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Foreword

The information contained in this Educator Guide is designed to raise educator awareness of the VWUXFWXUH RI WKH 1HZ <RUN 6WDWH *UDGHV 1HZ <RUN 6WDWH PDWK Generation Mathematics Learning Standards (KWWSV ZZZ Q\VHG JRY FXUULFXOX state-next-generation-mathematics-learning-standards).

The guide provides educators with pertinent information about the test development process, the learning standards that the tests are designed to measure, the format of the testing sessions which includes wh W\SHV RI TXHVWLRQV ZLOO EH DVNHG WKH HVWLPDWHG DYHU WRROV DUH DOORZDEOH GXULQJ WHVWLQJ /LQNV WR DGGLWL understanding of the structure of the mathematics tests. Educators are encouraged to review the guide pri to the test administration to gain familiarity with the test format. The information presented can also be used as a platform for educator discussion on how student assessment results can guide future instruction.

The Elementary and Intermediate testing schedule for the spring administration can be found on the Department's website (https://www.nysed.gov/state-assessment/grades-3-8-test-schedules). Questions UHJDUGLQJ WKH 1HZ <RUN 6WDWH 7HVWLQJ 3URJUDP DQG WH $VVHVVPHQW 6FKHGXOH PD\ EH GLUHFWHG WR WKH 2IILFH RI &XUULFXOXP DQG ,QVWUX emsassessinfo@nysed.gov 4XHVWLRQV UHJDUGLQJ WKH 1HZ <RU PD\ EH DGGUHVVHG WR WKH 2IILFH RI &XUULFXOXP DQG ,QVWUX emscurric@nysed.gov

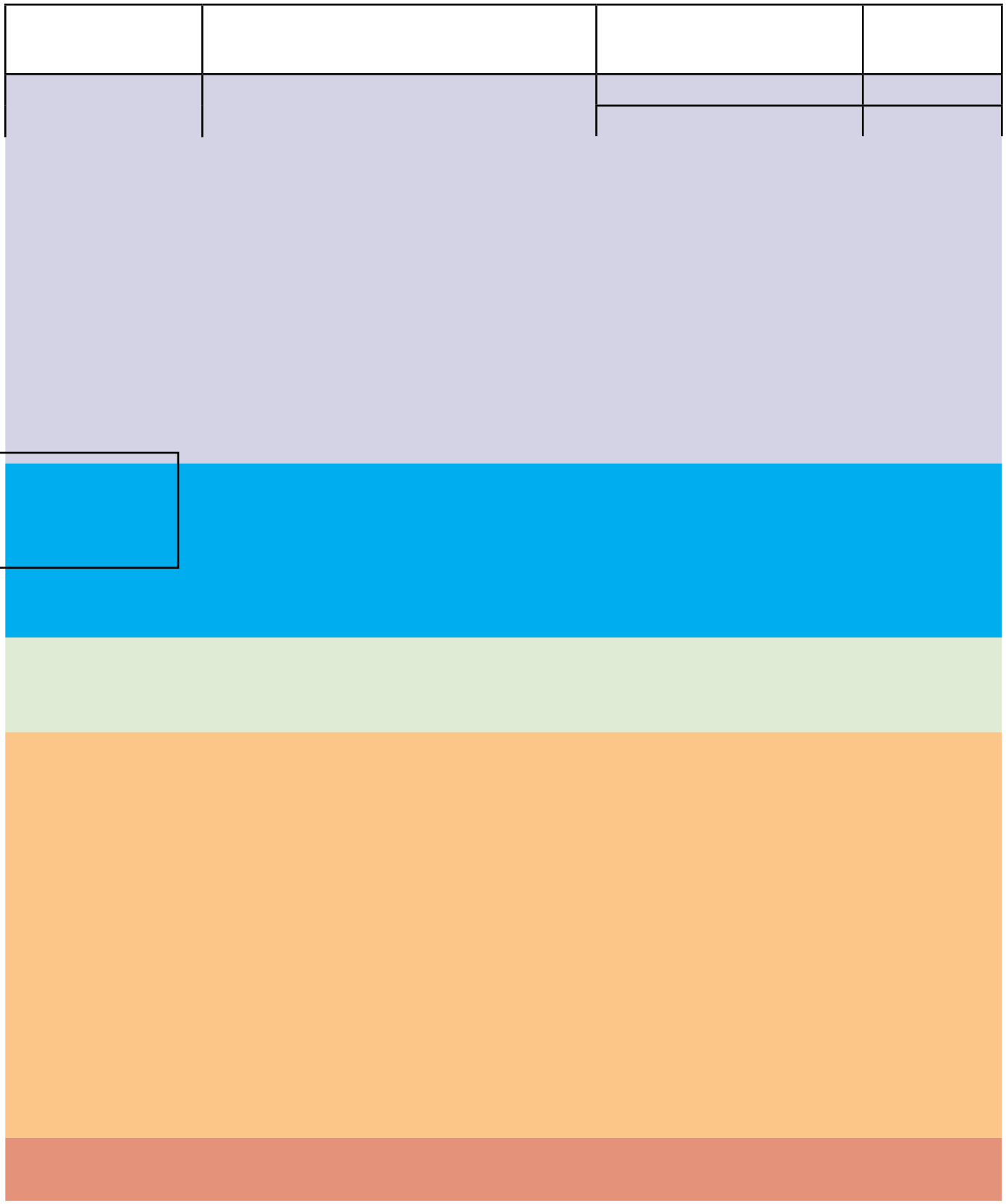
The Next Generation Mathematics Learning Standards

The 1 H Z < R U N 16 6 W D W H Q H U D W L R Q 0 D W K H P D W L F V / H D U Q L Q J 6 W D Q
understandings that individuals can and do habitually demonstrate over time when exposed to high-quality
L Q V W U X F W L R Q D O H Q Y L U R Q P H Q W V D Q G O H D U Q L Q J H [S H U L H Q F H
R I W K H 6 W D Q G D U G V I R U 0 D W K H P D W L F D O & R Q W H Q W D Q G W K H
I R F X V H G D Q G F R K H V L Y H ² G H V L J Q H G W R V X S S R U W V W X G H Q W
mathematical concepts that are necessary to function in a world very dependent upon the application o
P D W K H P D W L F V 6 W X G H Q W V D U H H [S H F W H G W R X Q G H U V W D Q G
problems rooted À ð Á\ëW O À ð` `Lê× í

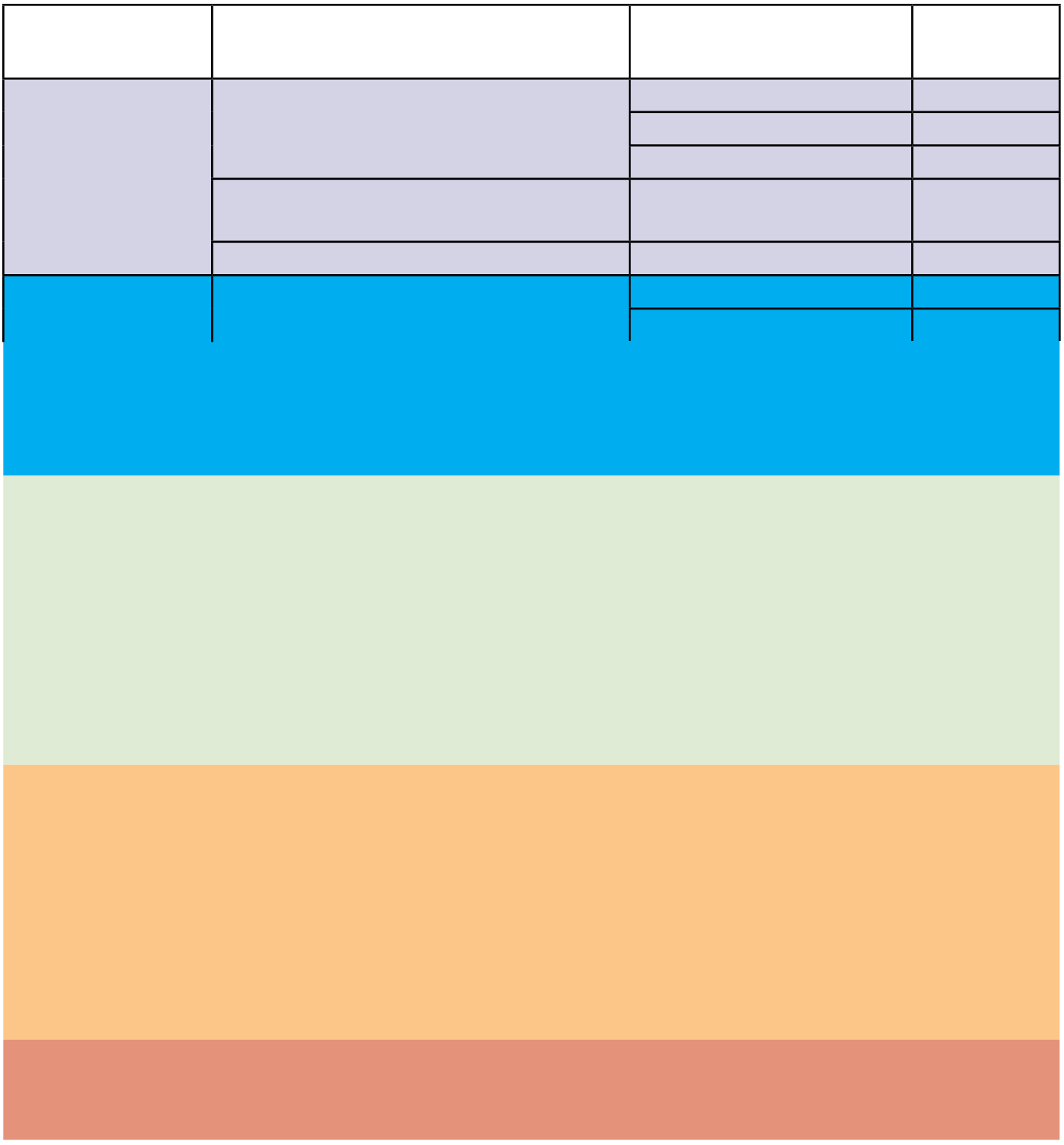
Domains, Clusters, Standards, and Sequencing in Instruction and Assessment

The Grades 3–8 Mathematics Tests will measure the NYS Next Generation Mathematics Learning Standards

Grade 3



Grade 4



Grade 3 Post-Test Standards Assessed in Grade 4

7KH WDEOH EHORZ VKRZV WKH *UDGH SRVW WHVW VWDQGDU
0DWKHPDWLFV $VVHVVPHQW)RU PRUH LQIRUPDWLRQ DERXW
Standards* UDGHV ± 3RVW WHVW 6WDQGDUGV 'HYHORSPHQW SOH
curriculum-instruction/next-generation-mathematics-learning-standards-grades-3-8-post-test-recommendations)

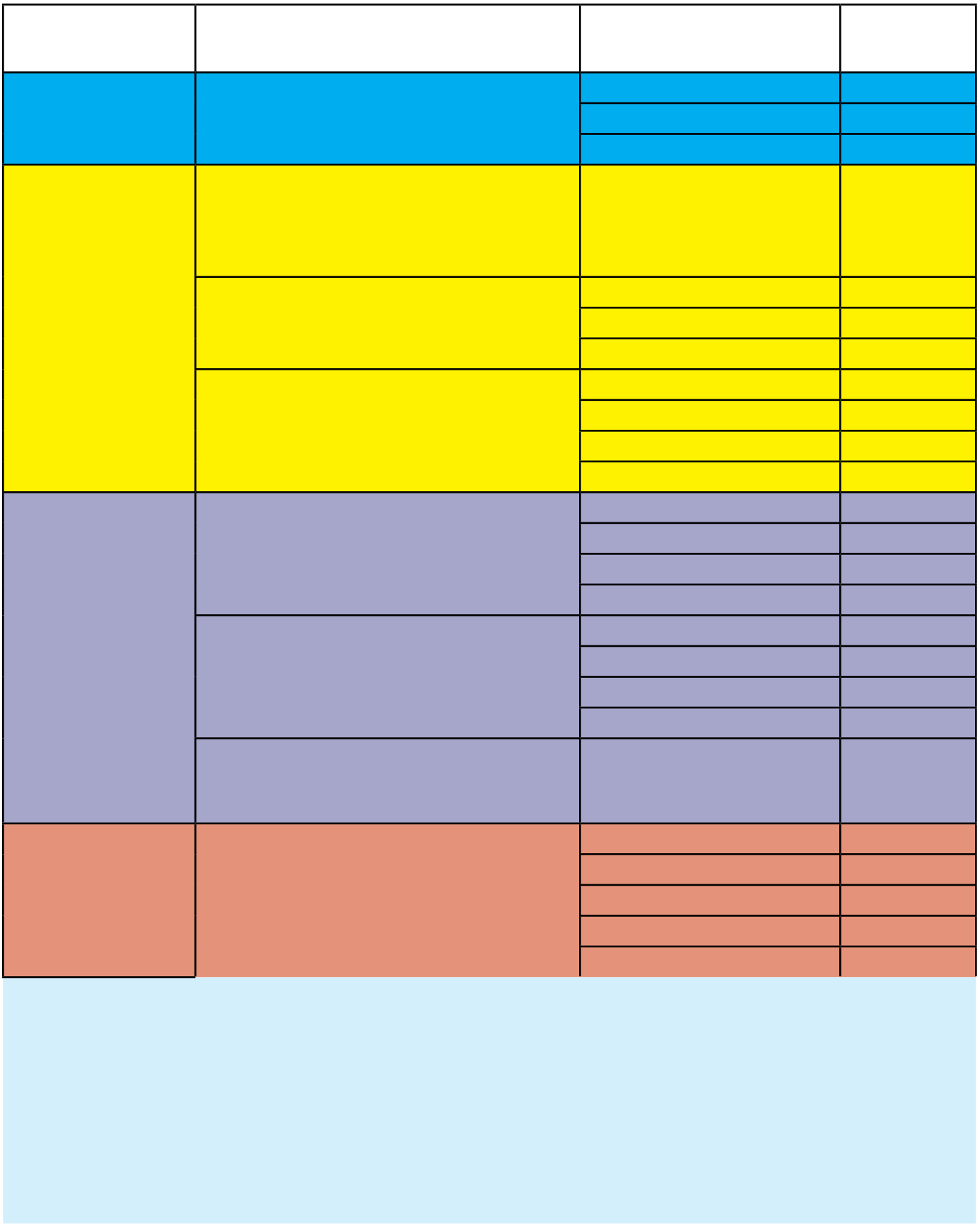
Domain	Cluster	Standard(s)
Measurement and Data	Represent and interpret data.	NY-3.MD.3
		1 < 0 '
	Geometric measurement: recognize perimeter as a DWWULEXWH RI SODQH between UHNY-3.MD.8a, 8b linear and area measures.
Geometry	Reason with shapes and their attributes.	1 < *

Grade 4 Post-Test Standards Assessed in Grade 5

7KH WDEOH EHORZ VKRZV WKH *UDGH SRVW WHVW VWDQGDU
0DWKHPDWLFV $VVHVVPHQW)RU PRUH LQIRUPDWLRQ DERXW
Standards* U D G H V ± 3 R V W W H V W 6 W D Q G D U G V ' H Y L O D W L R Q V S O H
curriculum-instruction/next-generation-mathematics-learning-standards-grades-3-8-post-test-recommendations)

Domain	Cluster	Standard(s)
Number and Operations—Fractions	Understand decimal notation for fractions, and compare decimal fractions.	1 < 1)
		1 < 1)
		1 < 1)
Measurement and Data	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.	1 < 0 '
		1 < 0 ' D E

Grade 6



Grade 5 Post-Test Standards Assessed in Grade 6

7KH WDEOH EHORZ VKRZV WKH *UDGH SRVW WHVW VWDQGDU
0DWKHPDWLFV $VVHVVPHQW)RU PRUH LQIRUPDWLRQ DERXW
Standards* U D G H V ± 3 R V W W H V W 6 W D Q G D U G V ' H Y H O R S H G R Q
curriculum-instruction/next-generation-mathematics-learning-standards-grades-3-8-post-test-recommendations)

Domain	Cluster	Standard(s)
Operations and $ O J H E U D L F 7K L Q N L Q J	Write and interpret numerical expressions.	1 < 2 $
		1 < 2 $
	Analyze patterns and relationships.	1 < 2 $
Geometry	Graph points on the coordinate plane to solve real-world and mathematical problems.	1 < *
		1 < *

Grade 8

Domain	Cluster	Standard(s)	Post Standard

Grade 7 Post-Test Standards Assessed in Grade 8

7KH WDEOH EHORZ VKRZV WKH *UDGH SRVW WHVW VWDQGDU
0DWKHPDWLFV $VVHVVPHQW)RU PRUH LQIRUPDWLRQ DERXW
Standards* U D G H V ± 3 R V W W H V W 6 W D Q G D U G V ' H Y J O D W L R Q V S O H
curriculum-instruction/next-generation-mathematics-learning-standards-grades-3-8-post-test-recommendations)

Domain	Cluster	Standard(s)
Geometry	Draw, construct, and describe geometrical ¿ J X U H V D Q G G H V F U L E H W K H U H O D W L R Q V K L S V them.	1 < * NY-7.G.3
	Solve real-life and mathematical problems involving angle measure, area, surface area, and volume.	1 < *
		1 < *
		NY-7.G.6

Testing Sessions

The Grades 3–8 Mathematics Tests consist of

Test Design

In Grades 3–8, students are required to apply mathematical understandings and mathematical practice

Test Blueprint

$OO TXHVWLRQV RQ WKH *UDGHV ± 0DWKHPDWLFV 7HVWV PH

Domain-Level Test Blueprint—Percent Ranges for Grade 7 Test				
Ratios and				

Question Formats

7KH *UDGHV ± 0DWKHPDWLFV 7HVWV FRQWDLQ FUHGLW PXO
TXHVWLRQV FUHGLW FRQVWUXFWHG UHVSRQVH TXHVWLRQV
choice questions, students select the correct response from four answer choices. For the constructed-respo
TXHVWLRQV VWXGHQWV ZULWH DQ DQVZHU WR DQ RSHQ HQG
some cases, they may be required to provide a written explanation for how they arrived at their answers
6RPH WHVW TXHVWLRQV WDUJHW PRUH WKDQ RQH VWDQGDUG
TXHVWLRQV DVVHVV 6HSWHPEHU WR $SULO 0D\ VWDQGDUGV L
grades (i.e., post-test standards).

Multiple-Choice Questions

0XOWLSOH FKRLFH TXHVWLRQV ZLOO PDLQO\ EH XVHG WR DV
0DQ\ PXOWLSOH FKRLFH TXHVWLRQV UHTXLUH VWXGHQWV WR
TXHVWLRQV DUH OLQNHG WR PRUH WKDQ RQH VWDQGDUG GU
and concepts. Within answer choices, distractors will all be based on plausible missteps.

1-Credit Constructed-Response Questions

FUHGLW FRQVWUXFWHG UHVSRQVH TXHVWLRQV UHTXLUH VW
DQVZHU 7KH FUHGLW FRQVWUXFWHG UHVSRQVH TXHVWLRQV
VNLOOV DV ZHOO DV FRQFHSWXDO XQGHUVWDQGLQJ DQG DSS
WKHLU ¿QDO DQVZHU RQO\ WKH ¿QDO DQVZHU ZLOO EH VFRU

2-Credit Constructed-Response Questions

FUHGLW FRQVWUXFWHG UHVSRQVH TXHVWLRQV UHTXLUH VW
their answer 7KH FUHGLW FRQVWUXFWHG UHVSRQVH TXHVWLRQV
RI PXOWLSOH PDWKHPDWLFV VNLOOV DQG UHDO ZRUOG DSS

Mathematics Rubrics and Scoring Policies

The Grades 3–8 Mathematics Tests will use the rubrics and scoring policies as shown in this guide.

1-Credit Constructed-Response Rubric

1 Credit	$ FUHGLW UHVSRQVH LV D correct answer to the question which indicates a thorough understanding of mathematical concepts and/or procedures.
0 Credits*	$ FUHGLW UHVSRQVH LV LQFRUUHFW LUUHOHYDQW

&RQGLWLRQ &RGH $ LV DSSOLHG ZKHQHYHU D VWXGHQW ZULWHV D FRQVWUXFWHG UHVSRQVH TXHVWLRQ LQ WKDW VHVVLRQ FRPS

2-Credit Constructed-Response Holistic Rubric

2 Credits	$ FUHGLW UHVSRQVH LQFOXGHV WKH FRUUHFW VR WKRURXJK XQGHUVWDQGLQJ RI WKH PDWKHPDWLFDO This response • LQGLFDWHV WKDW WKH VWXGHQW KDV FRPSOHWH

3-Credit Constructed-Response Holistic Rubric

3 Credits	

The following scoring policies must be applied while scoring the mathematics tests for all Grades 3–8. The rubrics for the constructed-response questions are designed to provide a systematic, consistent meth for awarding credit. Each response must be rated carefully using the teacher's professional judgmen

2- and 3-Credit Constructed-Response Mathematics Scoring Policies

,I D VWXGHQW VKRZV WKH ZRUN LQ RWKHU WKDQ D GHVL
ZRUN VKRXOG VWLOO EH VFRUHG

Mathematics Tools

Why Mathematics Tools?

Reference Sheets

(DFK VWXGHQW WHVWLQJ LQ *UDGHV ± ZLOO EH SURYLGHG Z
XVH GXULQJ ERWK 6HVVLRQ DQG 6HVVLRQ ,W LV UHFRPP
students opportunities during classroom instruction to gain familiarity with the grade-level reference sheet.

Note: Due to certain standards' expectations for Grades 7–8, conversion factors that go across measurement V\VWHPV DUH DOVR SURYLGHG 6WXGHQWV VKRXOG XWLOL]H
even though some of the conversion factors shown may not be exact.

Grade 5 Mathematics Reference Sheet

CONVERSIONS

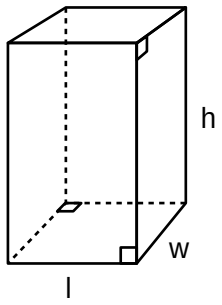
1 yard = 3 feet
1 mile = 5,280 feet
1 mile = 1,760 yards

1 cup = 8 uid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 liter = 1,000 milliliters

1 pound = 16 ounces
1 ton = 2,000 pounds
1 kilogram = 1,000 grams

FORMULAS AND FIGURES

Right Rectangular Prism



V l × w × h
V B × h

Grade 6 Mathematics Reference Sheet

CONVERSIONS

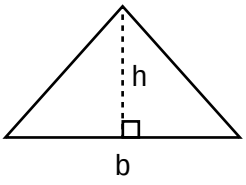
1 yard = 3 feet
1 mile = 5,280 feet

1 cup = 8 uid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts
1 liter = 1,000 milliliters

1 pound = 16 ounces
1 ton = 2,000 pounds
1 kilogram = 1,000 grams

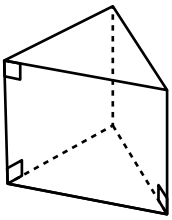
FORMULAS AND FIGURES

Triangle

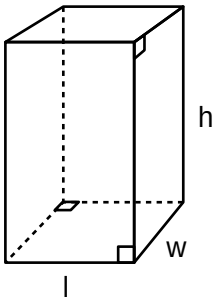


$A \quad \frac{1}{2}bh$

Right Triangular Prism

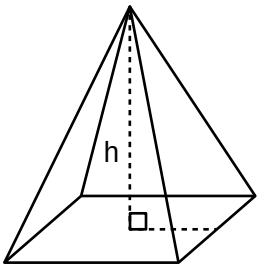


Right Rectangular Prism



$V \quad lwh$
$V \quad Bh$

Right Rectangular Pyramid



Grade 7 Mathematics Reference Sheet

CONVERSIONS

1 yard = 3 feet
1 mile = 5,280 feet

1 cup = 8 uid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

1 pound = 16 ounces
1 ton = 2,000 pounds

CONVERSIONS ACROSS MEASUREMENT SYSTEMS

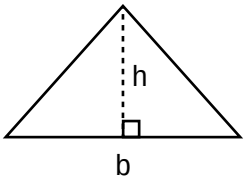
1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 1.609 kilometers
1 kilometer = 0.6214 mile

1 gallon = 3.785 liters
1 liter = 0.2642 gallon

1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds

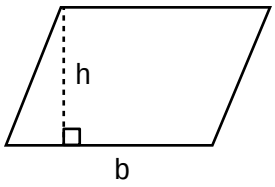
FORMULAS AND FIGURES

Triangle



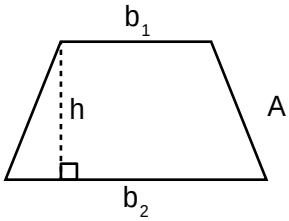
$A = \frac{1}{2}bh$

Parallelogram



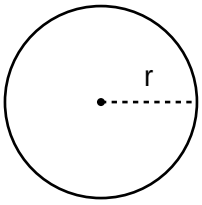
$A = bh$

Trapezoid



$A = \frac{1}{2}h(b_1 + b_2)$

Circle



$C = 2\pi r$
$C = \pi d$
$A = \pi r^2$

Grade 8 Mathematics Reference Sheet

CONVERSIONS

1 yard = 3 feet
1 mile = 5,280 feet

1 cup = 8 uid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts

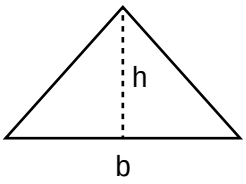
1 pound = 16 ounces
1 ton = 2,000 pounds

CONVERSIONS ACROSS MEASUREMENT SYSTEMS

1 inch = 2.54 centimeters
1 meter = 39.37 inches
1 mile = 1.609 kilometers
1 kilometer = 0.6214 mile

1 gallon = 3.785 liters
1 liter = 0.2642 gallon

1 pound = 0.454 kilogram
1 kilogram = 2.2 pounds

FORMULAS AND FIGURES

Triangle