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In the ancient world, the Greeks believed that all great insights came from one of nine muses, divine sisters who brought inspiration to mere mortals. In the modern world, few people still believe in the muses, but we all still love to hear stories of sudden inspiration. Like Newton and the apple, or Archimedes and the bathtub (both another type of myth), we’re eager to hear and to share stories about flashes of insight.

But for those who have to be creative on demand, these stories don’t offer much practical advice on how to have a eureka moment of their own. Long walks or hot showers may be where we think out best ideas come from, but those are hardly available options in the middle of a crowded workday. While research hasn’t exactly validated the existence of divine muses, it has given us some insight into how eureka moments happen…and how to make them happen more often.

Eureka moments feel like flashes of insight because the often come out a period when the mind isn’t focused on the problem, what psychologists call a period of incubation. Incubation is the stage where people briefly step back from their work. Many of the most productive creative people intentionally set a project aside and take a physical break from their work believing that this incubation stage is where ideas begin to come together below the threshold of the conscious mind. Some people juggle various projects at the same time under the belief that while their conscious mind is focusing on one project, the others are incubating in their unconscious. The insights that come after incubation are what feel like we’re tapping into the same idea-generating force that powered Newton and Archimedes.

A team of researchers led by Sophie Ellwood recently found empirical evidence for power of incubation to boost creative insight. The researchers divided 90 undergraduate psychology students into three groups. Each group was tasked with completing an Alternate Uses Test, which asks
participants to list as many possible uses for common objects as they can imagine. In this case, the participants were told to list possible uses for a piece of paper. The number of original ideas that were generated would serve as a measurement of divergent thinking, an important element of creativity and a significant step toward finding a eureka-worthy insight.

The first group worked on the problem for 4 continuous minutes. The second group was interrupted after two minutes and asked to generate synonyms for each word from a given list (considered to be another task that exercised creativity), then given two more minutes to complete the original test. The final group was interrupted after two minutes, given the Myers-Briggs Type Indicator (considered an unrelated task), and then asked to continue working on the original alternate uses test for two more minutes. Regardless of the group, each participant was given the same amount of time (4 minutes) to work on their list of possible uses for a sheet of paper. The research team was then able to compare the creativity that resulted from continuous work, work with an incubation period where a related task was completed, and work with an incubation period where an unrelated task was completed.

The researchers found that the group given a break to work on an unrelated task (the Myers-Briggs test) generated the most ideas, averaging 9.8 ideas. The group given a break to work on a related task placed second, averaging 7.6 ideas generated. The group given no break but four continuous minutes of work time generated the least possible uses, averaging 6.9 ideas. The research team had validated the idea that incubation periods, even those as brief as a few minutes, can significantly boost a person’s creative output.

One possible explanation for these findings is that when presented with complicated problems, the mind can often get stuck, finding itself tracing back through certain pathways of thinking again and again. When you work on a problem continuously, you can become fixated on previous solutions. You will just keep thinking of the same uses for that piece of paper instead of finding new possibilities. Taking a break from the problem and focusing on something else entirely gives the mind some time to release its fixation on the same solutions and let the old pathways fade from memory. Then, when you return to the original problem, your mind is more open to new possibilities – eureka moments.

More interestingly, their research offers hope for those with packed calendars. Recall that Ellwood’s team found that group of participants who switched to unrelated work generated the most ideas. This suggests that an effective way to incubate a problem in need of a eureka moment is to switch to an unrelated, but still work-related, task. This could be a totally different work project or even better something a bit more mundane, like responding to emails or cleaning out your contacts. Anything that takes your mind off the problem at hand and gives your mind a break will boost your odds of having a eureka moment when you return to that problem. If you need a creative insight on demand, consider structuring your workday to leave some mundane tasks undone, saving them for when you need to incubate. When you switch back, you might just find yourself shouting “eureka.”
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