MATHEMATICS QUESTION TASK CARDS

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M-DCPS

STRAND A Q-CARD #1
Number Sense, Concepts, and Operations

Design a question that requires students to understand the different ways numbers are represented and used in the real-world.

- *What was the rationale for the computated method?*
- *What is the .....of ..... ?*
- *What are all the ways ..... ?*
- *Explain how you solved this problem.*
- *Draw a picture to explain your answer.*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.A.1.2.1 **Benchmark:** MA.A.1.4.1
Benchmark: MA.A.1.3.1

M-DCPS

STRAND A Q-CARD #2
Number Sense, Concepts, and Operations

Design a question that requires students to understand number systems.

- *What was the rationale for the computated method?*
- *How might things have changed if .....was reversed? rearranged? taken apart?*
- *How many different .....?*
- *Explain what ..... are in .....?*
- *Estimate your total ..... and compare your answer.*
- *Explain how you solved the problem.*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.A.2.2.1 **Benchmark:** MA.A.2.4.1
Benchmark: MA.A.2.3.1

M-DCPS

STRAND A Q-CARD #3
Number Sense, Concepts, and Operations

Design a question that requires students to understand the effects of operations on numbers and the relationships among these operations, selects appropriate operations, and computes for problem solving.

- *What was the rationale for the computated method?*
- *How did you determine .....?*
- *What are all the ways ....?*
- *Draw a picture to explain your answer.*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.A.3.2.1 **Benchmark:** MA.A.3.4.1
Benchmark: MA.A.3.3.1

M-DCPS

STRAND A Q-CARD #4
Number Sense, Concepts, and Operations

Design a question that requires students to understand estimation in problem solving and computation.

- *What was the rationale for the computated method?*
- *What would happen if ..... ?*
- *How can you make the problem simpler to solve?*
- *Estimate your total ..... and compare your answer.*
- *Is your answer valid and why?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.A.4.2.1 **Benchmark:** MA.A.4.4.1
Benchmark: MA.A.4.3.1

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M-DCPS

STRAND A Q-CARD #5
Number Sense, Concepts, and Operations

Design a question that requires students to understand and apply theories related to numbers.

- *What was the rationale for the computated method?*
- *Is your answer reasonable?*
- *How different is ..... from .....?*
- *Write an expression or equation that could be used to prove your solution.*
- *What are all the ways.....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.A.5.2.1 **Benchmark:** MA.A.5.4.1
Benchmark: MA.A.5.3.1

M-DCPS

STRAND B Q-CARD #1
Measurement

Design a question that requires students to understand the need to measure quantities in the real-world and use the measures to solve problems.

- *Explain what .....is in .....?*
- *Which would be most appropriate unit of measurement? Explain.*
- *Which determines capacity and effective instrument for measuring capacity in a given context?*
- *What relationship does ....have to .....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.B.1.2.1 **Benchmark:** MA.B.1.4.1
Benchmark: MA.B.1.3.1

M-DCPS

STRAND B Q-CARD #2
Measurement

Design a question that requires students to compare, contrast, and convert systems of measurement (both standard/nonstandard and metric/customary)

- *What are all the ways ..... ?*
- *Which would be most appropriate unit of measurement? Explain.*
- *Which unit of measurement would you use, standard or nonstandard? Explain.*
- *How did you determine.....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.B.2.2.1 **Benchmark:** MA.B.2.4.1
Benchmark: MA.B.2.3.1

M-DCPS

STRAND B Q-CARD #3
Measurement

Design a question that requires students to estimate measurements in real-world problem situations.

- *Explain how you solved your solution.*
- *In what other situation could .....?*
- *Is your answer reasonable?*
- *Which would be most appropriate unit of measurement? Explain.*
- *Estimate your total and compare your answer.*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.B.3.2.1 **Benchmark:** MA.B.3.4.1
Benchmark: MA.B.3.3.1

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M-DCPS

STRAND B Q-CARD #4
Measurement

Design a question that requires students to understand the selection and use of appropriate units and instruments for measurement to achieve the degree of precision and accuracy required in real-world situations.

- *What would happen if we put ..... to other uses?*
- *What are all the ways ..... ?*
- *How would ..... have been different if it were smaller? larger? stronger? sideways? upside-down? a different color?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.B.4.2.1 **Benchmark:** MA.B.4.4.1
Benchmark: MA.B.4.3.1

M-DCPS

STRAND C Q-CARD #2
Geometry and Spatial Sense

Design a question that requires students to visualize and illustrate ways in which shapes can be combined, subdivided, and changed.

- *Explain why your line demonstrates symmetry?*
- *Explain why you completed .... the way you did.*
- *What if ..... were .....?*
- *How would ..... have been different if it were smaller? larger? stronger? sideways? upside-down? a different color?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.C.2.2.1 **Benchmark:** MA.C.2.4.1
Benchmark: MA.C.2.3.1

M-DCPS

STRAND C Q-CARD #1
Geometry and Spatial Sense

Design a question that requires students to describe, draw, identify, and analyze two- and three-dimensional shapes.

- *What was the rationale for the computated method?*
- *Compare and contrast shapes noting specific characteristics.*
- *How is ..... like .....?*
- *Draw a picture to explain your answer.*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.C.1.2.1 **Benchmark:** MA.C.1.4.1
Benchmark: MA.C.1.3.1

M-DCPS

STRAND C Q-CARD #3
Geometry and Spatial Sense

Design a question that requires students to understand the use of coordinate geometry to locate objects in both two and three dimensions and to describe objects algebraically.

- *What would happen if ..... ?*
- *How come .....?*
- *Can you construct a model that would change.....?*
- *Can you illustrate what is happening?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.C.3.2.1 **Benchmark:** MA.C.3.4.1
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M-DCPS

STRAND C Q-CARD #3
Geometry and Spatial Sense

Design a question that requires students to understand the use of coordinate geometry to locate objects in both two and three dimensions and to describe objects algebraically.

- *How would you determine the location of ..... ?*
- *How could you tessellate (flip, slide, turn) the figure?*
- *Can you construct a model that would change.....?*
- *What facts would you select to show....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.C.3.2.2
Benchmark: MA.C.3.3.2
Benchmark: MA.C.3.4.2

M-DCPS

STRAND D Q-CARD #2
Algebraic Thinking

Design a question that requires students to use expressions, equations, inequalities, graphs, and formulas to represent and interpret situations.

- *Write an expression or equation that could be used to prove your solution.*
- *What would happen if we took something away from ..... and replaced it with .....?*
- *Which expression shows .....? Explain*
- *Explain why you completed .... the way you did.*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.D.2.2.1
Benchmark: MA.D.2.3.1
Benchmark: MA.D.2.4.1

M-DCPS

STRAND D Q-CARD #1
Algebraic Thinking

Design a question that requires students to describe, analyze, and generalize a variety of patterns, relations, and functions.

- *Which way would you choose? Why?*
- *Why did you choose that graph and not the others?*
- *Why is a ..... graph useful to show the kind of data given in a chart?*
- *Can you guess my "rule" and explain?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.D.1.2.1
Benchmark: MA.D.1.3.1
Benchmark: MA.D.1.4.1

M-DCPS

STRAND E Q-CARD #1
Data Analysis and Probability

Design a question that requires students to understand and use the tools of data analysis for managing information.

- *What if ..... were ..... ?*
- *What would happen if ..... ?*
- *Summarize your findings.*
- *How might things have changed if.....was reversed? rearranged? taken apart?*
- *How did you determine.....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.E.1.2.1
Benchmark: MA.E.1.3.1
Benchmark: MA.E.1.4.1

MATHEMATICS QUESTION TASK CARDS

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M-DCPS

STRAND E Q-CARD #1
Data Analysis and Probability

Design a question that requires students to understand and use the tools of data analysis for managing information.

- *What are the parts of..... ?*
- *How is ....related to .....?*
- *How would you categorize .....?*
- *What do you think.....?*
- *What ideas justify.....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.E.1.2.3
Benchmark: MA.E.1.3.3
Benchmark: MA.E.1.4.3

M-DCPS

STRAND E Q-CARD #2
Data Analysis and Probability

Design a question that requires students to identify patterns and make predictions from an orderly display of data using concepts of probability and statistics.

- *Why do you think.....?*
- *What would result if.....?*
- *Can you explain what is happening....what is meant.....?*
- *How would you describe.....?*
- *What facts would you select to show.....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.E.2.2.2
Benchmark: MA.E.2.3.2
Benchmark: MA.E.2.4.2

M-DCPS

STRAND E Q-CARD #2
Data Analysis and Probability

Design a question that requires students to identify patterns and make predictions from an orderly display of data using concepts of probability and statistics.

- *What is the probability of selecting .....?*
- *How would you organize .....to show .....?*
- *Explain why you completed.....that way.*
- *How would you interpret.....?*
- *What conclusions can you make from your graph (data)?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.E.2.2.1
Benchmark: MA.E.2.3.1
Benchmark: MA.E.2.4.1

M-DCPS

STRAND E Q-CARD #3
Data Analysis and Probability

Design a question that requires students to use statistical methods to make inferences and valid arguments about real-world situations.

- *What conclusions can you interpret from your graph (data)?*
- *Is your answer reasonable?*
- *Explain the method you used.*
- *What would happen if.....?*

* *Support your answer with relevant details, facts, statistics or other information from the problem.*

Benchmark: MA.E.3.2.1
Benchmark: MA.E.3.3.1
Benchmark: MA.E.3.4.1