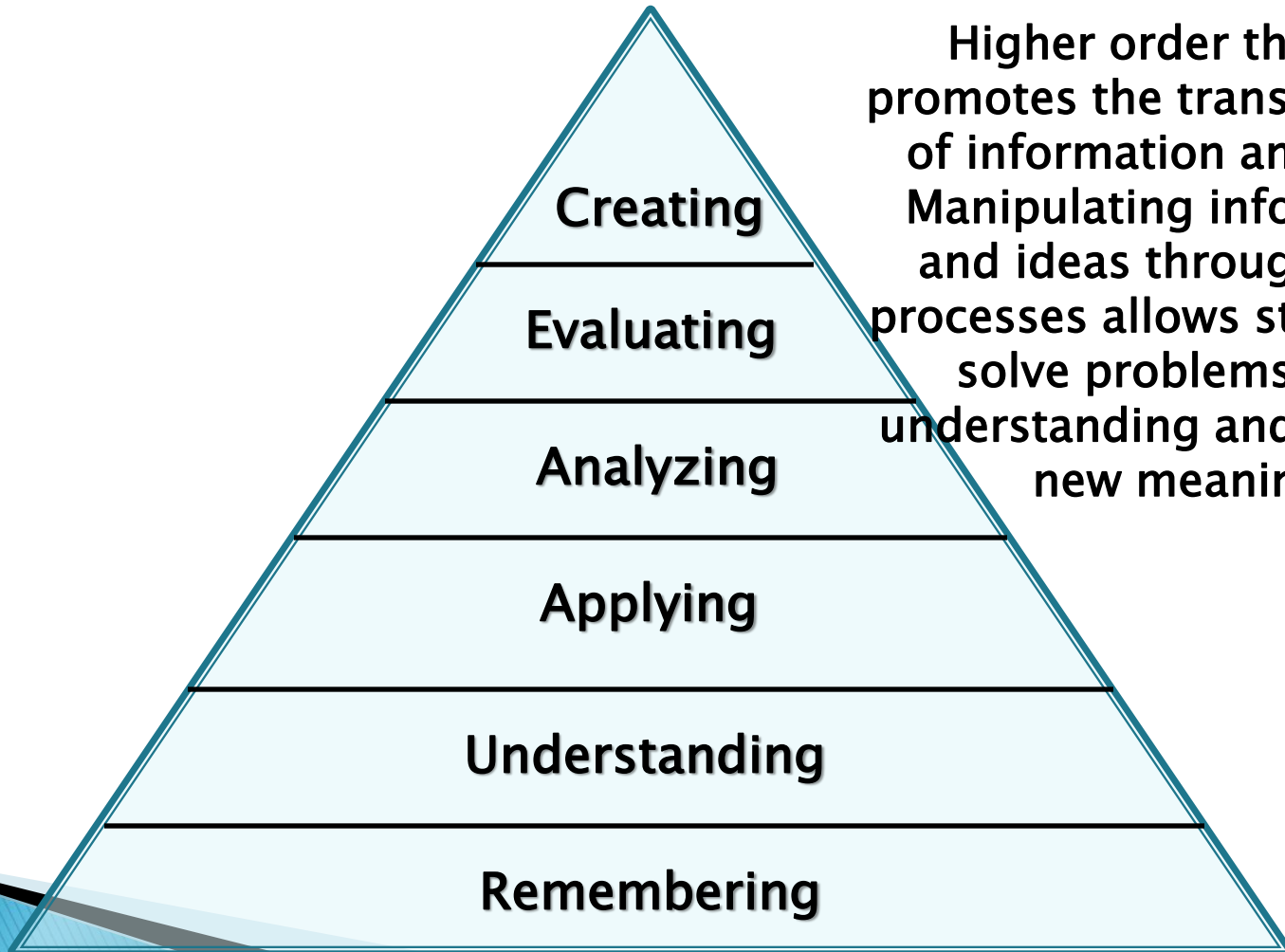


Bloom's Taxonomy

**Assessment
Connections**

Original Bloom's 1956–Nouns

Revised Bloom's 2001–Verbs



Higher order thinking promotes the transformation of information and ideas. Manipulating information and ideas through these processes allows students to solve problems, gain understanding and discover new meaning.

The Revised Taxonomy can:

- Help you clarify what your students should learn. (Think Common Core, OH Learning Standards, 21st Century skills)
- Help you determine which instructional activities you should use. (Think concrete vs. abstract, simple vs. complex, learning styles, hands-on, lecture, simulation, etc.)
- Help you determine what assessments you should use. (Think rigor, lower level assessments might include multiple choice, matching, fill-in-the-blank, etc.; higher level assessments might include using rubrics of essays or performance pieces)

Bloom's Verbs

- ❖ The verbs must be considered in context
- ❖ What follows the verb is more important than the verb itself “Analyze this sentence to decide if the *commas* have been used correctly.”

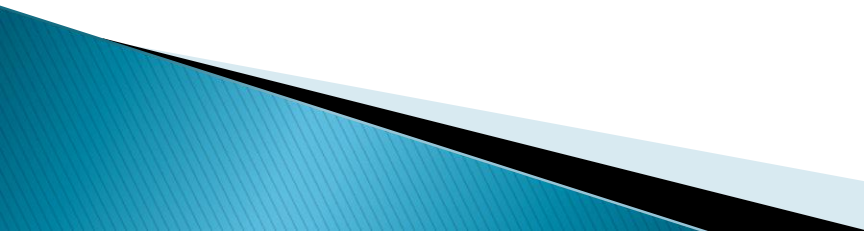
The taxonomy uses verbs to differentiate taxonomy levels—many verbs appear at multiple knowledge levels and do not clearly articulate the intended complexity.

Taxonomy Level	Verbs
Creating	
Evaluating	Compare
Analyzing	Compare, Research
Applying	Calculate
Understanding	Calculate, Describe, Give Examples, Locate, Research
Remembering	Describe, Give Examples, Locate

Same Verb—Three Different Levels of Knowledge

- ❖ Describe 3 characteristics of metamorphic rocks.
- ❖ Describe the difference between metamorphic and igneous rocks.
- ❖ Describe a model that you might use to represent the relationships that exist within the rock cycle.

Same Verb—Three Different Levels of Knowledge

- ❖ **Describe the process of photosynthesis.**
 - ❖ **Describe how the two political parties are alike and different.**
 - ❖ **Describe the most significant effect of WWII on the nations of Europe.**
- 

Reminder:

The Common Core State Standards are educational objectives not *instructional* objectives. Educational objectives are designed for time frames no shorter than a unit.

To correctly place an educational objective on the revised Bloom's Taxonomy Table, you should determine:

- * in which of the four knowledge categories it fits,
- * in which of the six cognitive processes categories it fits, and
- * where the two dimensions intersect.

Types of Knowledge in Revised Bloom's Taxonomy

Sub-Types

Factual Knowledge	Knowledge of...	Terminology
		Specific Details and Elements
Conceptual Knowledge	Knowledge of...	Classifications and Categories
		Principles and Generalizations
		Theories, Models, and Structures
Procedural Knowledge	Knowledge of...	Subject-specific Skills and Algorithms
		Subject-specific Techniques and Methods
		Criteria for Determining When to Use Appropriate Procedures
Meta-Cognitive Knowledge		Strategic Knowledge
		Knowledge about Cognitive Tasks
		Self-Knowledge

The Revised Bloom's Taxonomy Table

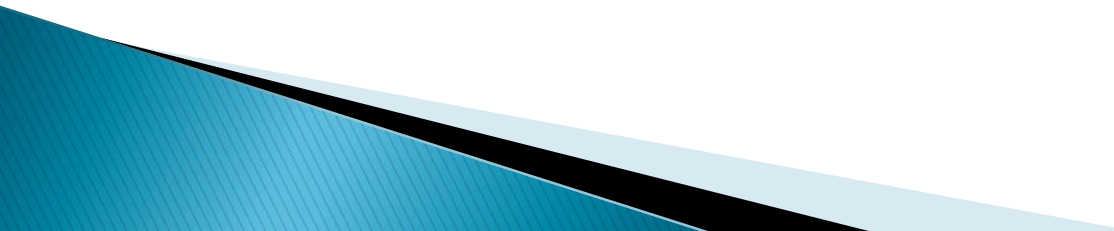
The Cognitive Process Dimension

		<i>Remember</i>	<i>Understand</i>	<i>Apply</i>	<i>Analyze</i>	<i>Evaluate</i>	<i>Create</i>
The Knowledge Dimension	Factual						
	Conceptual						
	Procedural						
	Meta-Cognitive						

How to Analyze a Standard

1. After selecting the standard, find and notate all the Bloom's verbs. (underline, highlight, etc.)
2. Determine if the standard is:
 - a) factual
 - b) conceptual
 - c) procedural or
 - d) meta-cognitiveand which Bloom's level you think applies to the main concept.
3. Look at where the two dimensions intersect.

How to Analyze a Standard

5. **Identify essential knowledge** (Every discipline has a few terms, concepts, procedures & skills that someone must know to work in that field.) **students must have to reach the objective.** Your goal is to determine the fewest facts & concepts you must teach and still get students to the educational objective.
 6. **Determine the highest level of rigor indicated and decide what end “product” you will need to see from your students that will show mastery of the standard.**
 7. **Select the instruction you will need to teach to that level.**
- 

Example: English Language Arts Writing Standard, 5th Grade W.5.6

- 6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.**

Application Process

Example: English Language Arts Writing Standard, 5th Grade W.5.6

6. With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.

Application Process

**Example: English Language Arts Writing Standard,
5th Grade W.5.6**

- 6. use technology (applying)
produce & publish writing (applying, evaluating, creating)
interact & collaborate with others (applying)
demonstrate keyboarding skills (applying)
type a minimum of *two pages* in a *single sitting*
(applying)**

Application Process

Example: English Language Arts Writing Standard, 5th Grade W.5.6

use technology (applying) – *procedural*
produce and publish writing (applying, evaluating, creating) – *factual, conceptual, procedural, meta-cognition*

interact and collaborate with others; (applying) – *procedural*

demonstrate keyboarding skills (applying) – *procedural*
type a minimum of two pages in a single sitting
(applying) – *procedural*

Application Process

Example: English Language Arts Writing Standard, 5th Grade W.5.6

The majority of this standard centers on “applying”.
The highest Bloom’s level is “creating”.

People/life skills needed: interaction, collaboration

Technology skills needed: keyboarding

surfing the web for resources, evaluating & selecting
resources

Writing skills needed: knowing, understanding, applying,
analyzing, evaluating, creating (foundational writing skills
at the heart of it)

The end product: writing and keyboarding skills strong
enough to type two pages in a single sitting.

Application Process

Reading : Goldilocks and Bloom's Applied

Remember: Describe where Goldilocks lived.

Understand: Summarize what the Goldilocks story was about.

Apply: Construct a theory as to why Goldilocks went into the house.

Analyze: Differentiate between how Goldilocks reacted and how you would react in each story event.

Evaluate: Assess whether or not you think this really happened to Goldilocks.

Create: Compose a song, skit, poem, or rap to convey the Goldilocks story in a new form.



Math Application:

Math Knowing questions focus on clarifying, recalling, naming, and listing

- Which illustrates...?
- Write... in standard form....
- What is the correct way to write the number of... in word form?
- Organizing questions focus on arranging information, comparing similarities/differences, classifying, and sequencing
- Which shows... in order from...?

Math Applying questions focus on prior knowledge to solve a problem

- What was the total...?
- What is the value of...?
- How many... would be needed for...?
- Solve....
- Add/subtract....
- Find....
- Evaluate....


Math Analyzing questions focus on examining parts, identifying attributes/relationships/patterns, and main idea

- Which tells...?
- If the pattern continues,....
- Which could...?
- What rule explains/completes... this pattern?
- What is/are missing?

Math Creating questions focus on producing new information, inferring, predicting, and elaborating with details

- What number does... stand for?
- What is the probability...?
- What are the chances...?
- What effect...?
- How many different...?
- What happens to... when...?
- What is the significance of...?
- How many different combinations...?
- Find the number of..., ..., and ... in the figure below.

Math Evaluating questions focus on reasonableness and quality of ideas, criteria for making judgments, and confirming accuracy of claims

- Which most accurately...?
 - Which is correct?
 - Which statement about... is true?
 - What are the chances...?
 - Which would best...?
 - Which would... the same...?
 - Which statement is sufficient to proven...?
- 

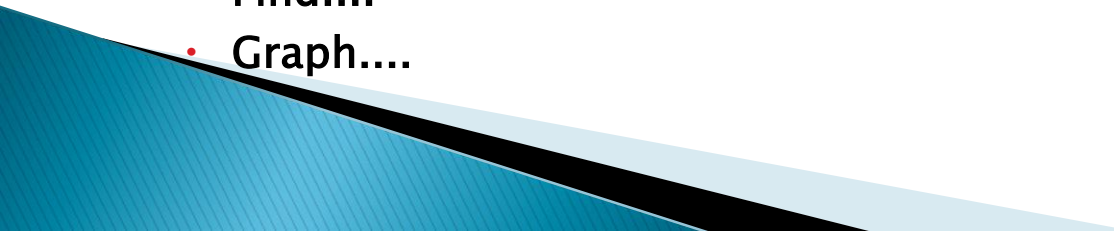
Science Knowing questions focus on clarifying, recalling, naming, and listing

- Which illustrates...?
- A... is an example of...?
- From where do... get...?

Science Understanding questions focus on arranging information, comparing similarities/differences, classifying, and sequencing

- Which shows... in order from...?
- What is the order...?
- Which is the difference between a... and a...?
- Which is the same as...?
- Express... as a...?
- How would... compare to...?

Science Applying questions in this category focus on prior knowledge to solve a problem

- What was the total...?
 - What is the value of...?
 - How many... would be needed for...?
 - Find....
 - Graph....
- 

Science Analyzing questions focus on examining parts, identifying attributes/relationships/patterns, and main idea

- ❖ Which tells...?
- ❖ If the pattern continues,....
- ❖ Which could...?
- ❖ What is/are missing?
- ❖ Which shows...?
- ❖ What is the effect of...?
- ❖ What most likely caused...?
- ❖ What is the main purpose...?
- ❖ What is the principle role of...?
- ❖ This information indicates that....
- ❖ Base you answer on....
- ❖ According to the diagram,....

Science Creating questions focus on producing new information, inferring, predicting, and elaborating with details

- ❖ What is the probability...?
- ❖ What are the chances...?
- ❖ What effect...?
- ❖ What can you correctly conclude...?
- ❖ What would probably happen if...?
- ❖ The best inference that can be made from... is...?

Science Creating Questions Continued:

- How many different...?
- What happens to... when...?
- What is the significance of...?
- What does the experiment show?
- What relationship exists between...?
- Which has both... and...?
- What conclusion does... support?

Science Evaluating questions focus on reasonableness and quality of ideas, criteria for making judgments, and confirming accuracy of claims

- Which most accurately...?
- Which is correct?
- Which statement about... is true?
- What are the chances...?
- Which would best...?
- Which would... the same...?
- Which statement is sufficient to prove...?
- What evidence is there that...?
- Which is the most logical conclusion?

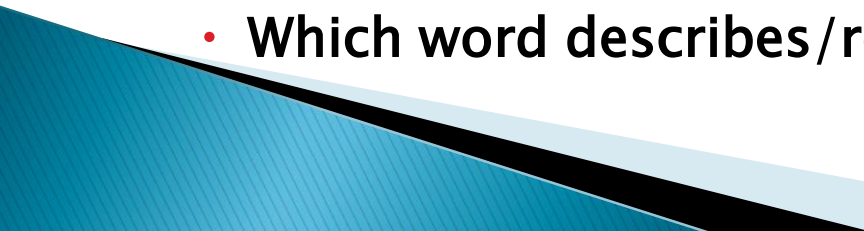
Social Studies Knowing questions focus on clarifying, recalling, naming, and listing

- What was a result of...?
- Which situation was the immediate cause of...?
- Which... is the best differentiation between... and...? (foils are definitions)

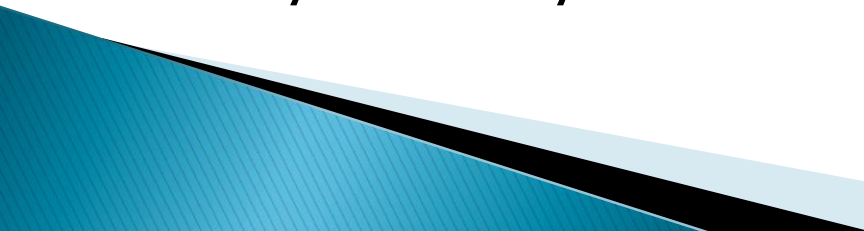
Social Studies Understanding questions focus on arranging information, comparing similarities / differences, classifying, and sequencing

- When comparing..., what statement can be made about...?
- Which heading (phrase) best completes the partial outline below?
- What caused... to...?
- Which event was most inconsistent with...?
- Which best explains the difference between...?
- In general, what is the difference between...?
- Which describes...? is the best description of...?
- What does this statement demonstrate about...?
- Which best describes the similarities between...?
- Which belief is shared by... and...?

Social Studies Applying questions focus on prior knowledge to solve a problem

- **What key activity does this illustration depict?**
 - **What event is portrayed in the illustration above?**
 - **In what document can... be found?**
 - **Who said, "...?"**
 - **Using the map above, what direction would one go in order to travel from...to...?**
 - **Using the map above, where would you go to find...?**
 - **The illustration above appeared in response to which...?**
 - **Above is an editorial cartoon from... that was intended to illustrate which...?**
 - **Which is a primary source of information about...?**
 - **According to the statements above, which constitutional amendments are under discussion?**
 - **Using the map above, what was the largest city in...?**
 - **Which word describes/refers to...?**
- 

Social Studies Analyzing questions focus on examining parts, identifying attributes / relationships / patterns, and main idea

- Which factor had the largest impact on...?
 - What was a main cause of...?
 - The most significant feature was...?
 - Which... was responsible for... as shown in the map above?
 - Why was... significant?
 - In the selection, what did... mean?
 - What was one impact of...?
 - Which generalization concerning... is most clearly supported by the information provided by the graph?
 - In the quote above, why does the author state that...?
 - This is a political cartoon of.... What does the artist want to express?
 - The picture above is an example of.... These... were intended to do...?
 - Why was this poster used during...?
 - Why did...? Why was...?
- 

Social Studies Creating questions focus on producing new information, inferring, predicting, and elaborating with details

- What is the following statement describing for...?
- What might... in the illustration above represent?
- What can be inferred from this statement?
- Which statement explains the importance of...?
- Which inference motivated... to...?
- Which ... best explains the reason why...?
- (a), (b), and (c) are major world problems that indicate a need for...?
- (a), (b), and (c) are methods most often used by whom?
- Why was... a major contribution to the development of...?
- These rules reflect what policy?
- The economic success of... will most likely lead to which...?

Social Studies Evaluating questions focus on reasonableness and quality of ideas, criteria for making judgments, and confirming accuracy of claims

- Which best describes...?
- Which statement best describes...? best explains why...? best expresses the main idea of...?
- Which statement is correct about...?
- Which statement is true concerning...?
- This quotation presents a justification for which...?
- Data from this graph support the conclusion that... did which...?
- How did... justify... to bring about change?
- Which is the best interpretation of the information in the chart above?
- What was the significance of...?
- Which statement about... is an opinion?
- Which is a valid conclusion about... in...?
- Which statement about the effects of... is most logical?

BLOOM'S TAXONOMY FOR ART

Knowing	Describe the painting.
Understanding	What is the subject or theme?
Applying	If you could interview the artist, what questions would you ask?
Analyzing	Explain what you think the artist is trying to say about the subject matter.
Creating subject	What ways would you render the differently?
Evaluating	What is your opinion of the painting? Why?

