**Investigating Body Mass Index**

**Subject area**: Social Sciences, Introduction to Statistics

**Grade level/band:** 11–12

**STUDENT PROMPT SECTION**

1. **Task context**:

Obesity in the United States has increasingly been cited as a national health issue over the past several decades. Many health risks are associated with obesity and the increase in obesity rates has placed a significant burden on the health care system, resulting in increased costs. As a beginning statistician, you have the opportunity to join in the national discussion on this important topic.

For this task, begin by researching the subject of obesity using reputable sources. Consider the following questions:

* How is obesity defined?
* Is a person’s weight the only indicator of obesity?
* What are some health risks and costs of obesity?

Develop a research question concerning student obesity that you will be able to answer using statistics. Then, gather height, weight, and age data from students at your school using a sample size of (*n* > 30). Consider ways you can collect data anonymously in order to protect individuals and the sensitive nature of the data.

Compute the body mass index for the sample (See references to BMI calculators in the resources below). Then, create a histogram of the BMI for your sample and describe the distribution of the BMI data in terms of the center, symmetry, and existence of outliers. How does the distribution of your sample compare to published data for the age group of your sample?

1. **The task**:

Prepare a 2- to 3-page written report that provides background information about obesity and discusses the use of BMI to measure obesity. Describe your data collection methodology, include your analyses of the data and its distribution, and present conclusions about the healthy weight of your sample.

Your final product should:

* Include an evaluation of any other possible methods of determining obesity.
* Discuss any limitations of the study due to data gathering.
* Use the language and terminology of statistics appropriately.
* Use in-text citations correctly and include a Works Cited page using MLA format or another style that your instructor selects.

1. **Materials/resources:**

* Base your research on reliable Internet web sites, databases, and journals. Consult a reference librarian at your local library or your instructor to ascertain the reliability of your sources if you have questions.
* Use a BMI calculator from the National Institutes of Health (http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm) or the Centers for Disease Control and Prevention (http://www.cdc.gov/healthyweight/assessing/bmi/).
* You should use statistical technology to calculate appropriate descriptive statistics and to generate the histogram.

1. **Time requirements**:

You have about two weeks to complete the task. You will have some in-class time to introduce the project and to ask initial questions, but the task will be primarily be completed out of class.