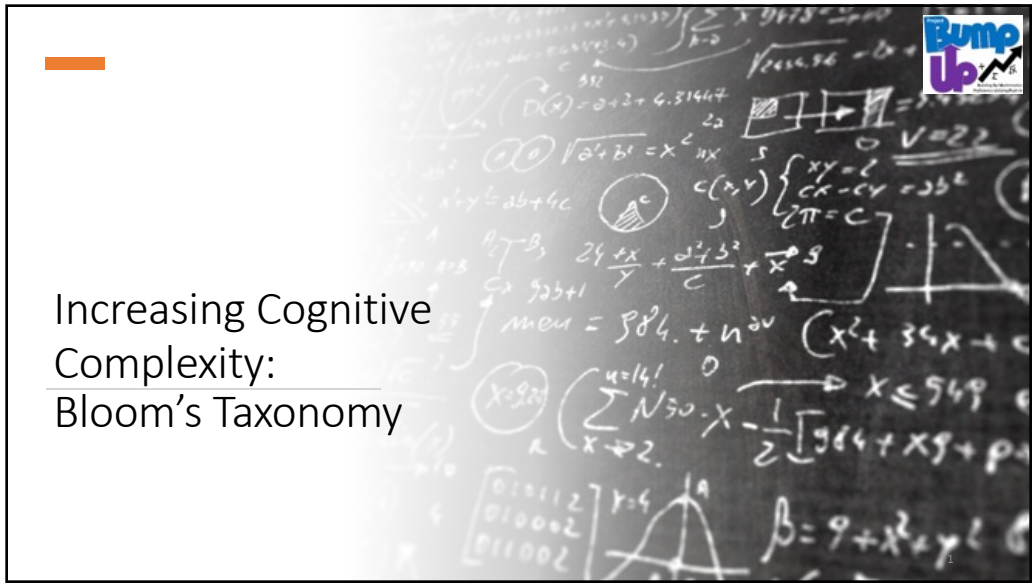

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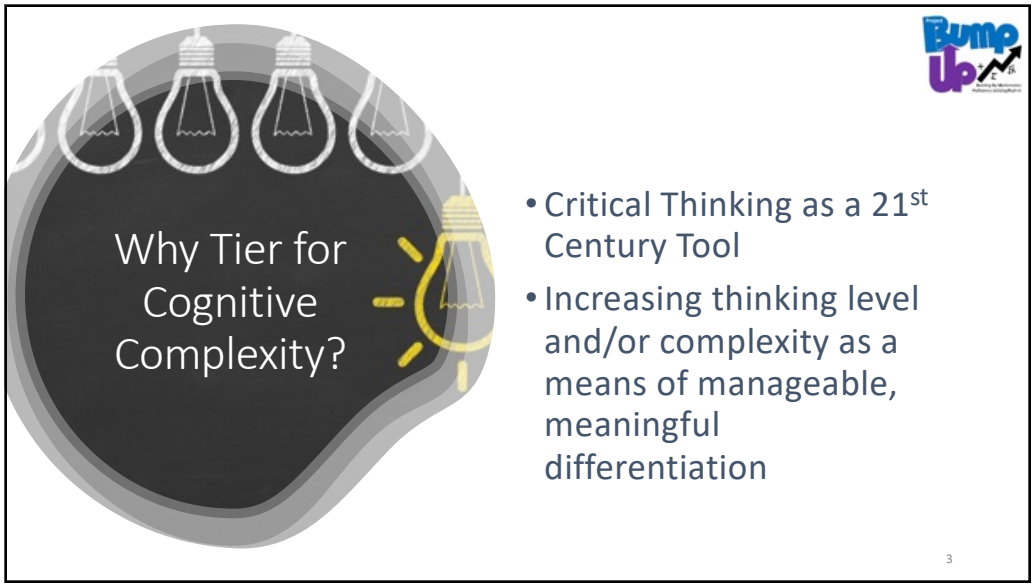
Objectives

Participants will be able to

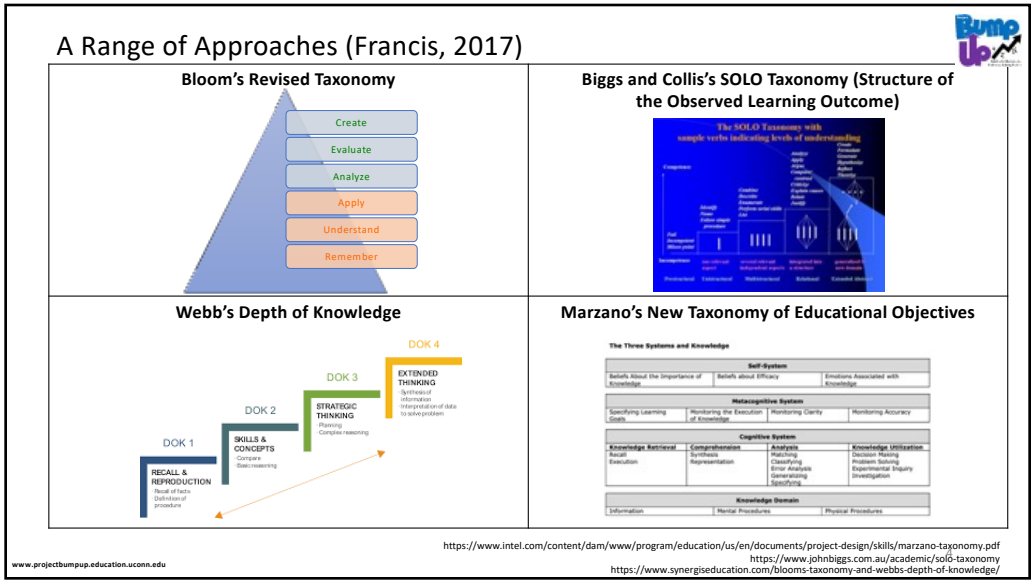
- understand the levels of Bloom's Taxonomy.
- increase the level of thinking in math standards.

2

2


Why Tier for Cognitive Complexity?
• Critical Thinking as a 21st Century Tool
• Increasing thinking level and/or complexity as a means of manageable, meaningful differentiation
3

3


A Range of Approaches (Francis, 2017)
Bloom's Revised Taxonomy
Create
Evaluate
Analyze
Apply
Understand
Remember
Biggs and Collis's SOLO Taxonomy (Structure of the Observed Learning Outcome)
Webb's Depth of Knowledge
DOK 1
RECALL & REPRODUCTION
DOK 2
SKILLS & CONCEPTS
DOK 3
STRATEGIC THINKING
DOK 4
EXTENDED THINKING
Marzano's New Taxonomy of Educational Objectives
www.projectbumpup.education.uconn.edu
https://www.intel.com/content/dam/www/program/education/us/en/documents/project-design/skills/marzano-taxonomy.pdf
https://www.johnbiggs.com.au/academic/solo-taxonomy
https://www.synergiseducation.com/blooms-taxonomy-and-webbs-depth-of-knowledge/
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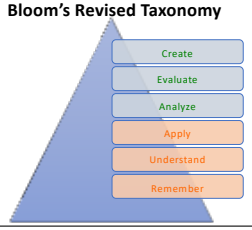
A Range of Approaches (Francis, 2017)

Bloom's Revised Taxonomy



Biggs and Collis's SOLO Taxonomy (Structure of the Observed Learning Outcome)

Webb's Depth of Knowledge

Marzano's New Taxonomy of Educational Objectives

https://www.intel.com/content/dam/www/program/education/us/en/documents/project-design/skills/marzano-taxonomy.pdf
https://www.johnbiggs.com.au/academic/solo-taxonomy
https://www.synergiseducation.com/blooms-taxonomy-and-webbs-depth-of-knowledge/

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Bloom's Revised Taxonomy

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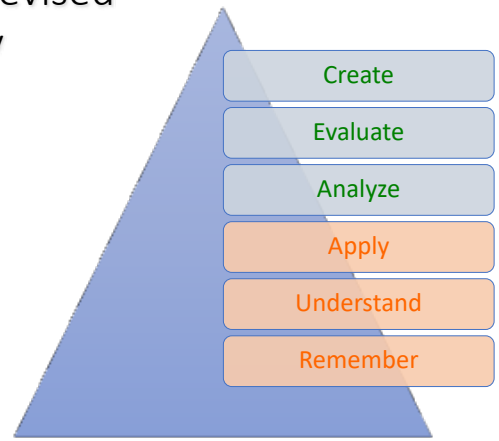
Bloom's Revised Taxonomy

Anderson & Krathwohl, 2001



HIGHER Order Thinking Skills

LOWER Order Thinking Skills

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7

7

Bloom's Taxonomy as Easy as Pie

- Clarity of how the Taxonomy levels build
- Visual to aid in understanding
- Analogy to something that almost everyone can relate to*

*Bloom's Taxonomy – As Easy as Riding a Bike

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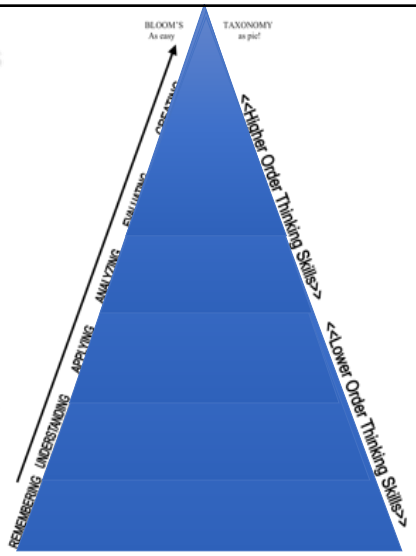

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Dulong Langley, 2006

9

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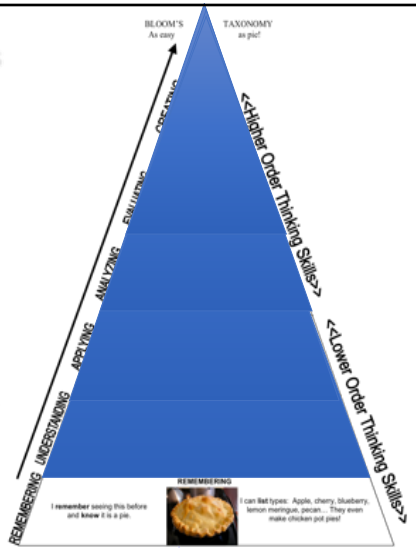

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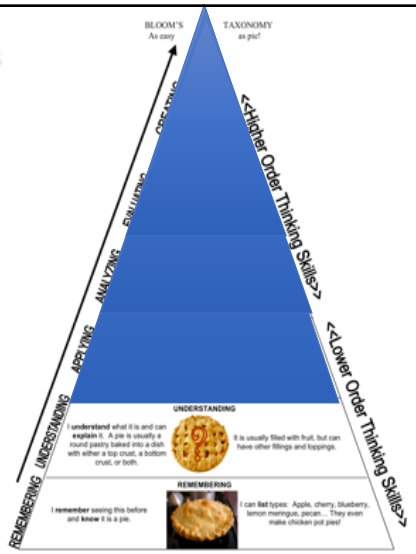

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Dulong Langley, 2006

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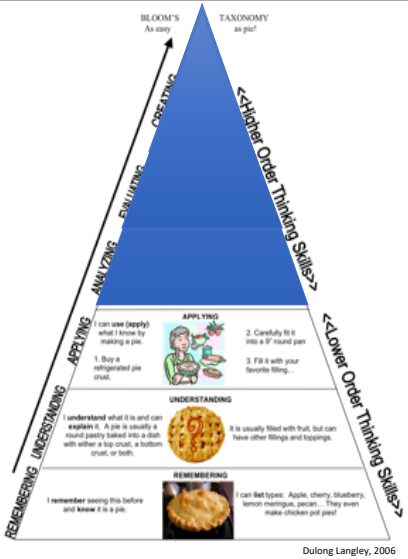

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Dulong Langley, 2006

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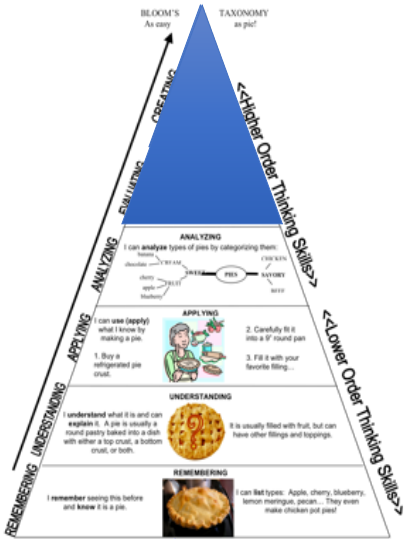

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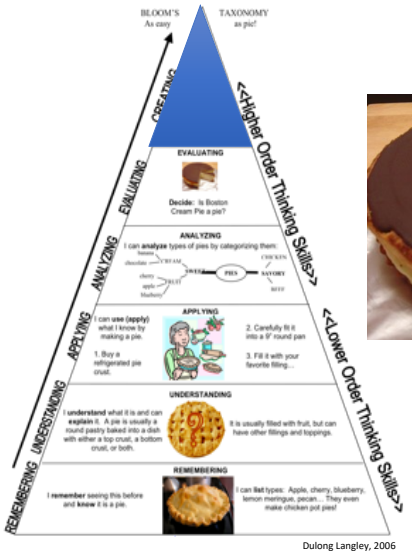

Boston Cream Pie (Choate, 2007)

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Dulong Langley, 2006

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*Bloom's Taxonomy – As Easy as Riding a Bike

Boston Cream Pie (Choate, 2007)

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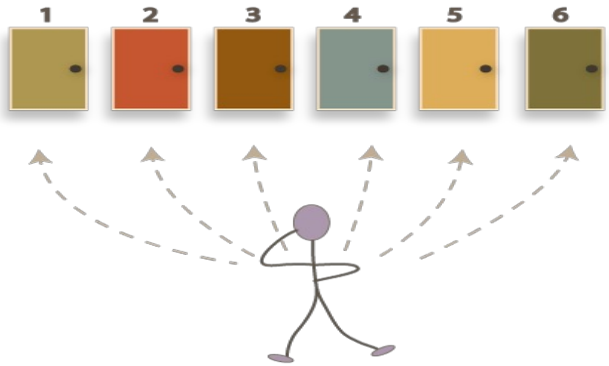
15

15

Multiple Points of Entry to Bloom's Levels



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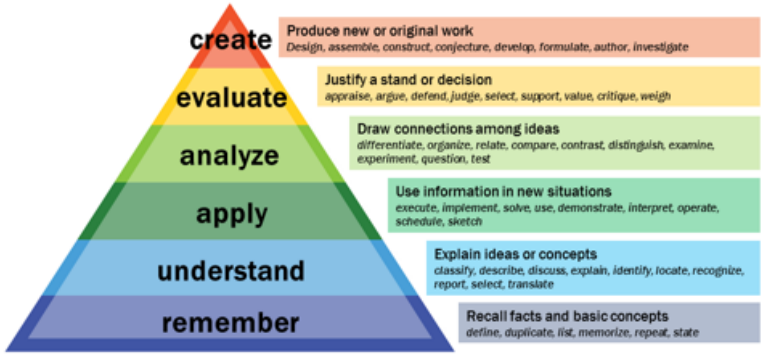
16

16

Verbs – That's what's happening.

Bloom's Taxonomy



17

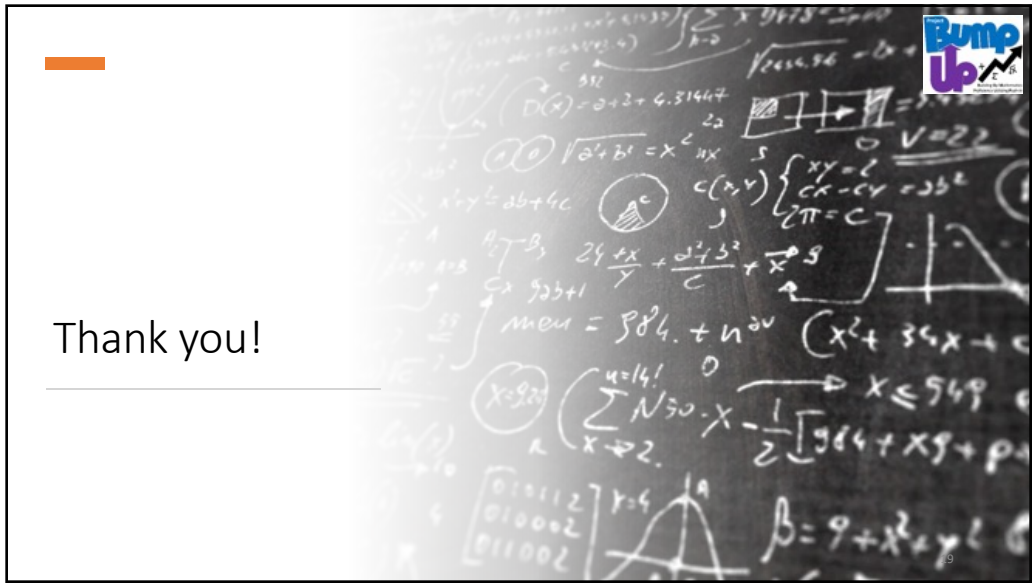
Overlap

REVISED Bloom's Taxonomy Action Verbs

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	• Choose • Define • Find • How • Label • List • Match • Name • Omit • Recall • Relate • Select • Show • Spell • Tell • What • When • Where • Which • Who • Why	• Classify • Compare • Contrast • Demonstrate • Explain • Extend • Illustrate • Infer • Interpret • Outline • Relate • Rephrase • Show • Summarize • Translate	• Apply • Build • Choose • Construct • Develop • Experiment with • Identify • Interview • Make use of • Model • Organize • Plan • Select • Solve • Utilize	• Analyze • Assume • Categorize • Classify • Compare • Conclusion • Contrast • Discover • Dissect • Distinguish • Divide • Examine • Function • Inference • Inspect • List • Motive • Relationships • Simplify • Survey • Take part in • Test for • Theme	• Agree • Appraise • Assess • Award • Choose • Compare • Conclude • Criteria • Criticize • Decide • Deduct • Defend • Determine • Disprove • Estimate • Evaluate • Explain • Importance • Influence • Interpret • Judge • Justify • Mark • Measure • Opinion • Perceive • Prioritize • Prove • Rate • Recommend • Rule on • Select • Support • Value	• Adapt • Build • Change • Choose • Combine • Compile • Compose • Construct • Create • Delete • Design • Develop • Discuss • Elaborate • Estimate • Formulate • Happen • Imagine • Improve • Invent • Make up • Maximize • Minimize • Modify • Original • Originate • Plan • Predict • Propose • Solution • Solve • Suppose • Test • Theory

Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing. Abridged Edition. Boston, MA: Allyn and Bacon.

18


Thank you!
19