Question-Storming

A Mid-Lecture Thinking Routine

How This Works

Step 1 Your instructor will pause the lecture and present a concept or problem.

Step 2 With your group, spend **3–4 minutes** generating as many questions as you can. Quantity over quality — no wrong questions here.

Step 3 Your group votes on a question to share with the class.

Step 4 The class votes on which question it most wants to explore.

Stem Bank · *You can use these to help launch your questions*

What: *What are we given? What do we need to know to answer this question? What is the goal?*	**Reason:** *Why does this work when…?*
Change: *What would happen if we changed…?*	**Connect:** *How is this connected to…?*
Visualize: *What would a graph or picture look like?*	**Truth:** *Is this always true, or only sometimes?*
Method: *What is the most efficient way to…?*	**Estimate:** *Without calculating, what do we expect the answer to look like?*
Error: *What mistake would be easy to make here and why?*	**Assumptions:** *Are we assuming something that might not actually be true?*

Question Type · *Depth of Knowledge*

Different questions require different depths of knowledge.

Level 1 ***Recall & Reproduce***	The question has a single correct answer reached by remembering a fact, applying a known formula, or following a set procedure with no decisions required. **Ex:** *"What is the quadratic formula?"* *"What information do we know? What information do we need?"*
Level 2 ***Skills & Concepts***	The question requires a decision about how to approach a problem, not just executing a procedure. It may involve estimating, comparing, or explaining why a method works. **Ex:** *"Which method would be most efficient here and why?"* *"How does this graph change if we modify the coefficient?"*
Level 3 ***Strategic Thinking***	The question requires complex reasoning, planning, or justification. Answering might mean constructing a diagram, exploring an unfamiliar situation, or connecting ideas across concepts. **Ex:** *"How does this connect to…?"* *"How do we know our answer is correct?"*

Note: *Most questions asked in math classrooms, by teachers and students alike, sit at Level 1. Level 1 questions are good to ask! Level 2 and Level 3 questions are where mathematical thinking lives, and they are questions any student is capable of asking. One goal of Question-Storming is to practice reaching for them.*