

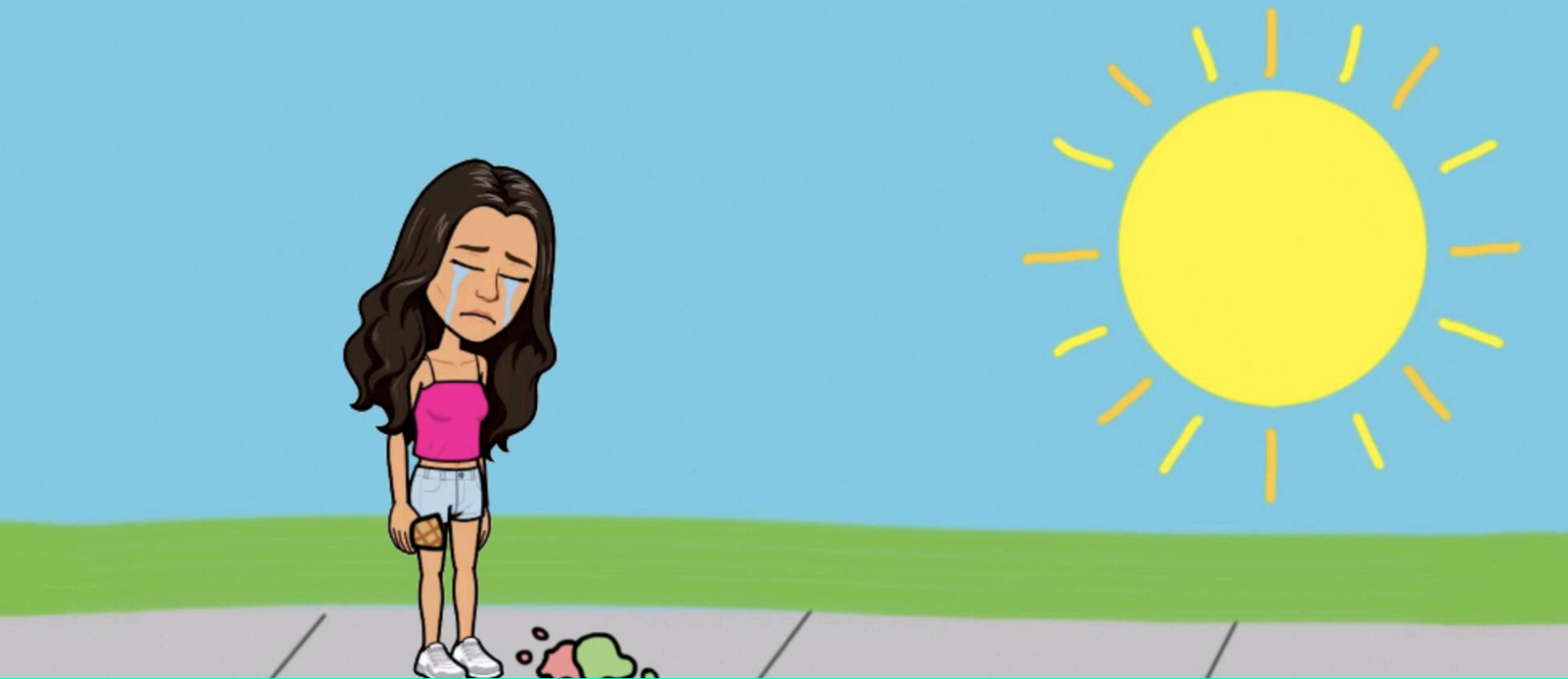


Free Fall

By Caitlin Miranda



Sophia was enjoying her double-scoop ice cream on a hot summer day.



Oh no! Sophia's ice cream plopped onto the sidewalk! Sophia began to cry.
"Noooo! Why did my ice cream fall?!" She whined.

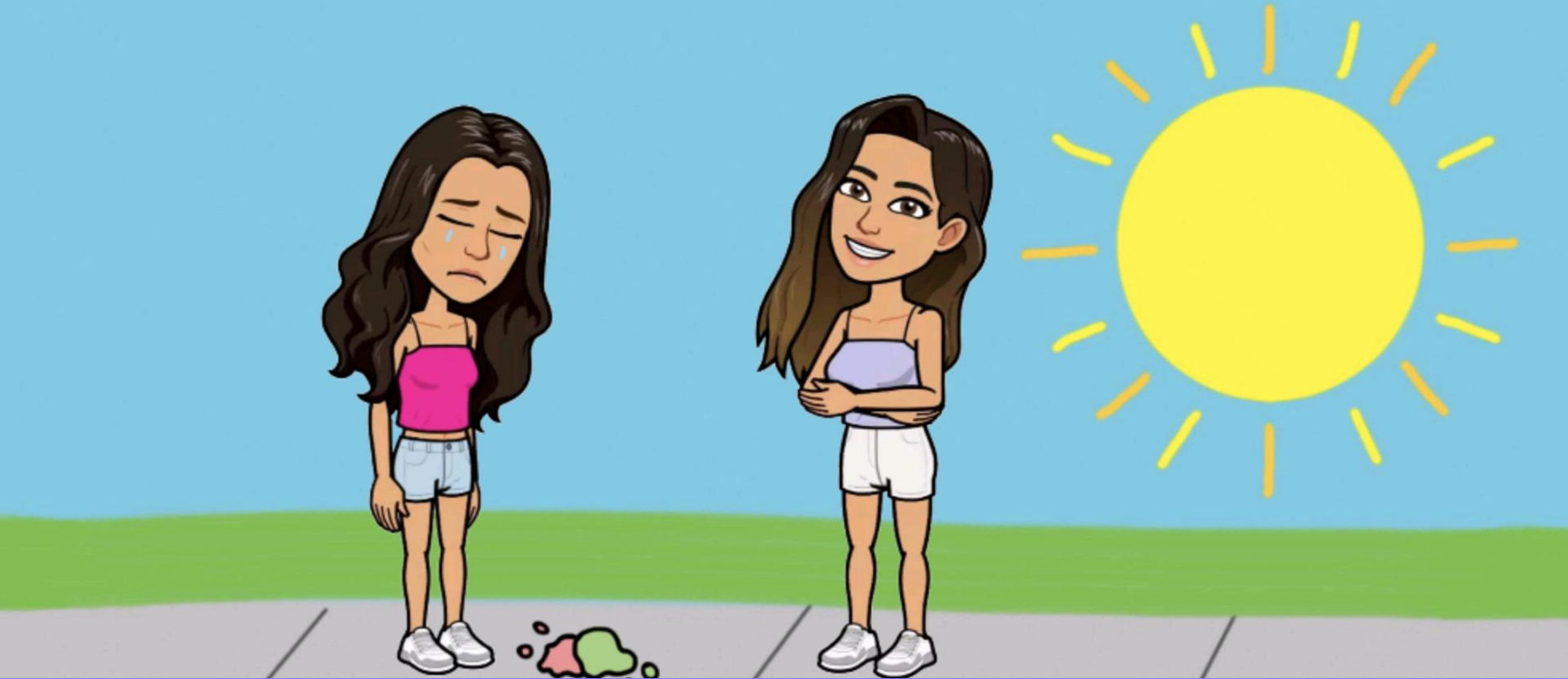


Caitlin overheard Sophia and saw her melting ice cream that had fallen on the hot cement.

"Thanks a lot, gravity," Caitlin says.

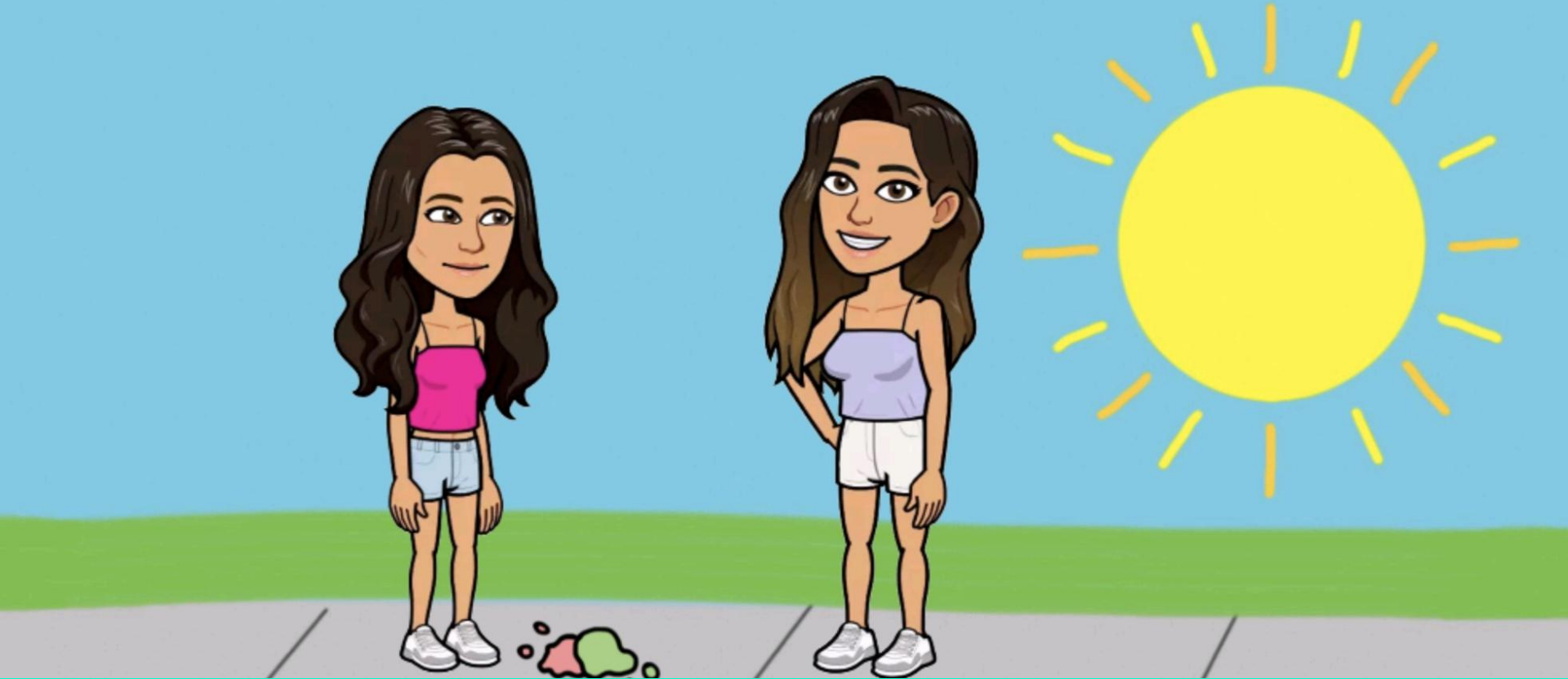


"Who's gravity? Why did they do this to my ice cream?" Sophia wails.



Caitlin laughs.

"No, gravity isn't a person. It's what causes free fall, which is what made your ice cream fall." Caitlin explains to Sophia.

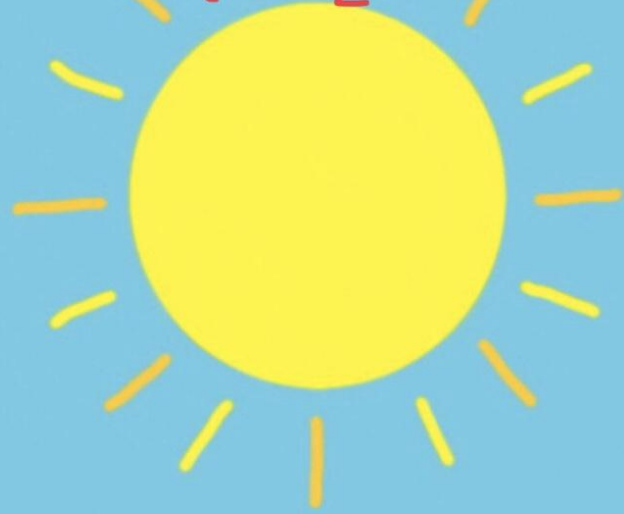


“Anything falling vertically on Earth has an acceleration of 9.81 m/s^2 downward. When the ice cream dropped, the initial velocity was 0 m/s , which means it wasn't moving at the start,” Caitlin explains.

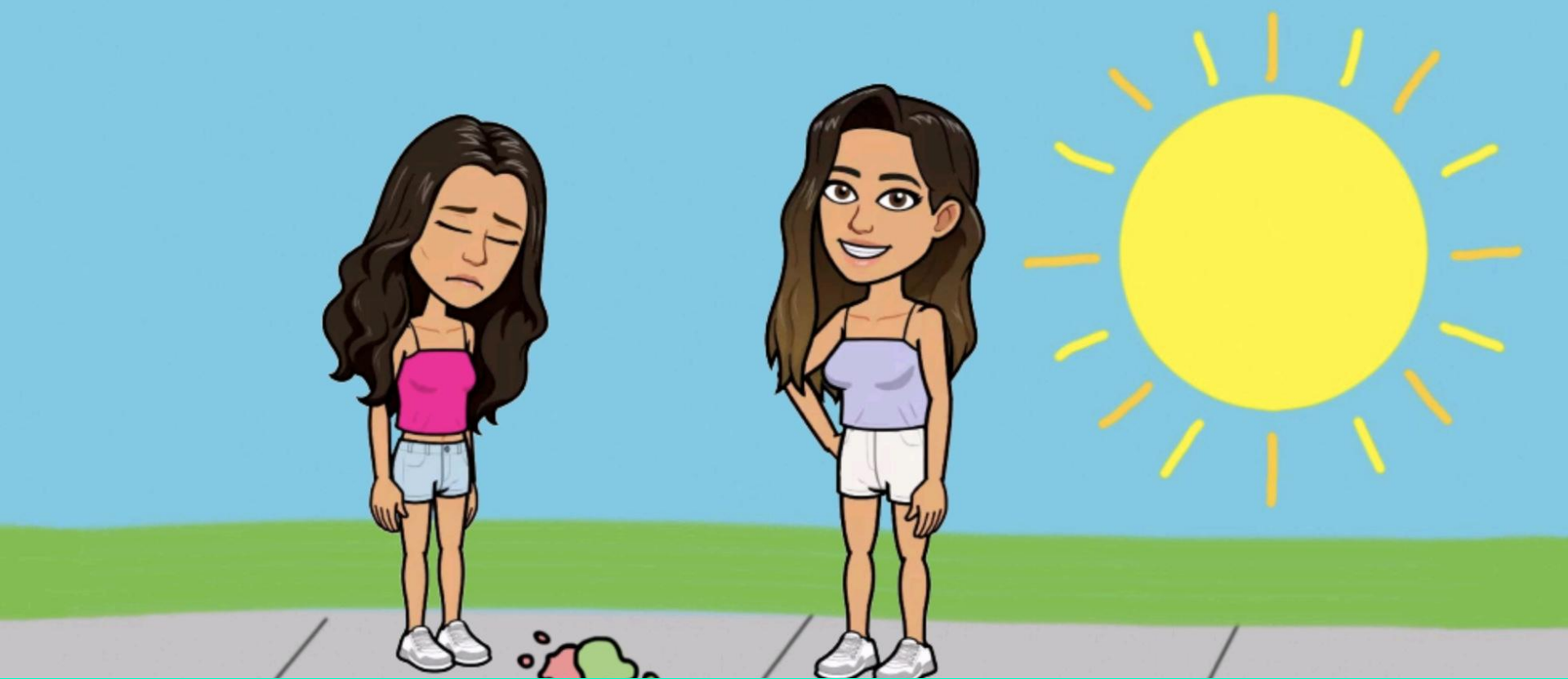
$$v_f = v_i + at$$

$$v_f^2 = v_i^2 + 2ad$$

$$d = v_i t + \frac{1}{2} at^2$$



"We can use the formulas $v_f = v_i + at$, $v_f^2 = v_i^2 + 2ad$ and $d = v_i t + \frac{1}{2} at^2$ to find the final velocity, the time the ice cream was in the air and how far it fell, since we know acceleration is 9.81 m/s^2 and the initial velocity is 0 m/s ," Caitlin explains further.



"Oh wow, that's so cool!" Sophia exclaims, "But that doesn't bring my ice cream back," she frowns.



Since Sophia listened to Caitlin as she taught her about free fall, Caitlin rewarded her with more ice cream. Sophia learned physics today and now she can make sure her ice cream doesn't fall again!



The End