



DOWNLOAD PRESENTATION
www.tinyurl.com/ggeduavengers
 TWITTER
[@maverikedu12](https://twitter.com/maverikedu12)




INQUIRING MINDS


*Teaching and Learning with
GOOD QUESTIONS*

Erik M. Francis, M.Ed., M.S.
erik@maverikeducation.com
www.maverikeducation.com



© Maverik Education LLC, 2020

1



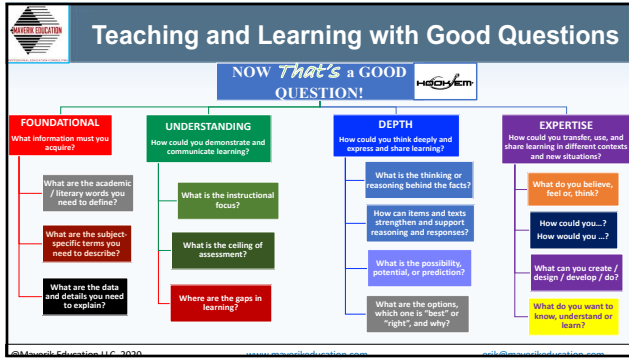
What does a good question do?

- ✓ Stimulates deeper thinking.
- ✓ Deepens knowledge, understanding, and awareness.
- ✓ Expands knowledge and extends thinking.
- ✓ Piques curiosity, imagination, interest, and wonder.
- ✓ Express and share student learning in their own unique way.

5

HOCHEM	Universal	What are the broad or grand ideas, issues, themes, or topics?
	Overarching	What are the core ideas and enduring understandings of the subject area?
	Topical	What is the instructional focus and summative assessment of the unit?
	Driving	What can you create, design, develop or do that reflects and represents the depth and extent of your talent and thinking?
FOUNDATIONAL	Factual	What is the academic vocabulary that needs to be defined? What is the subject-specific terminology that needs to be described? What are the data and details that need to be explained?
UNDERSTANDING	Analytical	How and why can concepts and procedures be used to answer a question, address a problem, accomplish a task, or analyze a text or topic? How can ideas and information be categorized, characterized, or classified?
	DEPTH	What are the causes, connections, or consequences? What is the rationale, reasons, relationships, or results? What are the alternatives? What are the options? What are the possibilities?
EXPERTISE	Argumentative	Which option is the best, most effective, or most appropriate and why? How should circumstances, issues, or situations be addressed or handled?
	Affective	What are your beliefs, feelings, or thoughts about a text or topic? How could you or how would you use what you have learned?
	Personal	What do you want to know, understand, or learn about the text or topic being taught?

6



8

Connect to the Real World.

HOOKEM!

- What's interesting about the concept or content?
- What's little known or unknown about the concept or content?
- What is the real-world connection to what you are teaching?
- How does the text or topic connect to your students' interests?
- What do the standards, the curriculum, and / or the textbook **NOT** tell us about the concept or content?
- How could you make the teaching and learning experience educational and enjoyable for your students **AND** you?

9

NOW That's a GOOD QUESTION!

HOOKEM!

How could change be scary but good?
 How could good things happen when you try new things?
 Why should we be careful not to judge by appearances?

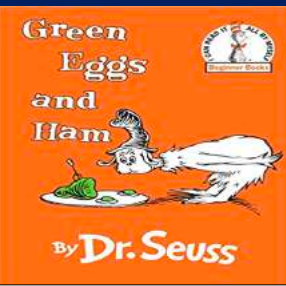
Green Eggs and Ham
 By **Dr. Seuss**

10

DEPTH

How does Green Eggs and Ham express the following ideas?

- Change be scary but good
- When you try new things, good things could happen.
- Don't judge by appearances.



@Maverik Education LLC, 2020 www.maverikeducation.com erik@maverikeducation.com

11

NOW *That's* a GOOD QUESTION!

What is a hero?

What makes a hero fall from grace?

What causes a hero to fall from grace?

How could a hero redeem themselves if they fall from grace - or could they?




@Maverik Education LLC, 2020 www.maverikeducation.com erik@maverikeducation.com

12

DEPTH

How are the Brutus, Macbeth, and Anakin Skywalker examples of Shakespearean tragic heroes and what are the similarities in the following?

- their temptation
- their fall from grace
- their distrust and betrayal of their allies
- the consequences for their greed and ambition
- the role their wives play



@Maverik Education LLC, 2020 www.maverikeducation.com erik@maverikeducation.com

13

Who was the first President of the United States?

14

DEPTH

Should George Washington continue to be recognized as the first President of the United States or should the eight Presidents of the United States appointed under the Articles of Confederation also be acknowledged?

15

UNDERSTANDING

How did the weaknesses of the Articles of Confederation lead to the writing of the United States Constitution?

- What were the successes and failures of the Articles of Confederation?
- Why did many felt a new plan of government was needed?
- How did the United States Constitution attempted to address the weaknesses of the Articles?

17

How could multi-digit numbers be multiplied using the standard algorithm?

abc
x def

$[abc \times (d \times 100)] + [abc \times (e \times 10)] + [abc \times (f \times 1)]$

d x 100 e x 10 f x 1

a x 100
b x 10
c x 1

18

DEPTH

abc
x def

$[abc \times (d \times 100)] + [abc \times (e \times 10)] + [abc \times (f \times 1)]$

d x 100 e x 10 f x 1

a x 100
b x 10
c x 1

19

DRIVING QUESTION

How could you analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects?

21

EXPERTISE	
How could you	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. [Clarification Statement: Emphasis is on how some natural hazards, such as volcanic eruptions and severe weather, are preceded by phenomena that allow for reliable predictions, but others, such as earthquakes, occur suddenly and with no notice, and thus are not yet predictable. Examples of natural hazards can be taken from interior processes (such as earthquakes and volcanic eruptions), surface processes (such as mass wasting and tsunamis), or severe weather events (such as hurricanes, tornadoes, and floods). Examples of data can include the locations, magnitudes, and frequencies of the natural hazards. Examples of technologies can be global (such as satellite systems to monitor hurricanes or forest fires) or local (such as building basements in tornado-prone regions or reservoirs to mitigate droughts).]
GOOD DRIVING QUESTION	
How could you analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects?	

22

EXPERTISE	
DRIVING QUESTION STEM	
How could you	write opinion pieces on topics or texts, supporting a point of view with reasons and information?
How could you	compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history?
How could you	add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators?
How could you	compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions)?
How could you	construct a scientific explanation based on evidence for how the uneven distributions of earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes?

24

The infographic is titled "Teaching and Learning with Good Questions" and features the "Maverik Education" logo. It includes a section for "Making Connections" with a hand holding a paint palette and a "WHAT IF...?" box. Below this, it asks "THIS OR THAT?" with two colored circles. The main content is divided into two columns: "DEPTH" and "EXPERTISE".

DEPTH
How could you think deeply and express and share learning?

- What is the thinking or reasoning behind the facts?
- How can items and texts strengthen and support reasoning and responses?
- What is the possibility, potential, or prediction?
- What are the options, which one is "best" or "right", and why?

EXPERTISE
How could you transfer, use, and share learning in different contexts and new situations?

- What do you believe, feel or think?
- How could you...? How would you...?
- What can you create / design / develop / do?
- What do you want to know, understand or learn?

© Maverik Education LLC, 2019

26

DRIVING QUESTION How could you analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects?

What if a giant earthquake struck a geographic location?

Will "The Big One" in California be caused by the San Andreas Fault or the Mendocino Fault?

©Maverik Education LLC, 2020

27

DEPTH

How can operations be performed with multi-digit numbers?

MATH.CONTENT.5.NBT.B.5
How can the standard algorithm be used to multiply multi-digit whole numbers fluently?
How could multi-digit whole numbers be multiplied fluently using the standard algorithm?

358 x 249 = 249 x 358

$[abc \times (d \times 100)] + [abc \times (e \times 10)] + [abc \times (f \times 1)]$

abc
x def

	d x 100	e x 10	f x 1	
a x 100				
b x 10				
c x 1				

©Maverik Education LLC, 2020

28

What if you reorganized these numbers?
How could you provide this number sentence is true?

How can operations be performed with multi-digit numbers?

MATH.CONTENT.5.NBT.B.5
How can the standard algorithm be used to multiply multi-digit whole numbers fluently?
How could multi-digit whole numbers be multiplied fluently using the standard algorithm?

358 x 249 = 249 x 358


$[abc \times (d \times 100)] + [abc \times (e \times 10)] + [abc \times (f \times 1)]$

abc
x def


	d x 100	e x 10	f x 1	
a x 100				
b x 10				
c x 1				

©Maverik Education LLC, 2020


29

 FOUNDATIONAL		
<p>Students understand how the failure of the Articles of Confederation led to the writing of the United States Constitution.</p> <ul style="list-style-type: none"> Students will investigate the successes and failures of the Articles of Confederation, determine why many felt a new plan of government was needed, and explain how the United States Constitution attempted to address the weaknesses of the Articles. 		
ACADEMIC VOCABULARY	SUBJECT-SPECIFIC TERMINOLOGY	DATA AND DETAILS
<p>What does it mean to investigate?</p> <p>What does it mean to determine?</p> <p>What does it mean to lead?</p> <p>What does it mean to explain?</p> <p>What does it mean to attempt?</p> <p>What does it mean to address?</p> <p>What is success?</p> <p>What is failure?</p> <p>What is weakness?</p>	<p>What is an article?</p> <p>What is a confederation?</p> <p>What is a government?</p> <p>What is a plan of government?</p> <p>What is a constitution?</p> <p>What is a federalist?</p> <p>What is an anti-federalist?</p>	<p>What were the Articles of Confederation?</p> <p>Who wrote the Articles of Confederation?</p> <p>When was the Articles of Confederation written and approved?</p> <p>Who were the many who felt a new plan of government was needed?</p> <p>What is the United States Constitution?</p> <p>What is a Federalist?</p> <p>What is an Anti-Federalist?</p>

33

 FOUNDATIONAL		
<p>Perform operations with multi-digit whole numbers.</p> <p>.MATH.CONTENT.S.NBT.B.5</p> <p>Fluently multiply multi-digit whole numbers using the standard algorithm.</p> <p style="text-align: center;">542 x 398 = 215, 716</p>		
ACADEMIC VOCABULARY	SUBJECT-SPECIFIC TERMINOLOGY	DATA AND DETAILS
<p>What does it mean to perform?</p> <p>What is an operation?</p> <p>What does multi mean?</p> <p>What is a digit?</p> <p>What does fluently mean?</p> <p>What is a standard?</p>	<p>What is a mathematical operation?</p> <p>What is a digit in mathematics?</p> <p>What is a whole number?</p> <p>What is multiplication?</p> <p>What does it mean to multiply in math?</p> <p>What is a multi-digit whole number?</p> <p>What is an algorithm?</p> <p>What is a standard algorithm?</p>	<p>What are the four operations of arithmetic?</p> <p>What is the standard algorithm for multiplication?</p> <p>What are the values of the number in a multi-digit number and where are they located?</p> <p>Which part of the standard algorithm for multiplication indicates how many times a number will be multiplied?</p> <p>Which operations are performed when multiplying multi-digit whole numbers?</p>

34

 FOUNDATIONAL		
<p>MS-ESS3-2. Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. [Clarification Statement: Emphasis is on how some natural hazards, such as volcanic eruptions and severe weather, are preceded by phenomena that allow for reliable predictions, but others, such as earthquakes, occur suddenly and with no notice, and thus are not yet predictable. Examples of natural hazards can be taken from interior processes (such as earthquakes and volcanic eruptions), surface processes (such as mass wasting and tsunamis), or severe weather events (such as hurricanes, tornadoes, and floods). Examples of data can include the locations, magnitudes, and frequencies of the natural hazards. Examples of technologies can be global (such as satellite systems to monitor hurricanes or forest fires) or local (such as building basements in tornado-prone regions or reservoirs to mitigate droughts).]</p>		
ACADEMIC VOCABULARY	SUBJECT-SPECIFIC TERMINOLOGY	DATA AND DETAILS
<p>What does it mean to analyze?</p> <p>What does it mean to interpret?</p> <p>What does natural mean?</p> <p>What is a hazard?</p> <p>What does it mean to forecast?</p> <p>What does catastrophic mean?</p> <p>What does it mean to inform?</p> <p>What does development mean?</p> <p>What does it mean to mitigate?</p> <p>What is an effect?</p> <p>What does severe mean?</p> <p>What does to precede mean?</p> <p>What does it mean to be reliable?</p> <p>What does interior mean?</p> <p>What is a global reservoir process?</p>	<p>What is data?</p> <p>What is a natural hazard?</p> <p>What is a catastrophic event?</p> <p>What is a volcanic eruption?</p> <p>What is a scientific phenomena?</p> <p>What is an interior process?</p> <p>What is a surface process?</p> <p>What are weather events?</p> <p>What is a tsunami?</p> <p>What is mass wasting?</p> <p>What is a hurricane?</p> <p>What is a tornado?</p> <p>What is a flood?</p> <p>What is magnitude?</p> <p>What is frequency?</p>	<p>What is an example of a natural hazard?</p> <p>What is an example of a catastrophic event?</p> <p>What is an example of an interior process that is or causes a natural hazard?</p> <p>What is an example of a surface process is or causes a natural hazard?</p> <p>What is an example of a weather event is or causes a natural hazard?</p>

35

UNDERSTANDING

Perform **operations** with multi-digit whole numbers.

.MATH.CONTENT.5.NBT.B.5
Fluently **multiply** multi-digit whole numbers using the standard algorithm.

$542 \times 398 = 215,716$

Good Question Stem	Helping / Linking Verb	BEHAVIOR		CONDITION Context (Webb's DOK)
		Subject Matter (Text / Topic)	Be + Cognitive Action Verb (Bloom's)	
How	could	operations	be performed	with multi-digit whole numbers ?
How	could	multi-digit whole numbers	be multiplied	fluently using the standard algorithm ?
How	can	the standard algorithm	be used	to multiply multi-digit whole numbers ?

37

UNDERSTANDING

Perform operations with multi-digit whole numbers.

.MATH.CONTENT.5.NBT.B.5
Fluently multiply multi-digit whole numbers using the standard algorithm.

$542 \times 398 = 215,716$

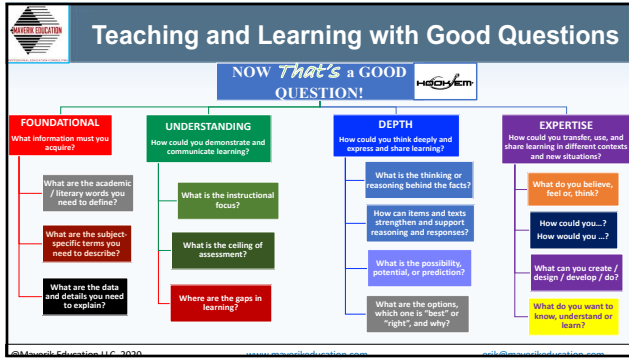
Educational Objective <i>Do this.</i>	Enduring Understanding <i>Make a statement.</i>	Essential Question <i>Now that's a good question!</i>
Perform operations with multi-digit numbers.	Operations with multi-digit numbers can be performed.	How can operations with multi-digit numbers be performed? How can the standard algorithm be used to multiply multi-digit whole numbers?
Fluently multiply multi-digit numbers using the standard algorithm.	Multi-digit numbers can be multiplied fluently using the standard algorithm.	How could multi-digit numbers be multiplied using the standard algorithm?

38

UNDERSTANDING

Educational Objective <i>Demonstrate or do this</i>	Enduring Understanding <i>Make a statement.</i>	Essential Question <i>Now that's a good question!</i>
Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.	Brutus from <u>The Tragedy of Julius Caesar</u> and Macbeth from <u>Macbeth</u> are both examples of complex characters who are tempted with greed and ambition, encouraged by their wives, fall from grace, distrust and turn on their allies, and suffer the consequences for their greed and ambition in a similar fashion.	How are Brutus from <u>The Tragedy of Julius Caesar</u> and Macbeth from <u>Macbeth</u> complex characters and what are the similarities in the following? <ul style="list-style-type: none"> • their temptation • their encouragement from their spouse • their fall from grace • their distrust and betrayal of their allies • the consequences for their greed and ambition

39



40

What does a good question do?

- ✓ Stimulates deeper thinking.
- ✓ Deepens knowledge, understanding, and awareness.
- ✓ Expands knowledge and extends thinking.
- ✓ Piques curiosity, imagination, interest, and wonder.
- ✓ Express and share student learning in their own unique way.

41

DOWNLOAD PRESENTATION

TWITTER @maverikedu12

MAVERIK EDUCATION LLC
 PROFESSIONAL DEVELOPMENT and CONSULTATION
 on
 TEACHING AND LEARNING for
 COGNITIVE RIGOR and COLLEGE AND CAREER READINESS

Eric M. Francis, M.Ed., M.S. (602) 686-1396
 erik@maverikeducation.com
 www.maverikeducation.com

© Maverik Education LLC, 2020

42
