Improve Concept Retention By Breaking the Cramming Cycle

Most teachers will ‘fess up that their students don’t always remember course content beyond exam time. This phenomenon is rooted in core principles from educational psychology. The good news is that there are a handful of straightforward approaches to teaching and reviewing new information that will help students (and faculty) break the cramming-testing-forgetting cycle and increase the likelihood that students will recall important information days, months and even years after the exam is over. In a nutshell:
Recency: In general, the more recently an idea is encountered, the stronger the memory of that concept. This is why cramming seems to work. However, reliance on cramming increases the impact of functional oblivion once the exam is past. One way to take away the efficacy of cramming is to decrease the number of test items that require only a parroting back of facts, which requires simple memorization. Don’t reward mere factual recall. Instead, write test items that force students to apply concepts and make judgments. Their reliance on the recency effect will fade when it is not reinforced.
Frequency: Memories are strengthened by frequent exposure to the data in question. Again, when students are rewarded for compressing five reviews into a single hour, they “learn” that this is how studying works. But building multiple levels of cognition, participation and application activities that draw on learned memories into class sessions helps students internalize the reality that distributed practice makes for stronger, longer-lasting memories. Help students experience the truth of this psychological principle via what educational psychologists call “maintenance rehearsals” throughout multiple class sessions: not straight factual reviews, but mucking around with key ideas that students must remember to be conversant in the aims of the course.
Potency: We remember things when they are unique, when our emotions are involved, and when they tap into our own emotions and lived experiences. Anything we can do to connect new material to students’ lives, provide some drama and/or humor or vivid pictures will increase the likelihood that the material will be remembered long after the exam is past.

Finally, we can bring students in on the truth of how their memories work by explicitly teaching them to harness the real power of recency, frequency and potency to take control of their own studying. Ultimately, each of us is responsible for our own learning. These three tools can help students understand it’s not an accident.