Case Study

The Chips Ahoy! 1,000 Chips Challenge

Nabisco, the maker of Chips Ahoy! cookies, challenged students across the nation to confirm the cookie maker's claim that there are [at least] 1000 chocolate chips in every 18-ounce bag of Chips Ahoy! cookies. According to the folks at Nabisco, a chocolate chip is defined as "...any distinct piece of chocolate that is baked into or on top of the cookie dough regardless of whether or not it is 100% whole." Students competed for $25,000 in scholarships and other prizes for participating in the Challenge.

As reported by Brad Warner and Jim Rutledge in the paper "Checking the Chips Ahoy! Guarantee" (*Chance*, Vol. 12(1), pp. 10–14), one such group that participated in the Challenge was an introductory statistics class at the United States Air Force Academy. With chocolate chips on their minds, cadets and faculty accepted the Challenge. Friends and families of the cadets sent 275 bags of Chips Ahoy! cookies from all over the country. From the 275 bags, 42 were randomly selected for the study, while the other bags were used to keep cadet morale high during counting.

For each of the 42 bags selected for the study, the cadets dissolved the cookies in water to separate the chips, and then counted the chips. The following table gives the number of chips per bag for these 42 bags.

After studying confidence intervals in this chapter, you will be asked to analyze these data for the purpose of estimating the mean number of chips per bag for all bags of Chips Ahoy! cookies.

1200	1219	1103	1213	1258	1325	1295
1247	1098	1185	1087	1377	1363	1121
1279	1269	1199	1244	1294	1356	1137
1545	1135	1143	1215	1402	1419	1166
1132	1514	1270	1345	1214	1154	1307
1293	1546	1228	1239	1440	1219	1191