

Name _____ Date _____

Archimedes and the Golden Crown

In the first century BC, Archimedes was asked by King Hiero to help solve a problem. The king had commissioned a goldsmith to create a crown from a quantity of pure gold, and the goldsmith complied. He delivered to the king a beautiful crown and the king was quite pleased.

However, the king soon began to hear rumors that the goldsmith had stolen the king's gold by substituting another substance for some of the gold used to make the crown, and keeping the gold that was left over. Because of these rumors, the king suspected that the gold crown was not authentic and that the goldsmith was a fraud. But how was he to prove his suspicions? The crown, after all, appeared to weigh the same as the amount of gold he had given to the goldsmith. King Hiero asked Archimedes to help him determine the truth.

Later, with this dilemma on his mind, Archimedes drew a bath. Being lost in his thoughts on the problem, Archimedes did not pay close attention to the bathwater and filled the tub to the top. As he stepped into the bath, the water began to flow over the top and onto the floor. Eureka! Archimedes had found a way to prove the crown's authenticity.



Based on this story, describe how Archimedes might prove whether the golden crown was real and whether the goldsmith was a fraud.