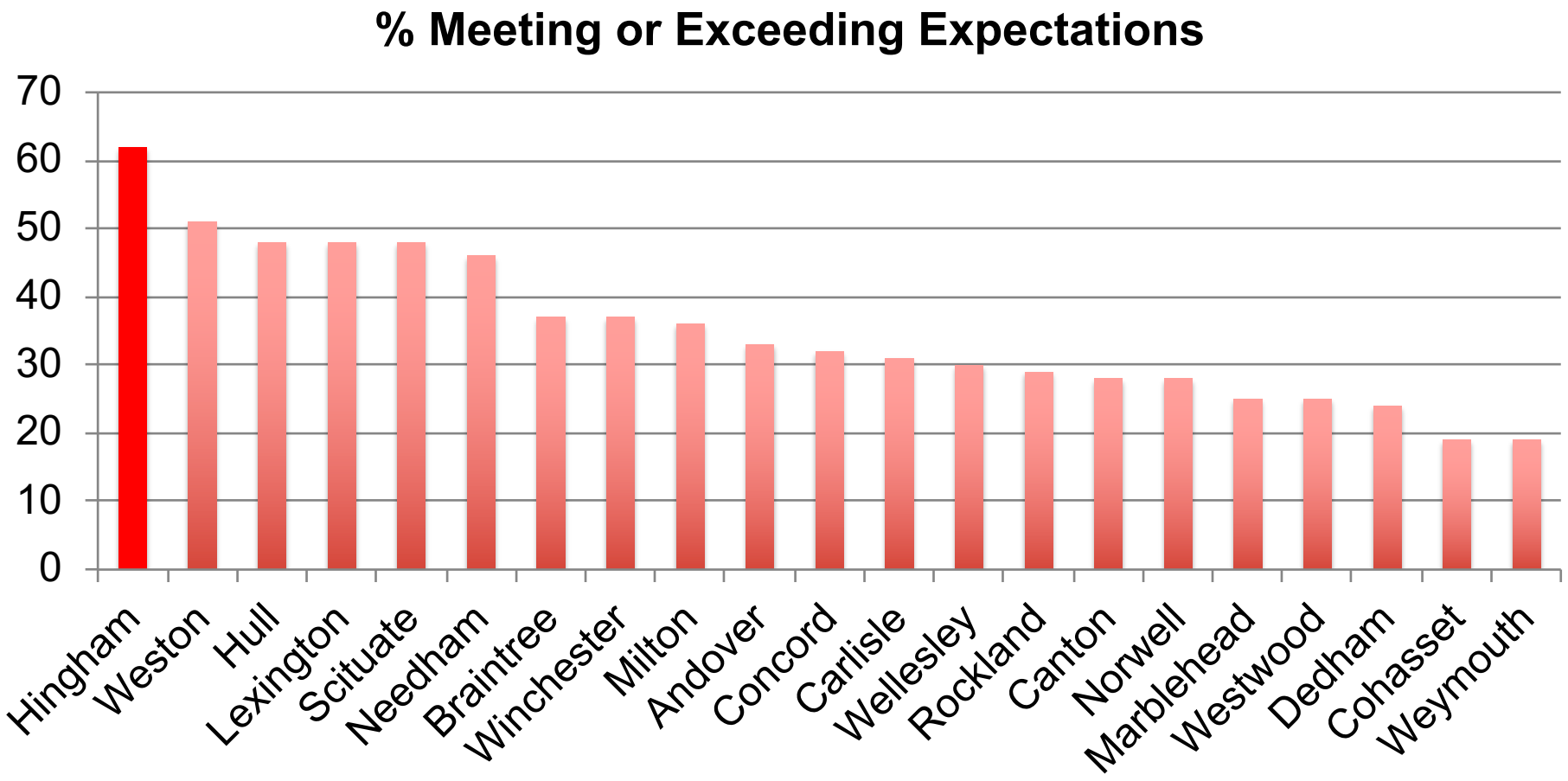
High Needs: Grade 6 ELA



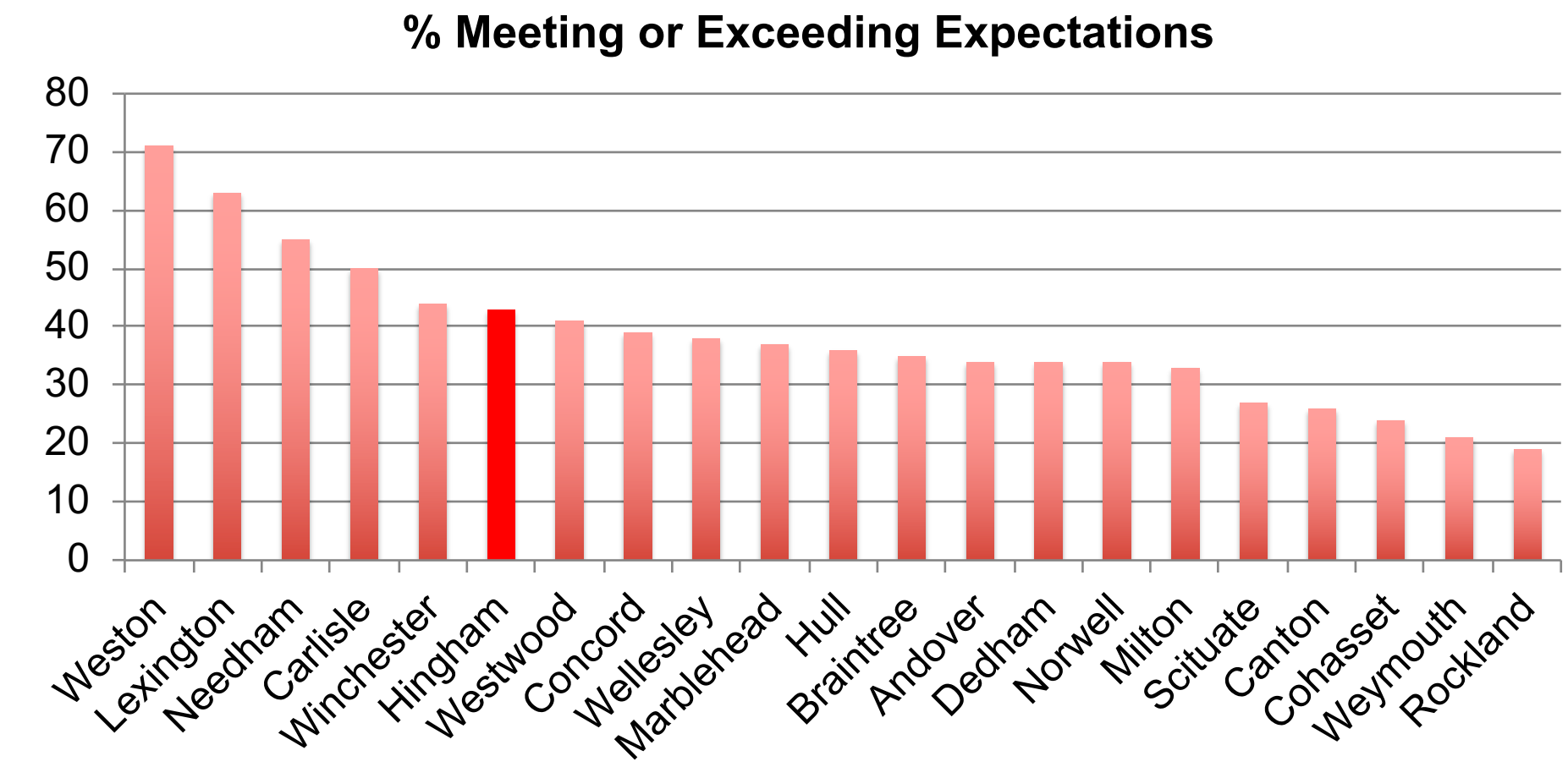
High Needs: Grade 6 Math



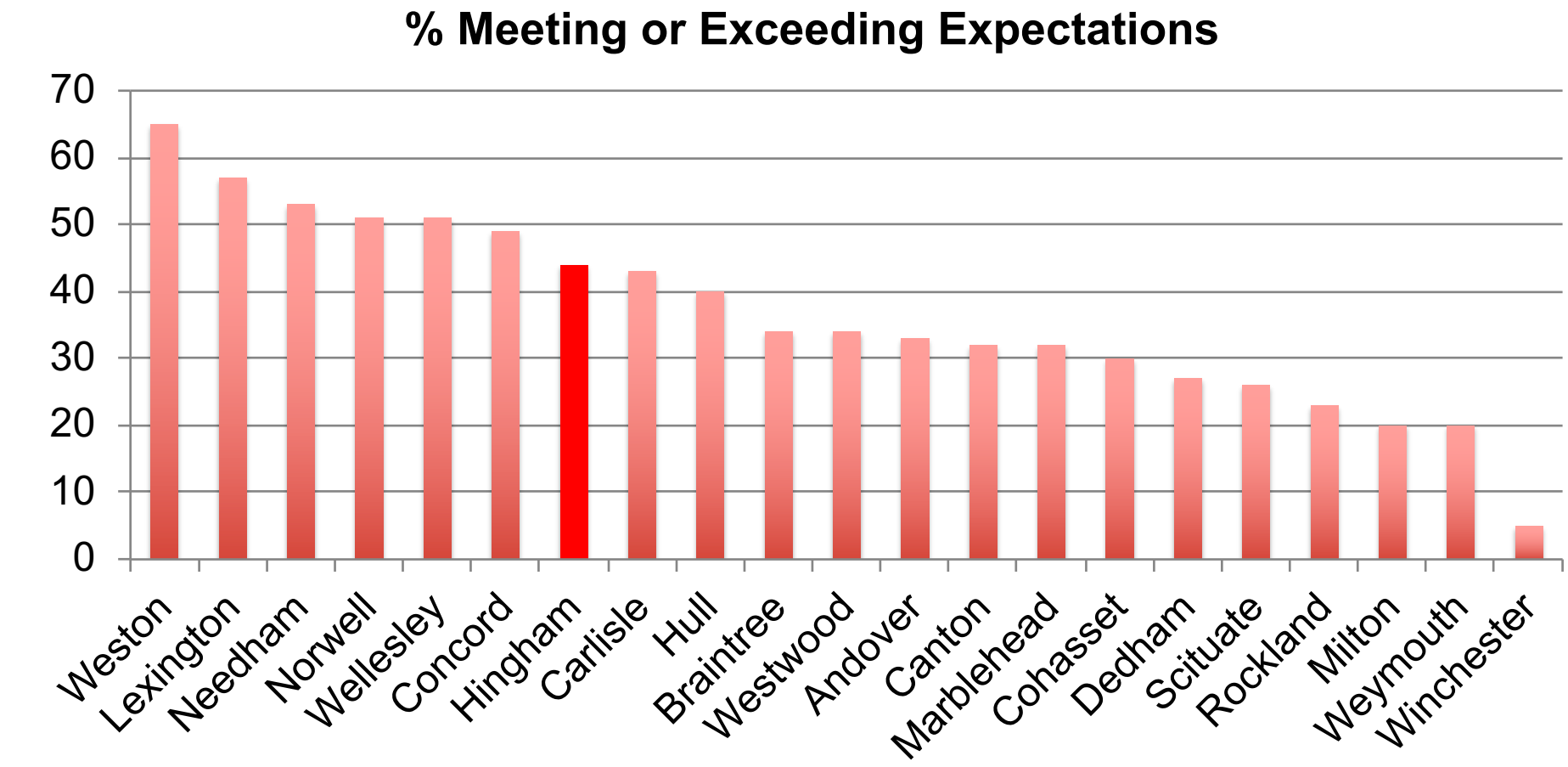
High Needs: Grade 7 ELA



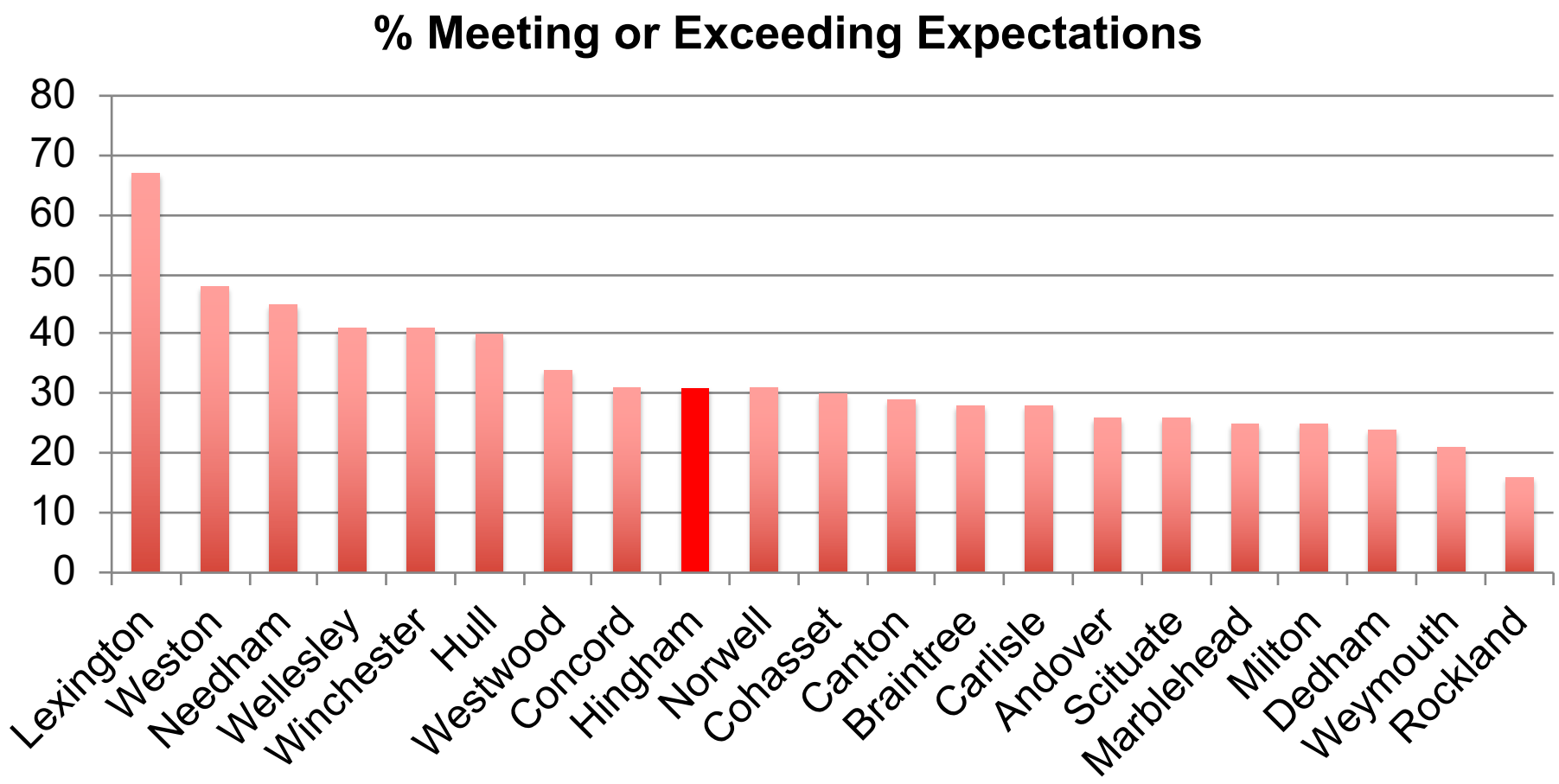
High Needs: Grade 7 Math



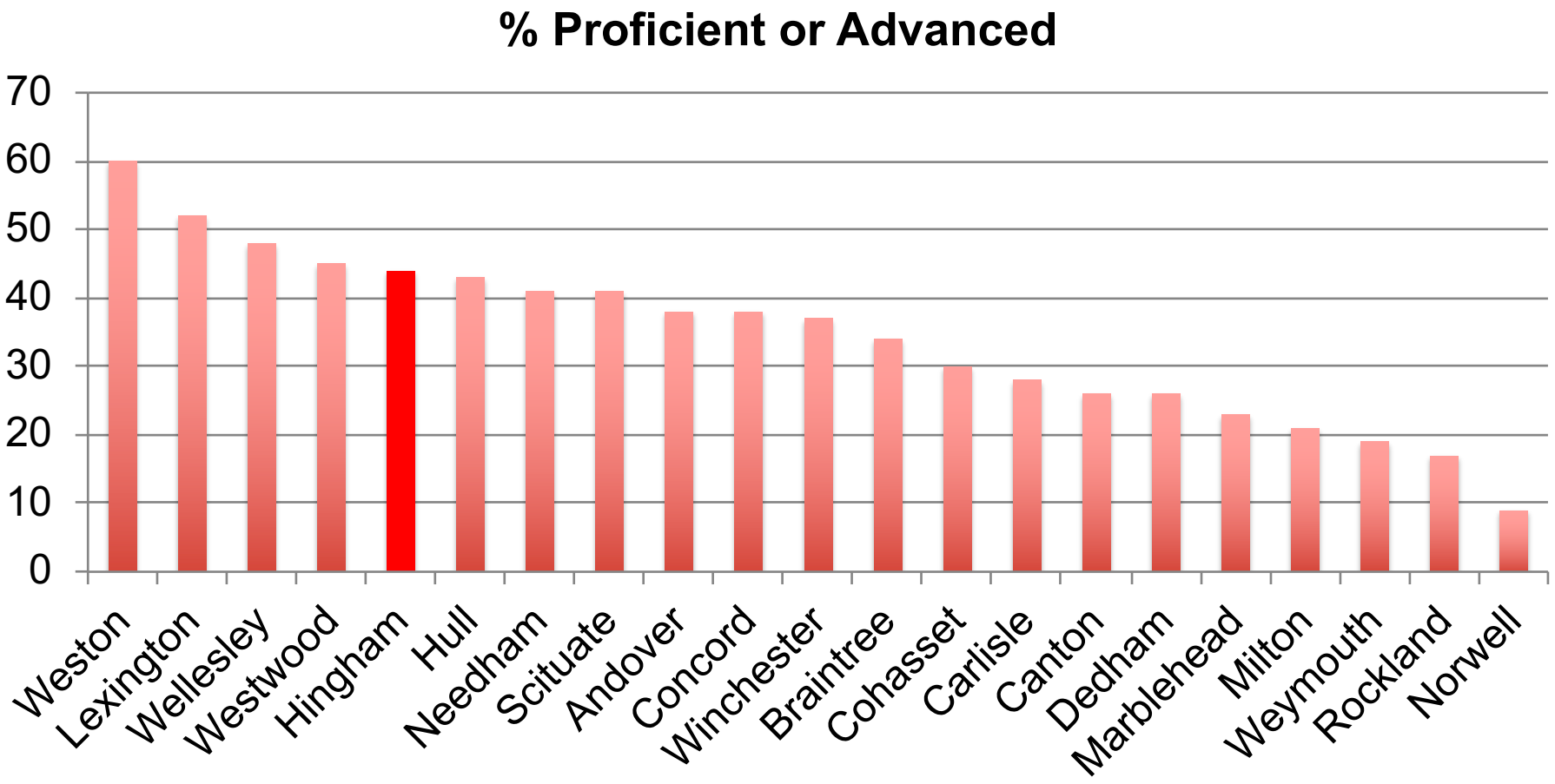
High Needs: Grade 8 ELA



High Needs: Grade 8 Math



High Needs: Grade 8 STE



Students with Disabilities Subgroup

- A count of all students in a school or district with a disability, as defined under the IDEA, who have an IEP.

MCAS RESULTS: Special Education Meeting/Exceeding Expectations 2019

Grades 3, 4, & 5	Hingham	State
Grade 3 Reading	31	22
Grade 3 Math	31	18
Grade 4 ELA	35	17
Grade 4 Math	32	18
Grade 5 ELA	29	16
Grade 5 Math	40	15
Grade 5 STE*	50	19

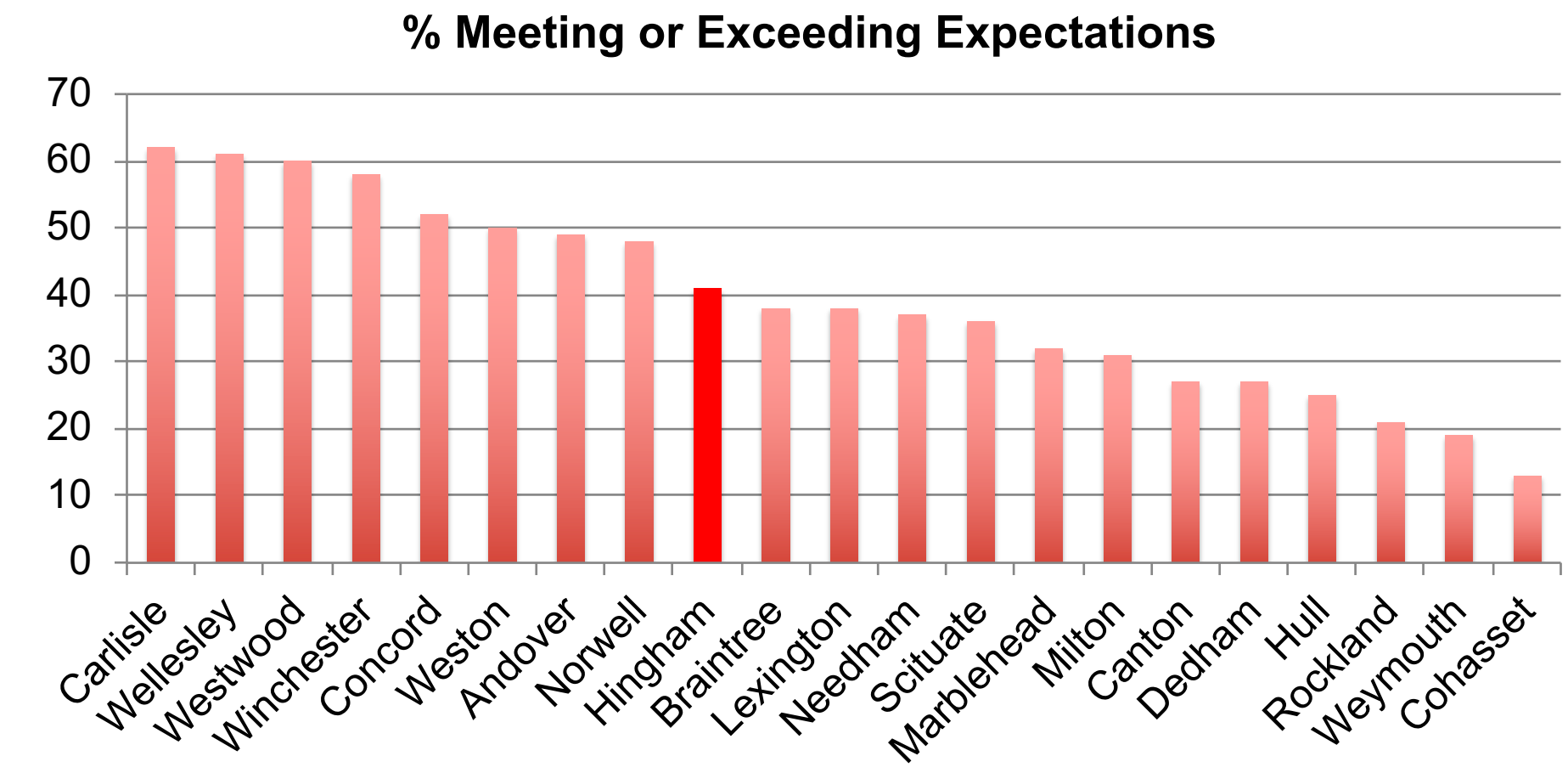
Grades 6, 7, & 8	Hingham	State
Grade 6 ELA	48	15
Grade 6 Math	32	16
Grade 7 ELA	39	12
Grade 7 Math	25	12
Grade 8 ELA	32	14
Grade 8 Math	16	11
Grade 8 STE*	35	15

All Grades 3-8	Hingham	State
ELA	37	16
Math	30	15

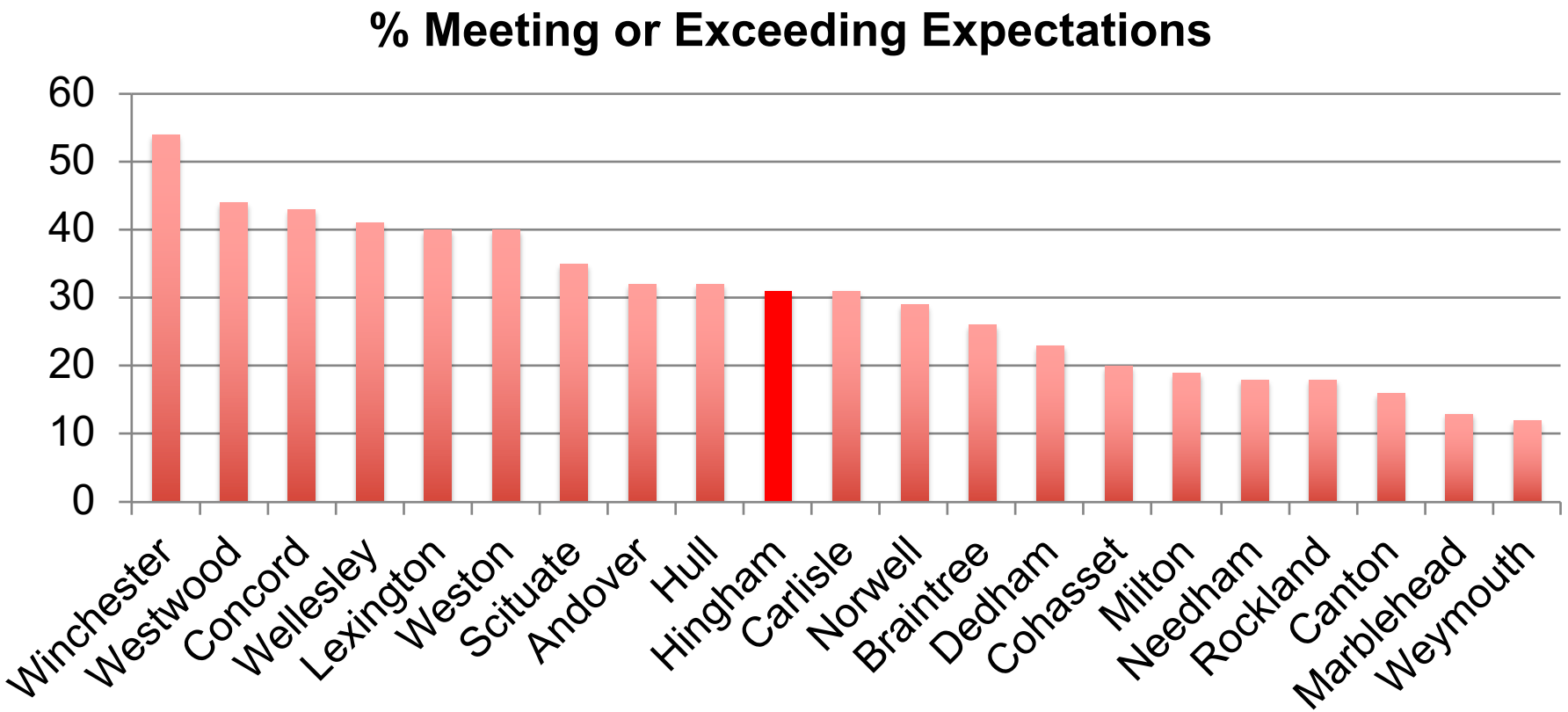
Grade 10	Hingham	State
Grade 10 ELA	39	22
Grade 10 Math	21	19
Grade 10 Science*	65	39

*** Legacy MCAS - % Proficient or Advanced**

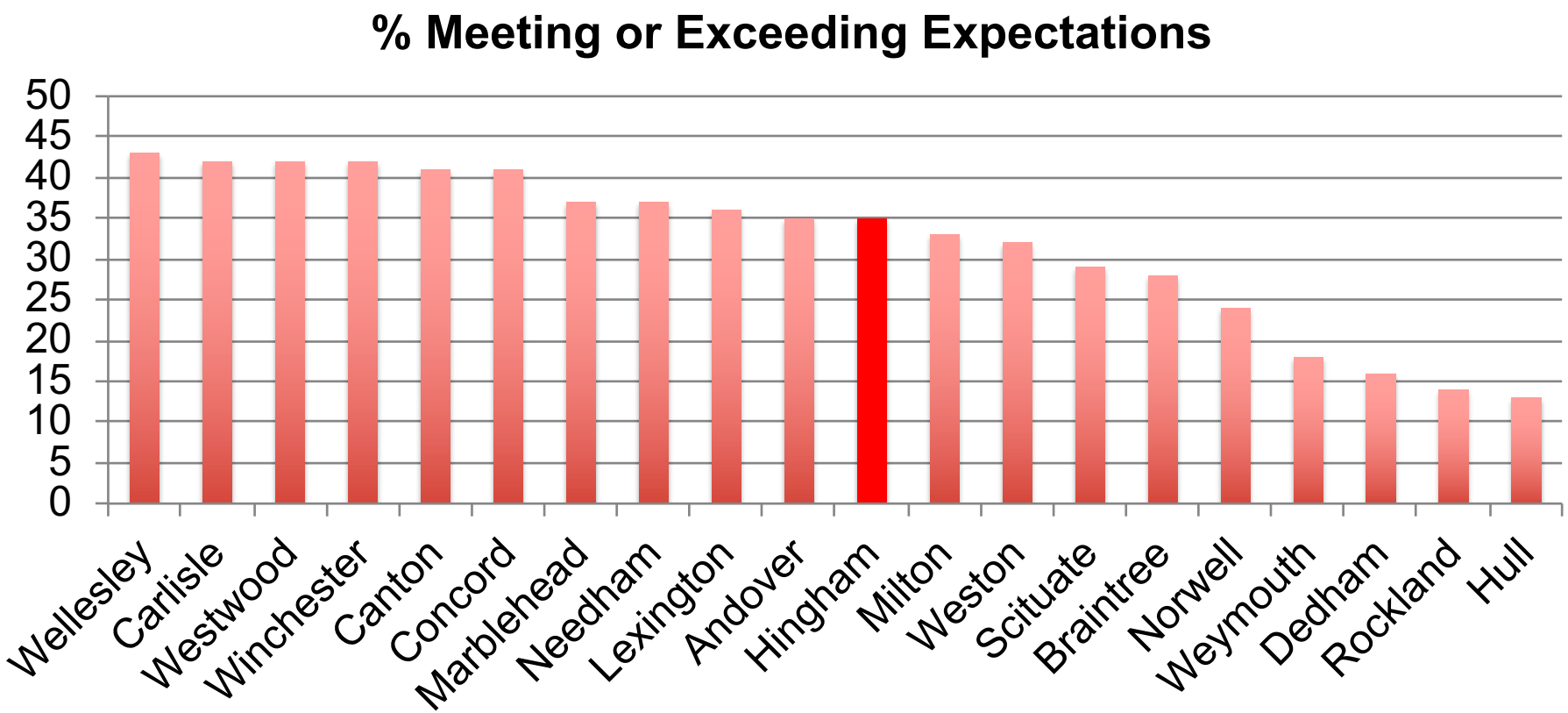
Students with Disabilities: Grade 3 Reading



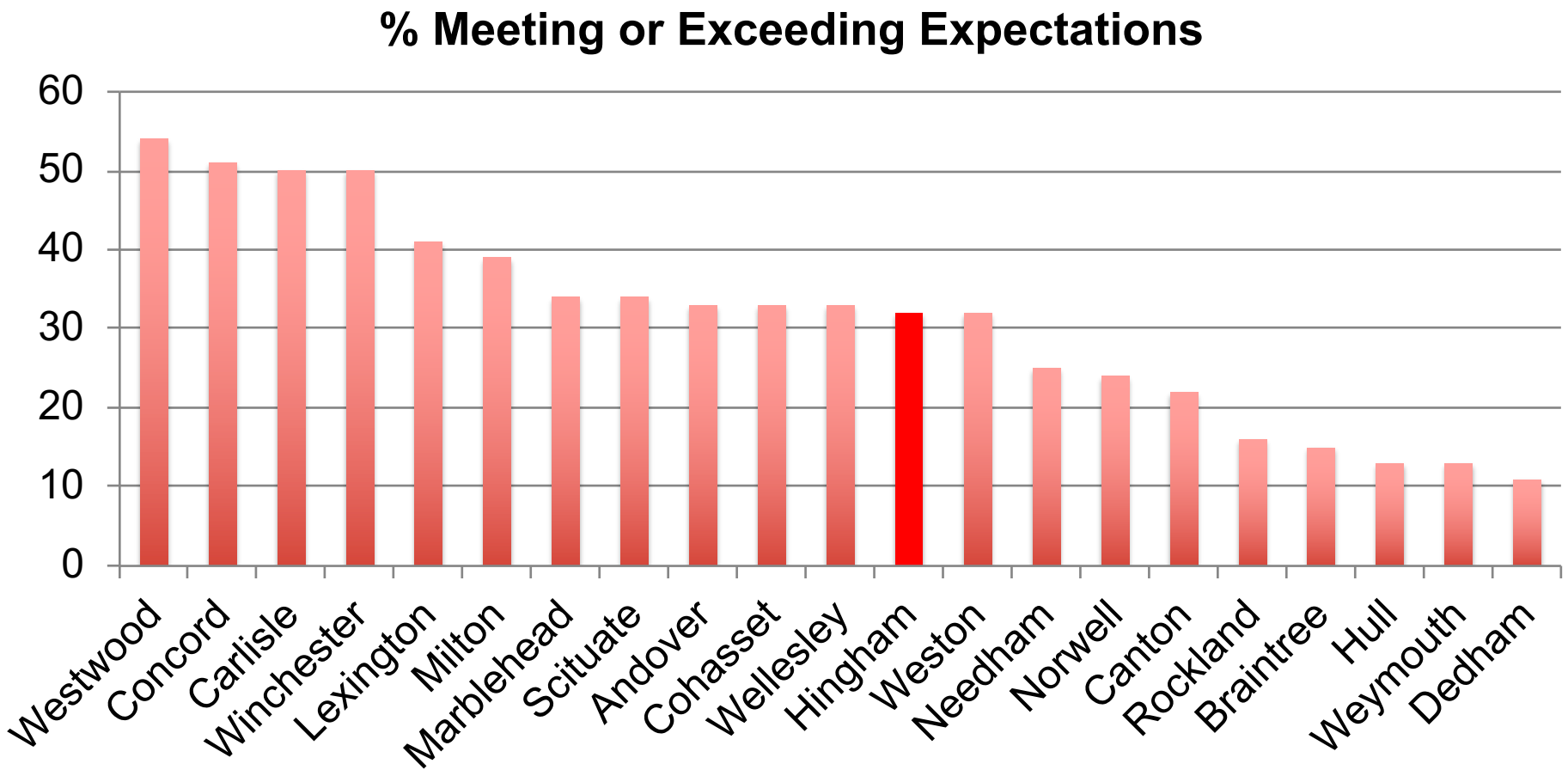
Students with Disabilities: Grade 3 Math



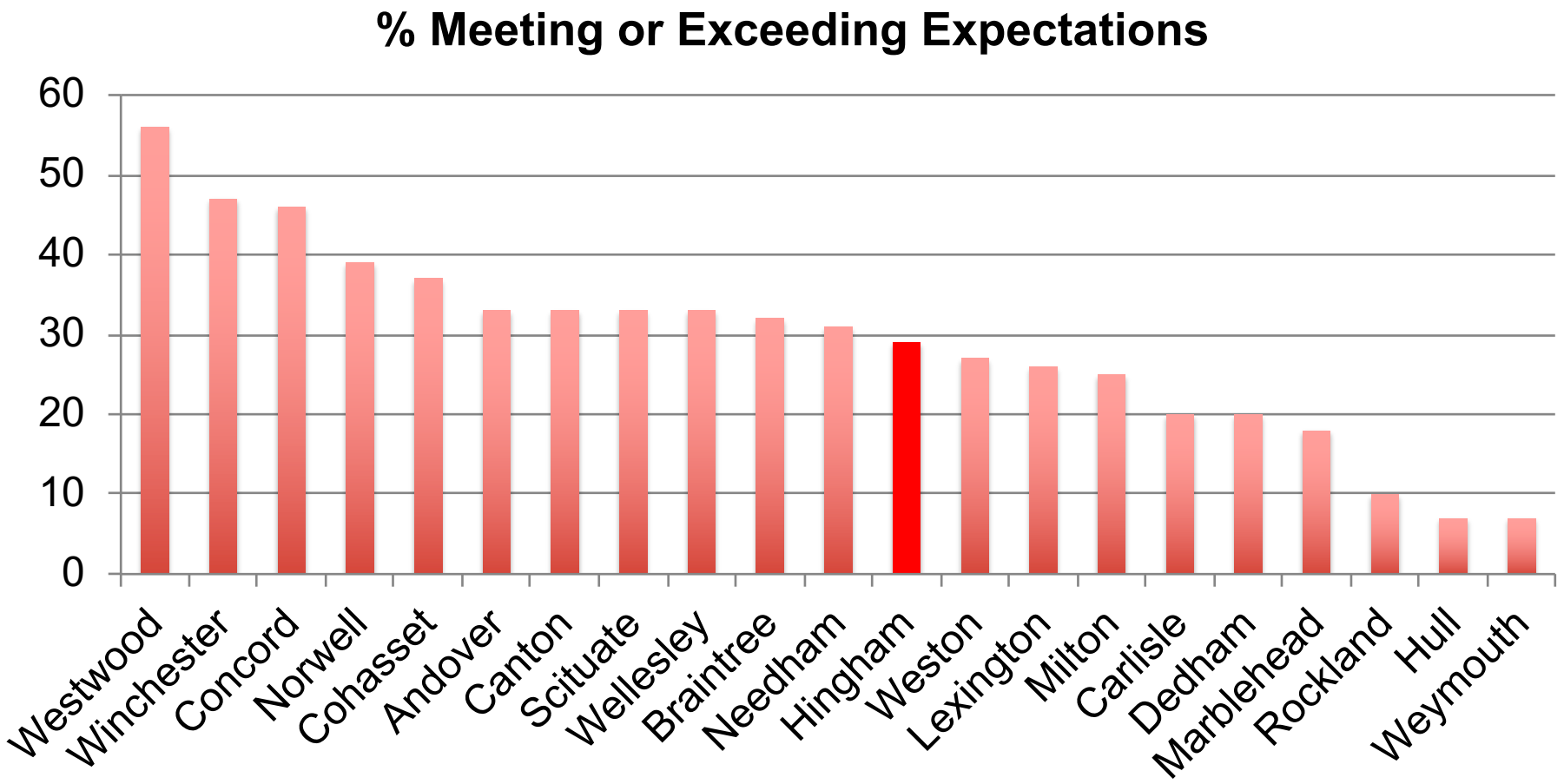
Students with Disabilities: Grade 4 ELA



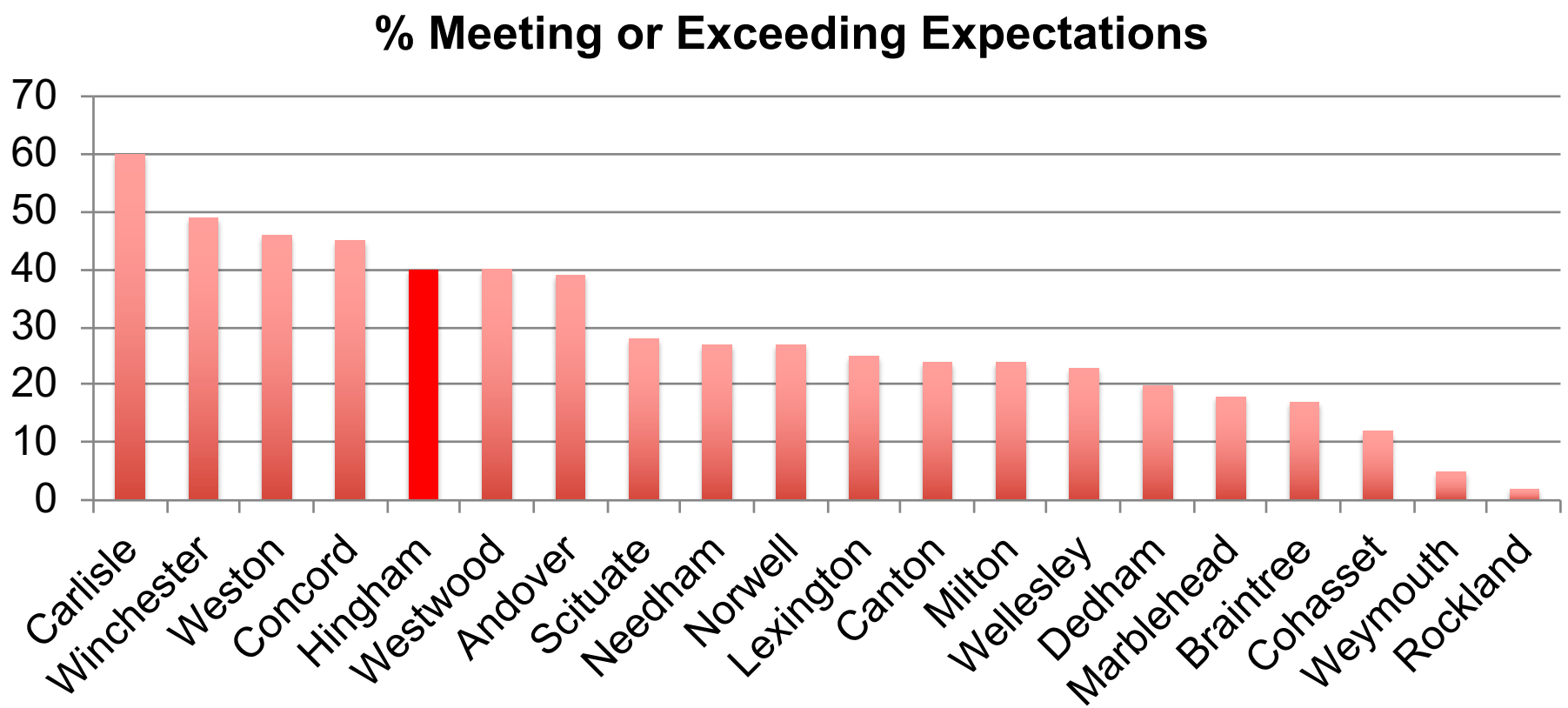
Students with Disabilities: Grade 4 Math



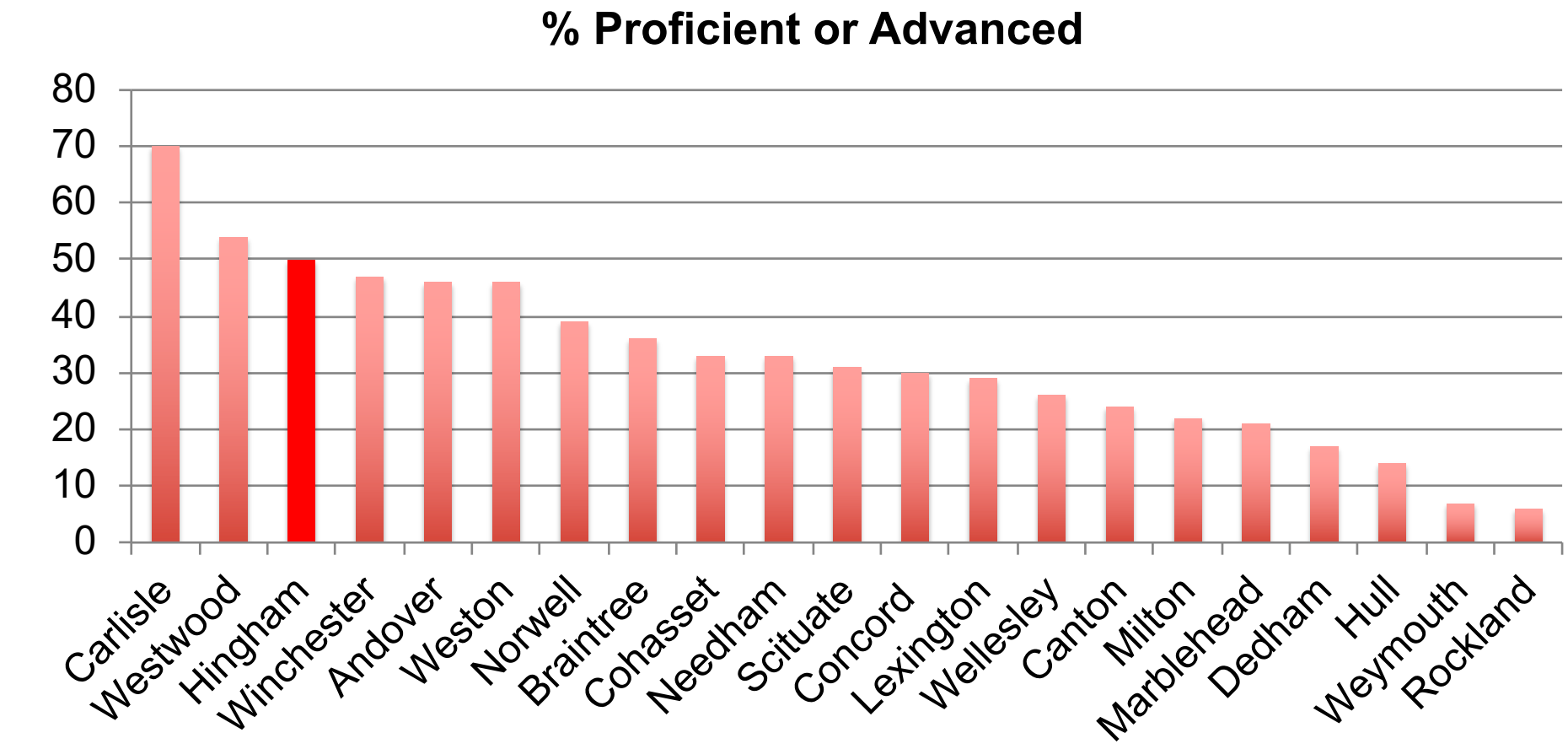
Students with Disabilities: Grade 5 ELA



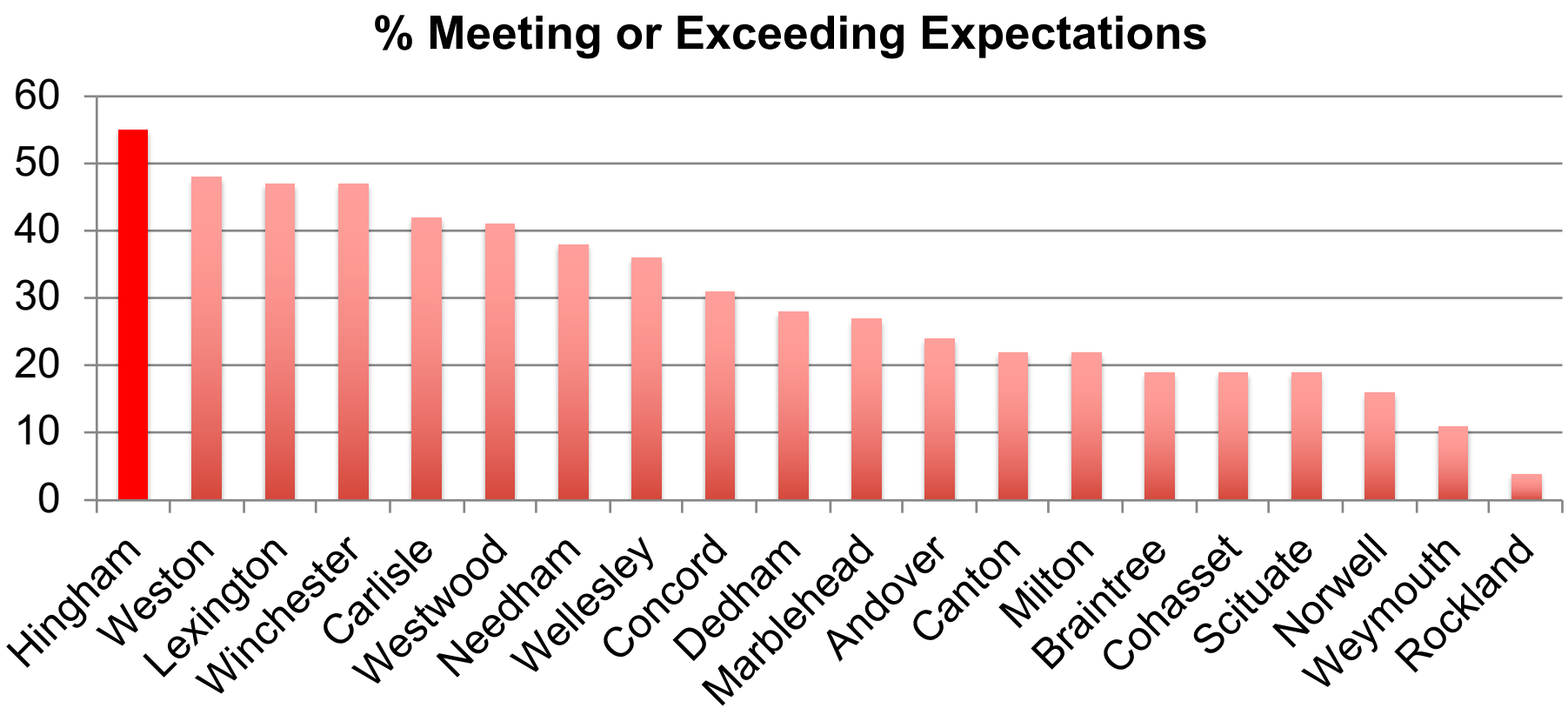
Students with Disabilities: Grade 5 Math



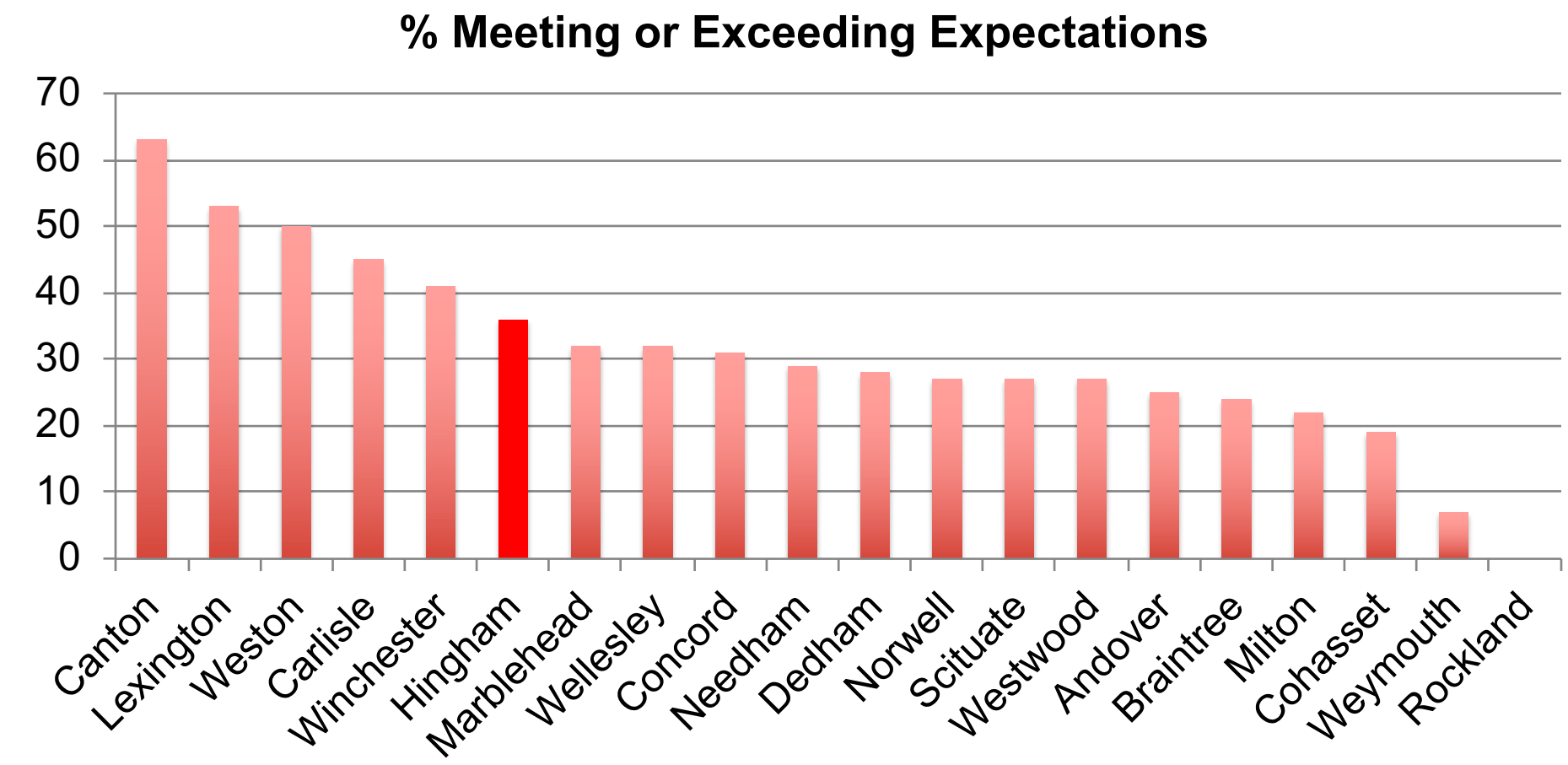
Students with Disabilities: Grade 5 STE



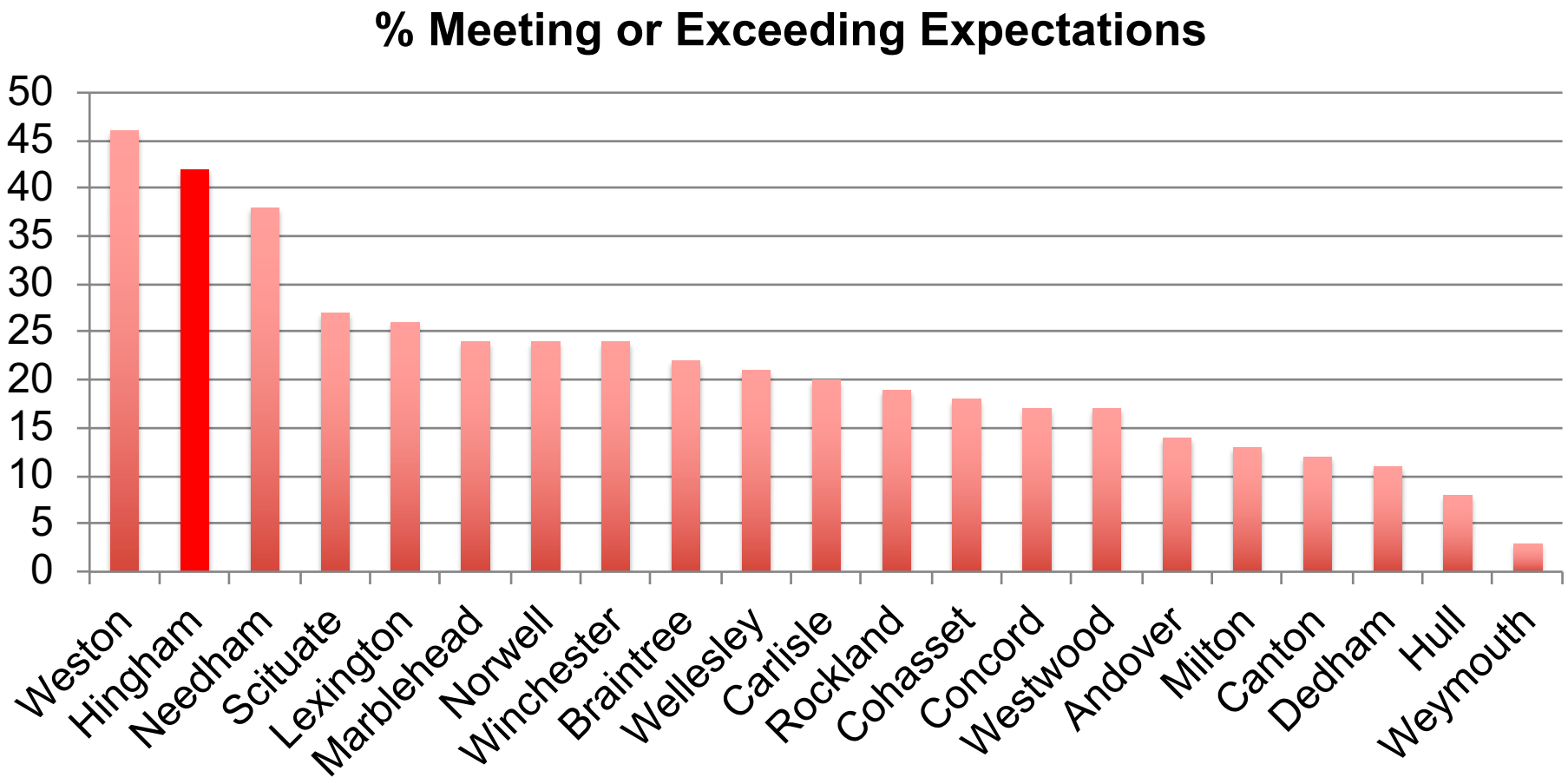
Students with Disabilities: Grade 6 ELA



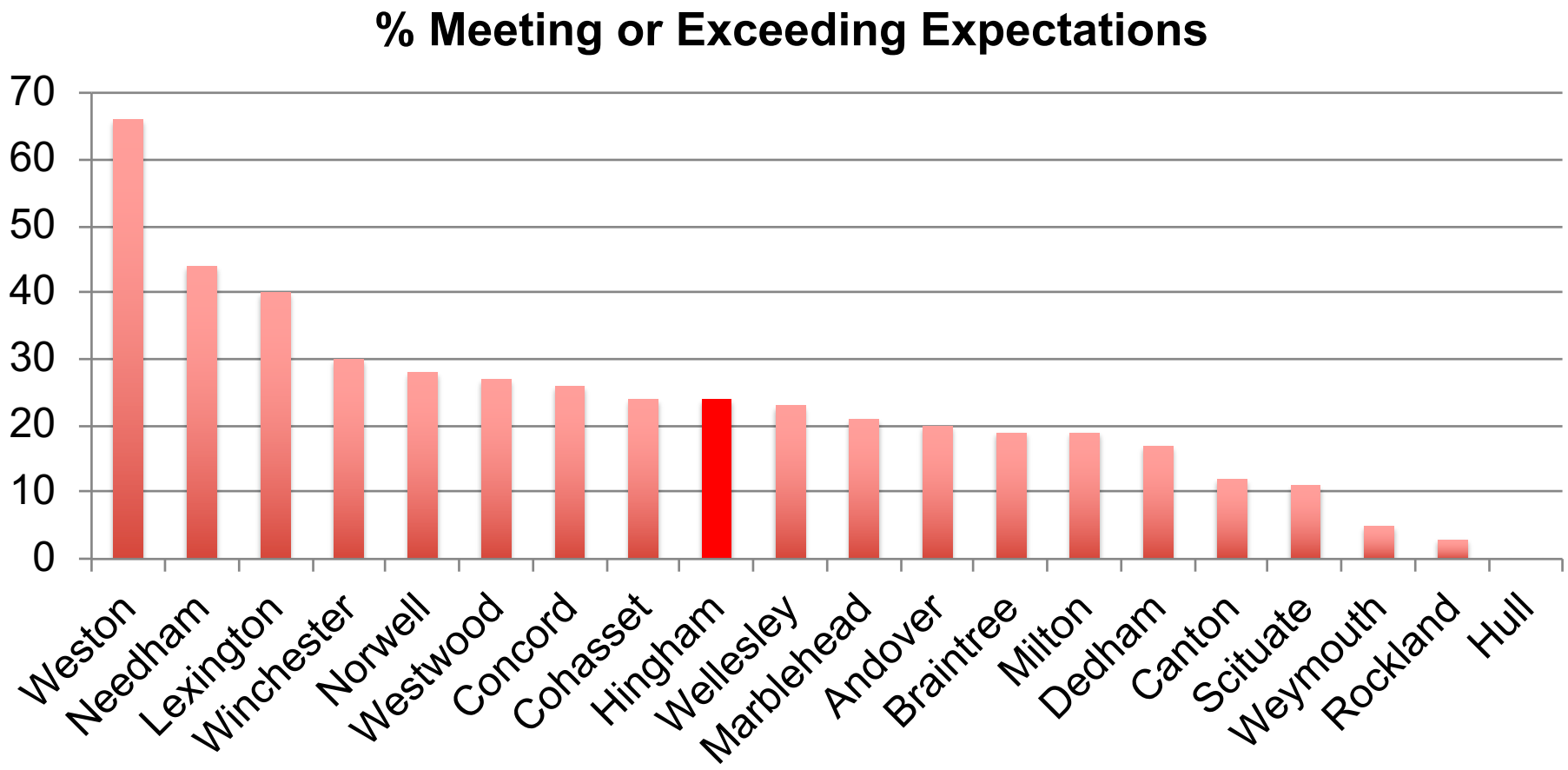
Students with Disabilities: Grade 6 Math



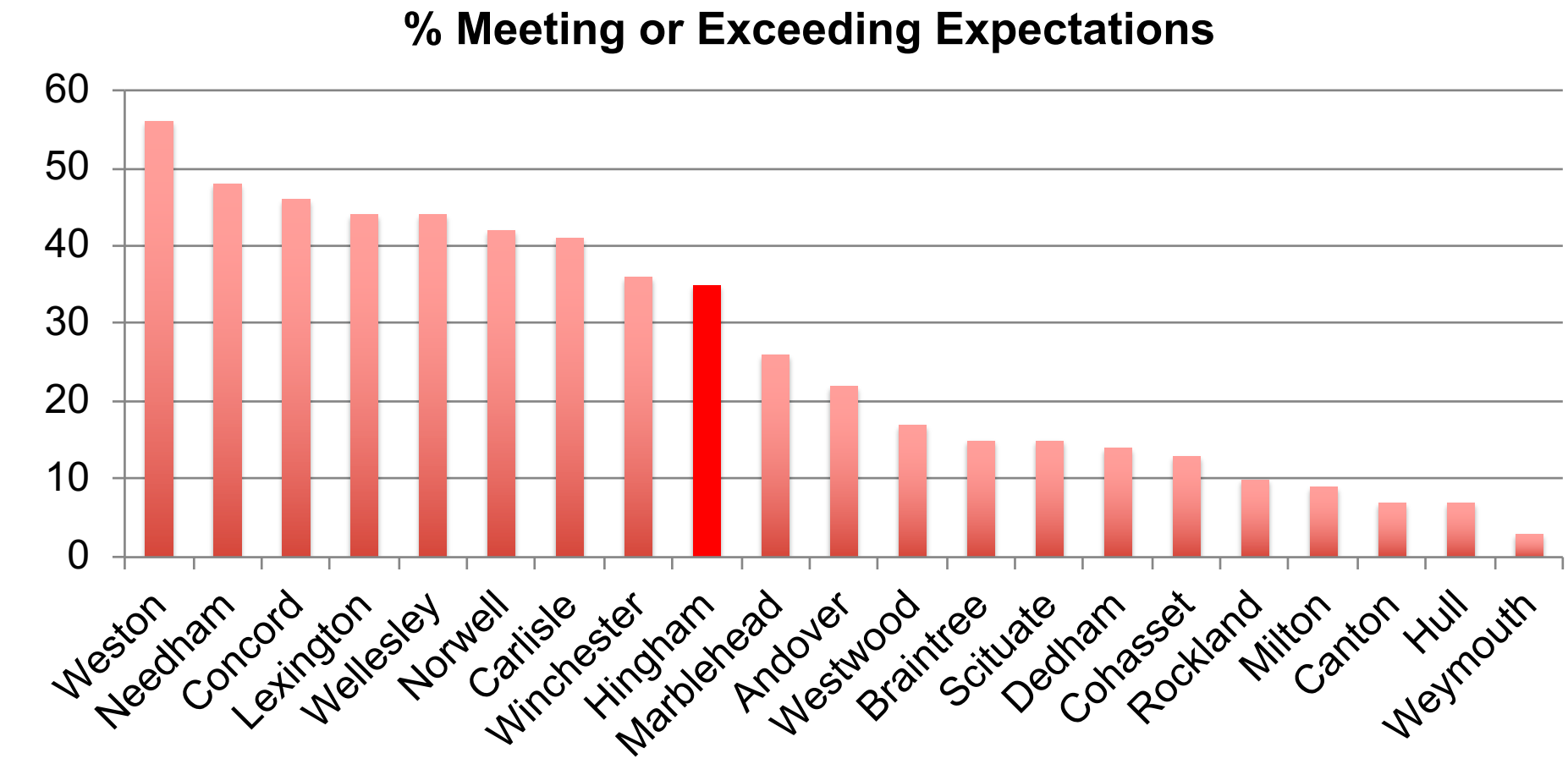
Students with Disabilities: Grade 7 ELA



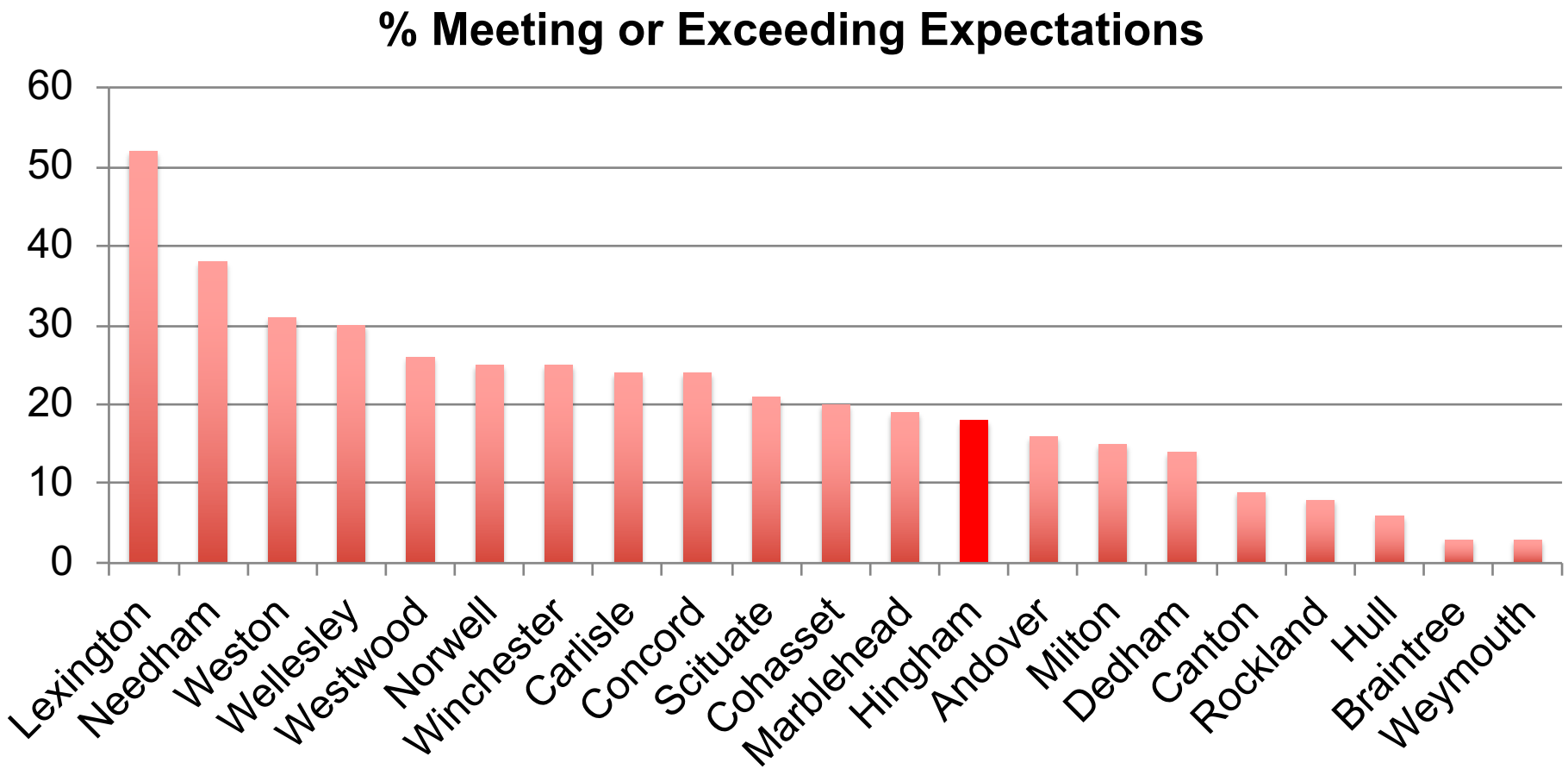
Students with Disabilities: Grade 7 Math



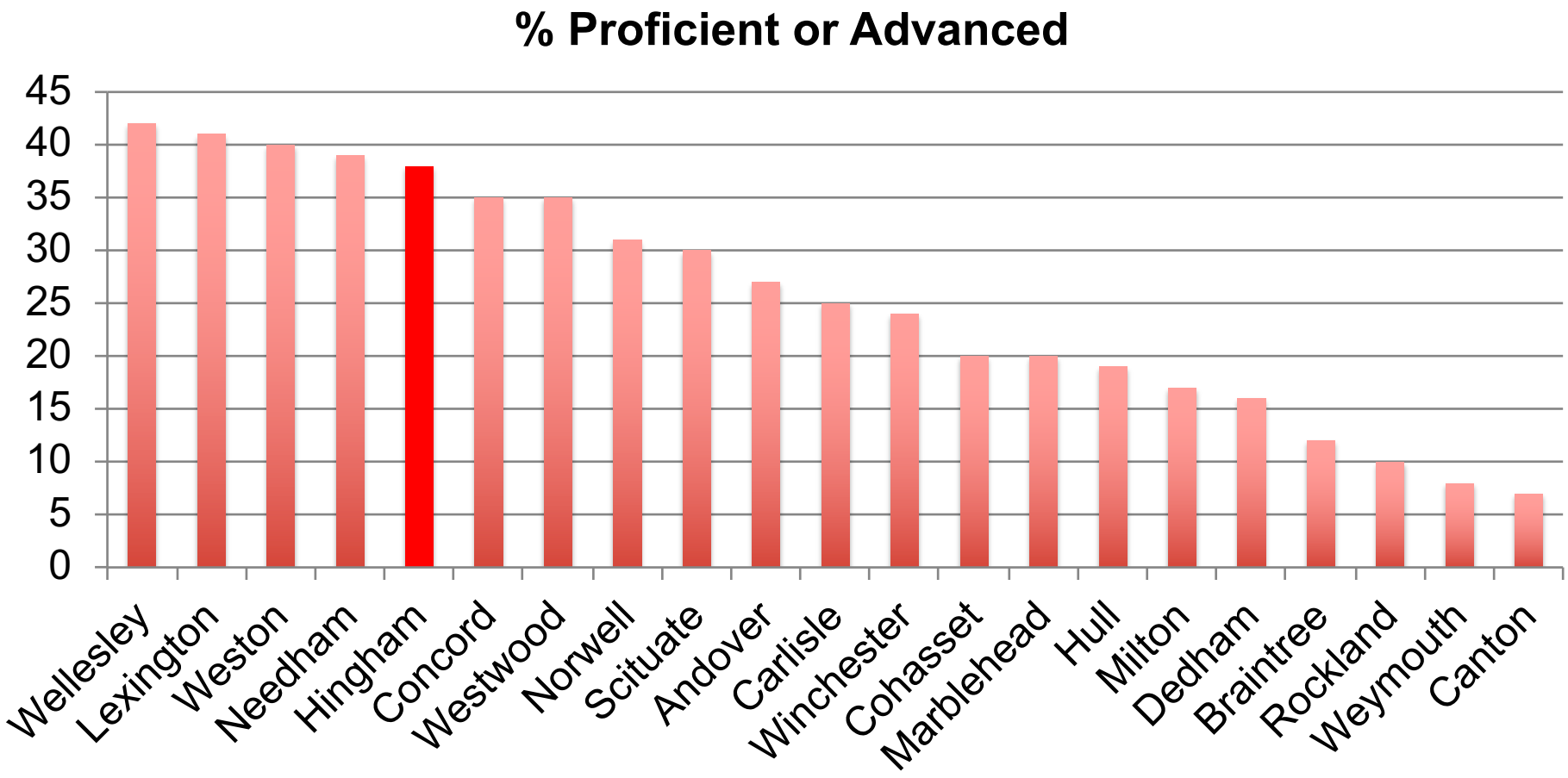
Students with Disabilities: Grade 8 ELA



Students with Disabilities: Grade 8 Math



Students with Disabilities: Grade 8 STE



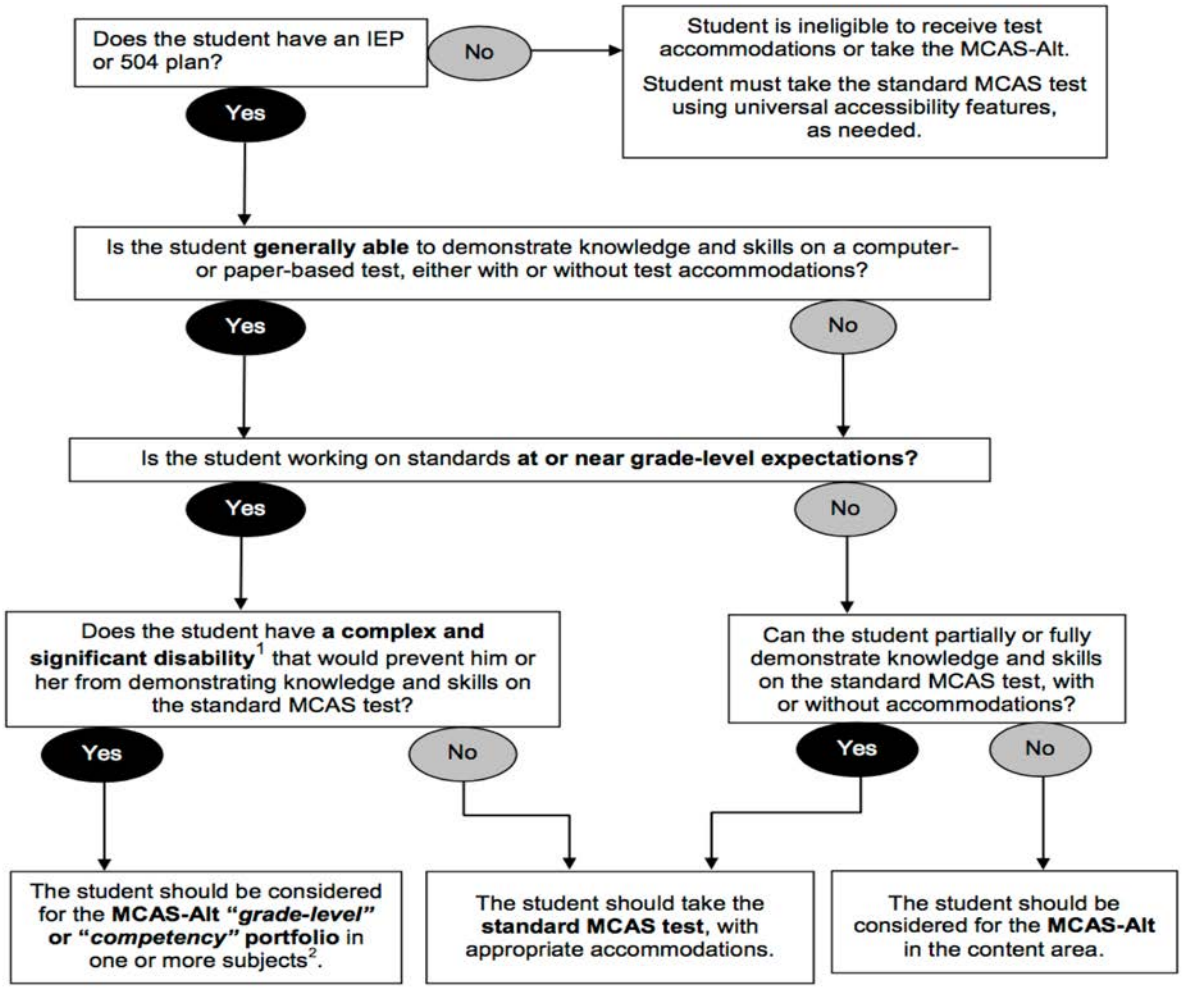
MCAS Alt – Hingham

School	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
East	2	3	1	0	2	1	1
Foster	0	0	0	0	2	1	1
PRS	0	0	1	1	1	1	1
South	0	1	1	4	4	4	4
HMS	7	6	6	5	5	3	2
HHS	0	0	5	0	2	0	3
Total	**9**	**10**	**14**	**10**	**16**	**10**	**12**

MCAS Alt – Decision Making

Decision-Making Tool for MCAS Participation by Students with Disabilities

The decision chart shown below may be used by IEP teams and 504 plan coordinators to make annual decisions regarding appropriate student participation in MCAS *for each content area* being assessed.



Part IV: Next Steps

District Data-Based Action Plan

- Analysis of district, school and student results, item analyses, and disaggregated results with teaching staff
- Continued use of MCAS scores, item analyses, and additional assessment results to track and monitor individual student performance and cohort results.
- Continued opportunities for students to practice answering a variety of types of questions and assessment measures and to practice test-taking strategies.
- Continued emphasis on the use of instructional strategies which promote critical thinking, extended problem solving, and writing for a variety of purposes.
- Use of supervision and evaluation process to ensure consistent implementation of curriculum standards.
- Title I Programming to support eligible students
- Redesign of K-5 intervention program; implementation of 6-8 intervention program (underway; HTSS: Academic).

Strategies for Improvement: Elementary ELA

- Targeted implementation of the standards-based reading program, *Journeys*
- Integration of *Journeys* reading program with *Empowering Writers* program to best scaffold and reinforce writing in the narrative, expository, and persuasive forms
- District-wide small group tiered instruction K-5
- Regular practice with standards-based reading assessments
- Incorporation of writing strategies across all content areas
- Direct instruction on responding to questions that compare multiple texts
- Revision of HPS MCAS prep guide to align with the Spring 2020 test parameters
- Ample opportunities for online test-taking practice using Edulastic and other resources to ensure familiarity with format, especially with regard to essay-writing in required text boxes
- Inclusion of special education teachers in curriculum meetings and ongoing discussions concerning MCAS findings and strategies for improvement

Strategies for Improvement: Elementary Math

- District-wide Tier 1 instructional coaching with a focus on student-centered outcomes.
- District-wide instructional coaching on Number Talks to help classroom teachers promote flexible thinking with Base-Ten arithmetic.
- Increased practice modules on new question types.
- Team meetings between grade level teachers and Elementary Math Specialist to discuss building based areas of strength and growth.
- More coordination between Math Department and special education department to discuss areas for improvement.
- Continued Development of Power Standards and elementary progression of standards through multiple grades.
- Increased support for struggling learners via elementary math tutors.
- Continual review of the rigor and alignment of EM4 units of study and add materials as needed.
  - Grade 3: Geometry and Measurement with Area and Perimeter
  - Grade 4: Multi-digit arithmetic on numbers less than 1,000,000
  - Grade 5: Classifying two-dimensional figures based upon their attributes
- Maintain a focus on the Everyday Math 1 and 2-day Open Response units.
- Grade 4 team focus on improving constructed responses and articulation of understandings.

Strategies for Improvement: Grade 5 Science

Strategies for Improvement

Grade 5 Science MCAS

- Increased emphasis on **data practices,** including data table and graph analysis
- Strategies for improvement on **open response questions** include reading comprehension strategies (*highlight relevant content/circle action words*) and addressing each part of a multi-step question.

11 The tables show average temperature and precipitation data for four regions of the world.

Region W

	January	March	May	July	September	November
Temperature (°F)	22	25	31	35	29	26
Precipitation (in.)	2	5	7	3	6	8

Region X

	January	March	May	July	September	November
Temperature (°F)	−38	−4	46	64	45	−20
Precipitation (in.)	0	0	1	2	1	1

Region Y

	January	March	May	July	September	November
Temperature (°F)	70	66	52	48	54	66
Precipitation (in.)	2	2	1	0	1	2

Region Z

	January	March	May	July	September	November
Temperature (°F)	77	79	84	82	82	81
Precipitation (in.)	5	2	4	8	10	8

Which region is most likely a tropical rainforest?

Ⓐ region W

Ⓑ region X

Ⓒ region Y

Ⓓ region Z

Strategies for Improvement: Middle School English (I)

- Implementation of strategies from *Reading Nonfiction: Notice and Note Stances, Signposts, and Strategies* in efforts to promote improved reading comprehension of non-fiction
- Small-group instruction in reading labs for students demonstrating need for additional reading support
- Incorporation of current events articles for expository, non-fiction practice
- Targeted grammar instruction through *Language Network* and other resources
- Collaboration across disciplines to incorporate common reading comprehension strategies
- Update HPS MCAS prep guide to reflect the parameters of the Spring 2020 exam

Strategies for Improvement: Middle School English (II)

- Update practice resources on the department's MCAS website
- Direct vocabulary instruction using *Classical Roots* program
- Direct instruction on responding to questions that compare multiple texts
- Ample opportunities for online test-taking practice through Edulastic and other resources so as to ensure familiarity with format, especially with regard to essay-writing in required text boxes
- Inclusion of special education teachers in curriculum meetings and ongoing discussions concerning MCAS findings and strategies for improvement

Strategies for Improvement: Middle School Math

- Grade 6-8 computer based MCAS are in their infancy.
  - Math Department Staff will have multiple professional development sessions to continue prepare for technology rich questions.
  - All 6-8 grade students will practice 2 different online math tests as part of their preparation.
  - Math Department staff is adapting exams to include more multiple select items
  - Math Department staff is working to learn new technologies to help create technology rich questions similar to those on the new MCAS
  - Increased communication between math and special education departments to ensure a smooth transition to the online platform.
  - Grade 6 Title 1 support will continue to identify gaps in students' knowledge.
  - Shifted staffing to create smaller grade 6 class size and smaller Math 7 class size
  - Evaluation of Math 8 curriculum decisions MCAS vs progress towards Algebra 1 proficiency

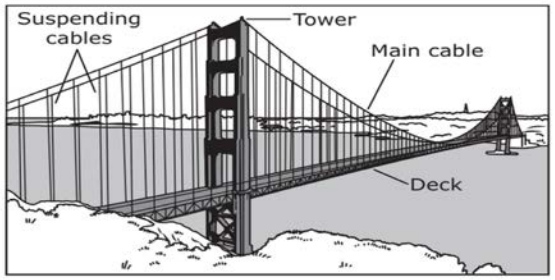
Strategies for Improvement: Grade 8 Science

- Strategies for improvement on **open response questions** include reading comprehension strategies (*highlight relevant content/circle action words*) and addressing each part of a multi-step question.

Students in a class are studying the Golden Gate Bridge in San Francisco, California, to learn about how suspension bridges are designed and how different loads affect them. The students recorded the following information.

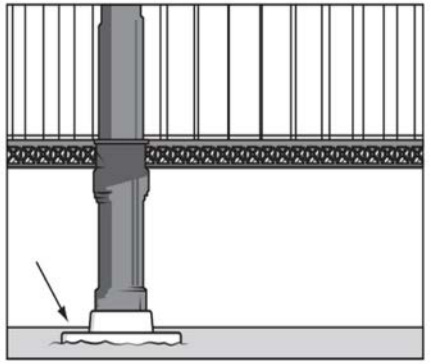
- Millions of kilograms of concrete and steel were used to construct the bridge.
- When designing the bridge, engineers had to take into consideration natural events, such as earthquakes and strong winds.
- About 40 million cars per year cross the bridge.
- The deck of the bridge includes a sidewalk 3 m wide used by many bicyclists and pedestrians.
- Although the bridge looks horizontally straight, it has a small arc: the deck of the bridge is 26 m higher at its center than it is on either end.
- When the outside temperature changes, the length and shape of the bridge changes.
- The bridge is designed for a live load of 4,000 lb./ft.

The diagram shows the Golden Gate Bridge with some of its structures labeled.



SAMPLE MULTIPLE CHOICE QUESTIONS

1 The arrow in the picture points to a part of the Golden Gate Bridge made of concrete.



Which of the following best explains why the engineers used concrete to build this part of the bridge?

Ⓐ Concrete is low in density so this part of the bridge can float on top of the water.

Ⓑ Concrete is very heavy so this part of the bridge can move back and forth in the wind.

Ⓒ Concrete is low in density so this part of the bridge can move back and forth in the wind.

Ⓓ Concrete is high in strength so this part of the bridge can support a large amount of weight.

Strategies for Improvement: High School English

- Implementation of 10th grade shared professional practice goal targeting best practices for analyzing paired passages that represent multiple genres
- Incorporation of writing strategies across all content areas
- Direct instruction on responding to multiple choice and technology enhanced questions that compare multiple texts
- Revision of HPS MCAS prep guide to reflect the new parameters of the Spring 2020 exam
- Update practice resources on the department's MCAS website
- Direct vocabulary instruction using *Classical Roots* program
- Ample opportunities for online test-taking practice through Edulastic and other resources so as to ensure familiarity with format, especially with regard to essay-writing in required text boxes
- Inclusion of special education teachers in curriculum meetings and ongoing discussions concerning MCAS findings and strategies for improvement

Strategies for Improvement: High School Math

Grade 10 MCAS was computer based for the first time in the spring of 2019.

- Math Department performed MCAS audit for the 5 different courses that teach sophomores.
- Math Department will continue to focus on adjustments to 2017 framework adjustments.
- All 10th grade students will practice 2 different online math tests with their classroom teachers.
- Math Department developed website to house MCAS 2.0 practice material.
- Math Department engaged in professional development on further implementing technology rich questions into curriculum assessments.
- Math Department staff have chosen MCAS and technology specific goals to help improve performance.
- Math Director hosted conference for 20 other math coordinators to discuss appropriateness, concerns and best practices with last year's exam.
- Math Director met with MCAS test writers and was also part of the DESE review panel to ensure that the grade 10 tests aligns with the Massachusetts Curriculum Framework.
- An after school MCAS bootcamp will be offered in the weeks leading up to the spring MCAS exam for our most at risk 10th grade students.
- Student(s) who did not initially pass the MCAS in spring of 2019 will receive individual tutoring prior to MCAS retake exam in the fall.
- New small group instruction courses at high school will be monitored for effects on MCAS performance.

Strategies for Improvement: High School Science

Strategies for Improvement

HS Biology MCAS

- Strategies for improvement on open response questions include **reading comprehension** strategies (*highlight relevant content/circle action words*) and addressing each part of a **multi-step question**.
- New curriculum unit guides have been drafted to **align curriculum to "next generation" standards**, with increased emphasis on genetics, evolution, biotechnology and "real world" higher-order problem solving.

SAMPLE MULTIPLE CHOICE QUESTION

27 A student created the table shown.

Scientific Name	Presence of Organelles	Genome Size (bases)	Genetic Material	Mutation Rate per 1,000 Genome Replications
E. coli, a bacterium	no	4,600,000	DNA	2.5
S. cerevisiae, a yeast	yes	12,000,000	DNA	2.7
N. crassa, a fungus	yes	42,000,000	DNA	3.0
bacteriophage M13, a virus	no	4,600	DNA	4.6

Based on this information, the student claims that bacteriophage M13 will adapt more quickly to a changing environment than the other organisms listed in the table.

Which of the following pieces of evidence **best** supports the student's claim?

A. Bacteriophage M13 lacks organelles.
B. Bacteriophage M13 has the smallest genome.
C. Bacteriophage M13 has the highest mutation rate.
D. Bacteriophage M13 is unable to reproduce on its own.

SAMPLE OPEN RESPONSE QUESTION

32 A barley plant has 14 chromosomes in its diploid cells. At a particular stage in its life cycle, the barley plant produces haploid cells (gametes).

a. Identify the expected number of chromosomes in a haploid cell of a barley plant.

b. Identify **and** generally describe the cellular process by which the haploid cells are produced.

c. Describe what a barley plant uses the haploid cells for **and** explain why the cells must be haploid for this purpose.

SWD Improvement Plan

- Focus on measurable goal writing and associated data collection methods to track and monitor student performance
- Ensure IEP goals are aligned with grade level learning expectation and content
- Content-directed professional development in ELA, Math and Science and teacher level data analysis of student responses
- Increase tiered instruction support at Elementary & Middle School level
- Provide frequent, high quality, professional development opportunities for faculty and staff

Questions…