

Cognitive Level mapping in lovemytest.com

Questions in lovemytest.com are to be broadly categorized in to six cognitive levels, mapping to Blooms Taxonomy as shown below.

Question Levels in LMT	Knowledge	Understanding	Application	HOT	Value	Skill/Creative
Mapping Bloom's Levels	Level-1	Level-2	Level-3	Level 4	Level-5	Level-6

Please go through the Blooms Taxonomy levels explained below to map the questions to the best possible levels. There could be some overlaps in some cases, where you can use your best judgment to map the questions in the right level.

How to decide the cognitive levels:

1. Knowledge / Remembrance

Questions checking the knowledge and remembrance. Ability to recall facts and basic concepts.

(What, When, Which, Where, Who, list, memorize, repeat, state, recall, identify)

2. Understanding / Comprehension

Questions checking the comprehension or understanding of a concept. Ability to explain ideas or concepts.

(Describe, discuss, explain, classify, compare, locate, recognize, report, select, translate)

3. Application / Use

Questions where learning is applied. Ability to use the knowledge in different situations.

(How is..., solve, construct, use, demonstrate, execute, experiment, implement, interpret, operate, schedule)

4. Higher Order Thinking (HOT) / Analytical

Questions requiring critical thinking. Ability to draw connections among ideas and take a stand or decision.

(Why does..., What would happen if..., What do you think..., When do you think..., Give reasons for..., Differentiate, critique, process, conclude, organize, relate, contrast, distinguish, examine, question, test, argue, defend, judge, select, support, value)

5. Evaluation / Value Based

Questions imparting values. Those requiring evaluation of a situation, process or action. Ability to justify, find value and predict outcomes or imparting human values.

(Value, appraise, judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)

6. Skill Based / Creative

Questions checking skills/action/creativity. Ability to produce new or original work. Create an outcome / product which has a commercial, social or academic value.

(Make, Create, design, construct, draw, derive, make, sketch, assemble, develop, code, formulate, build, compile, produce)

Percentage of questions level wise to be created in Lovemytest

Questions to be categorised into 6 cognitive levels as described below:

- 1. Knowledge - Ability to recall facts and basic concepts. (30%)
- 2. Understanding - Ability to explain ideas or concepts. (30%)
- 3. Application - Ability to use information in new situations. (10%)
- 4. Higher Order Thinking (HOT) - Questions requiring critical thinking.(10%)
- 5. Value Based - Ability to find value, justify and predict outcomes.(10%)
- 6. Skill Based/Creative - Ability to produce new or original work. (10%)

To know more about the Bloom's Methodology, please go through the write-up below.

A Guide to Bloom's Taxonomy

Bloom's Taxonomy provides an important framework for teachers to use to focus on higher order thinking. By providing a hierarchy of levels, this taxonomy can assist teachers in designing performance tasks, crafting questions for conferring with students, and providing feedback on student work

This resource is divided into different levels each with Keywords that exemplify the level and questions that focus on that same critical thinking level. Questions for Critical Thinking can be used in the classroom to develop all levels of thinking within the cognitive domain. The results will be improved attention to detail, increased comprehension and expanded problem solving skills. Use the keywords as guides to structuring questions and tasks. Finish the Questions with content appropriate to the learner. Assessment can be used to help guide culminating projects. The six levels are:

Level I Knowledge

Level IV Analysis

Level II Comprehension

Level V Evaluation

Level III Application

Level VI Creation

Blooms Level I: Knowledge (Remember)

Exhibits memory of previously learned material by recalling fundamental facts, terms, basic concepts and answers about the selection.

Keywords:

who, what, why, when, omit, where, which, choose, find, how, define, label, show, spell, list, match, name, relate, tell, recall, select

Questions:

- What is...? • Can you select? • Where is...? • When did ____ happen?
- Who were the main...? • Which one...?
- When did...? • Can you recall...? • Who was...?
- How did ____ happen...? • Can you list the three...? • How is...?
- What is the definition...?

Assessment:

In the first stage of Bloom's taxonomy, you might ask students to recite something you've taught them, quoting information from memory based on previous lectures, reading material and notes. Educators can use verbs like define, describe, identify, label, list, outline, recall, and reproduce to effectively measure success in this stage. It's the most basic level in Bloom's taxonomy, but represents an important foundation; a stepping stone toward deeper learning. A basic way to test learning on this level is simple questions and answer periods, or multiple choice questions. This shows that the student is able to memorize facts and recall them. But it does not yet suggest that students actually understand the material.

Blooms Level II: Comprehension (Understanding)

Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptors and stating main ideas.

Keywords:

Compare, contrast, demonstrate, interpret, explain, extend, illustrate, infer, outline, relate, rephrase, translate, summarize, show, classify

Questions:

- How would you classify the type of...? • How would you compare...? contrast...?
- Will you state or interpret in your own words...?
- How would you rephrase the meaning?
- What facts or ideas show...? • What is the main idea of?
- Which statements support...? • Which is the best answer...?
- What can you say about ...? • How would you summarize... ?
- Can you explain what is happening...? • What is meant by...?

Assessment:

Ask students to discuss a problem or idea in their own words, in order to evaluate their comprehension from the "remembering" stage of Bloom's taxonomy. For example, they might have to paraphrase a story or definition, explain a concept in their own words, tell a story that relates to it, or provide analogies. To measure this, verbs like defend, explain, generalize, paraphrase, summarize and translate. A student who reaches this level can interpret the materials, and demonstrate comprehension of the material.

Blooms Level III: Application (Apply/experiment)

Solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different, or new way.

Keywords:

Apply, build, choose, construct, develop, interview, make use of, organize, experiment with, plan, select, solve, utilize, model, identify

Questions:

- How would you use...? • How would you solve ____ using what you've learned...?
- What examples can you find to...? • How would you show your understanding of...?
- How would you organize _____ to show...?
- How would you apply what you learned to develop...?
- What approach would you use to...? • What other way would you plan to...?
- What would result if...? • Can you make use of the facts to...?
- What elements would you use to change...? • What facts would you select to show...?
- What questions would you ask during an interview? • How would you show...?

Assessment:

The student will now have to take what they've learned and apply it to a scenario outside of the classroom. For example, they can use a math formula they've learned to calculate a family budget in the real world, or apply a legal ruling to a specific case in the news headlines. Verbs to use in this stage of Bloom's taxonomy include apply, demonstrate, predict, show, solve or use. That could come in the form of collaborative group projects or the composition of a blog.

Blooms Level IV: Analysis (Analyze/examine)

Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.

Keywords:

Analyze, categorize, classify, compare, contrast, discover, dissect, divide, examine, inspect, simplify, survey, test for, distinguish, list, distinction, theme, relationships, function, motive, inference, assumption, conclusion, take part in

Questions:

- What are the parts or features of . . . ? • How is _____ related to . . . ?
- Why do you think . . . ? • What is the theme . . . ? • What motive is there . . . ?
- Can you list the parts . . . ? • What inference can you make . . . ?
- What conclusions can you draw . . . ? • How would you classify . . . ?
- How would you categorize . . . ? • Can you identify the different parts . . . ?
- What evidence can you find . . . ? • What is the relationship between . . . ?
- Can you make a distinction between . . . ? • What is the function of . . . ?
- How would you explain...? • What ideas justify . . . ? • Why did...?

Assessment:

Now it's time to reach the higher half of the learning levels in Bloom's taxonomy. Here, students can draw connections between ideas, utilize critical thinking, and break down knowledge into the sum of its parts. This can include using logical deduction to figure out how a piece of equipment works, or finding fallacies in the reasoning of an argument. Key verbs for measurement include analyze, break down, compare, contrast, differentiate, deconstruct and infer. On achieving this level of Bloom's taxonomy, a student can demonstrate that they fully understand the material on the whole, and as its component parts. They might be able to draw diagrams or deconstruct thought processes.

Blooms Level V: Find Value (Evaluate, Critique, Get convinced)

Present and defend opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.

Keywords:

award, choose, conclude, criticize, decide, defend, determine, dispute, evaluate, judge, justify, measure, compare, mark, rate, recommend, rule on, select, agree, appraise, prioritize, opinion, interpret, explain, support importance, criteria, prove, disprove, assess, influence, perceive, value, estimate, deduct

Questions:

- What are the values /learning from the process/action...? • Evaluate a situation ...?
- Do you agree with the actions/outcome...? • What is your opinion of...?
- How would you prove/ disprove...? • Can you assess the value or importance of...?
- Would it be better if...? • Why did they (the character) choose...?
- What would you recommend...? • How would you rate the...?
- How would you evaluate...? • How would you compare the ideas...? the people...?
- How could you determine...? • What choice would you have made...?
- What would you select...? • How would you prioritize...? • How would you justify...?
- What judgment would you make about...? • Why was it better that...?
- How would you prioritize the facts...? • What would you cite to defend the actions...?
- What data was used to make the conclusion...?
- What information would you use to support the view...?
- Based on what you know, how would you explain...?

Assessment:

Here is where the student makes an educated judgment about the value of the material they've just learned, applied and analyzed, to be able to tell the difference between fact and opinions or inferences. That could include finding an effective solution to a problem, or justifying a specific decision and being able to back up that justification with knowledge. Appraise, conclude, critique, evaluate, support and summarize are all good verbs to use in this level of Bloom's taxonomy. Tools like surveys and blogs can help in this particular level.

Blooms Level VI: Create (Synthesize/Process/Compile/Show Skills)

Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.

Keywords:

Create, build, choose, combine, compile, compose, construct, create, design, develop, estimate, formulate, imagine, invent, make up, originate, plan, predict, propose, solve, solution, suppose, discuss, modify, change, original, improve, adapt, minimize, maximize, theorize, elaborate, test, happen, delete

Questions:

- What changes would you make to solve...? • How would you improve...?
- What would happen if...? • Can you elaborate on the reason...?
- Can you propose an alternative...? • Can you invent...?
- How would you adapt _____ to create a different...?
- How could you change (modify) the plot (plan)...? • What facts can you compile...?
- What way would you design...? • What could be combined to improve (change)...?
- Suppose you could _____ what would you do...? • How would you test...?
- Can you formulate a theory for...? • Can you predict the outcome if...?
- How would you estimate the results for...? • What could be done to minimize (maximize)...? • How would you describe...?
- Can you construct a model that would change...? • How is _____ related to...?
- Can you think for an original way for the...? • What are the parts or features of...?
- Why do you think...? • What is the theme...? • What motive is there...?
- Can you list the parts...? • What inference can you make...? ...? • What ideas justify...?
- What conclusions can you draw...? • How would you classify...?
- How would you categorize...? • Can you identify the different parts...?
- What evidence can you find...? • What is the relationship between...?
- Can you make the distinction between...? • What is the function of

Assessment:

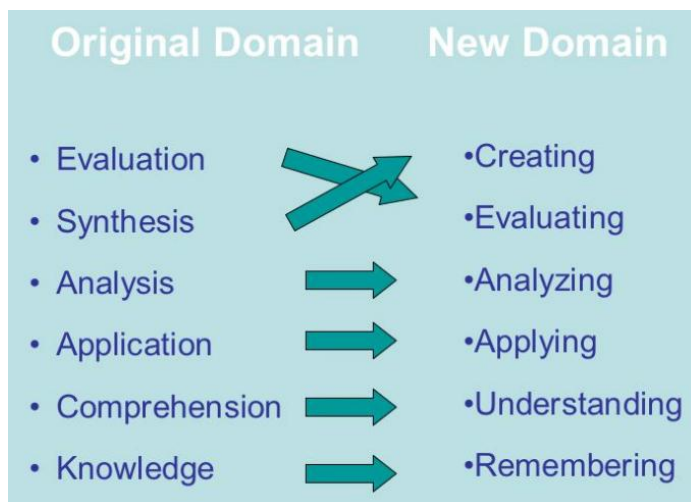
In this level of Bloom's taxonomy, the student demonstrates full knowledge by applying what they've learned and analyzed, and building something, either tangible or conceptual. That could include writing a manual or report on a particular topic, designing a piece of machinery, or revising a process to improve the results. Verbs to use include categorize, combine, compile, devise, design, generate, modify and write. Projects can range from detailed essays that put parts of the learning together to form a whole concept or idea, or networking with others to discuss the merits of a study.

.....

See the some historic changes below

CHANGES IN BLOOM'S TAXONOMY:

Blooms Taxonomy got evolved over a period of time and some changes discussed above were done later by educators. The chart shown below compares the original taxonomy with the revised one with changing the names in the six categories from noun to verb forms. We are following the new domain as shown below.



Cognitive Processes and Levels of Knowledge Matrix

Bloom's Revised Taxonomy not only improved the usability of it by using action words, but added a cognitive and knowledge matrix.

The Knowledge Dimension	Know/Remember	Comprehend/Understand	Apply	Analyze	Evaluate	Create
Facts	list	para-phrase	classify	outline	rank	categorize
Concepts	recall	explains	show	contrast	criticize	modify
Processes	outline	estimate	produce	diagram	defend	design
Procedures	reproduce	give an example	relate	identify	critique	plan
Principles	state	converts	solve	differentiates	conclude	revise
Meta-cognitive	proper use	interpret	discover	infer	predict	actualize

Disclaimer:

This document is strictly for internal use. The content is mostly referenced from different online sources to adapt to our requirement and we do not claim any rights to it.

References and credits to:

<http://www.bloomstaxonomy.org/Blooms%20Taxonomy%20questions.pdf>

<http://www.nwlink.com/~donclark/hrd/bloom.html>