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Using Statistics to Explore Attitudes Towards Gene-Editing

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CRISPR-Cas9 is a gene-editing technology with potential to expand the agricultural industry and improve human health. However, this technology may have unforeseeable consequences and adverse effects for society. Statistical procedures are often used to study public perceptions of controversial technologies. In this unit plan, students will design and administer surveys to investigate how their peers feel about various applications of gene-editing technology. In the process, students will apply random sampling methods and learn how to minimize response bias. Once their surveys are completed, students will analyze the results using contingency tables, confidence intervals, and hypothesis tests. The ultimate goal of this unit will be to help students to create clear policies for regulating the use of CRISPR-Cas9 and defend these policies with their statistical findings.

(Developed for AP Statistics, grades 10-12; recommended for AP Statistics, grades 10-12)