**Total Time needed 1 hour 40 minutes**

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| **Handouts:**   * Predicting Height Task | **Materials:**   * TI-Navigator * TI-Nspires |

**Objectives**

The students will collect and analyze data to determine the whether foot length or arm span is a better predictor of height.

**Questioning Portion (15 min)**

*It has been said that there are predictors of a person’s height.*

1. *What questions can we ask regarding predictors of height?*

Anticipated responses:

* What is the better predictor?
* How accurate can our predictions be?
* Possible predictors: Shoe size, arm span, genetics, parents’ heights, other bodily ratios, age.

Send students a **QUICKPOLL** to retrieve one of these from each student.

Once a list of questions is displayed, the teacher will lead students in a discussion of the following question:

1. *What questions can we answer today about predictors of height?*

For the purpose of this task, reveal to the students that we will focus on determining if ***foot length or arm span (fingertip to fingertip)*** is the better predictor.

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**Data Collection and Analysis Portion (40 min)**

Questions 3 and 4 will be discussed as a group. Because measurements will be needed from every person, there will be only one large data set consisting of heights, arm spans, and foot lengths. Make sure the students have carefully considered how to collect the information. Foot length, for example, can be measured in slightly different ways. Data collection should be done in groups of four. Each group should collect the measurements and submit them via **QUICKPOLL.**

1. *To answer our question, what information will we need?*
2. *How will we collect this information?*

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**Data Analysis (30 minutes)**

Once the data set has been collected, it should be sent back to the students. They should then use this information to answer questions 5 and 6. Remind the students that they are working with a new type of data set (quantitative vs. quantitative), so they may want to refer to the help pages to determine if any new types of analysis are available.

1. *How might you use the collected information as a basis for answering your question?*

***STOP****. Before you begin collecting data, clear your plan with one of the StaRT Team members.*

1. *What does your information tell you about the answer to your question? Use pictures, symbols, and/or words to clearly communicate and support your conclusions.*

Anticipated responses:

* Students might perform some univariate analysis.
* Students will perform linear regression.
* Some students might perform multiple types of regression to find the highest r.
* Students may create scatterplots. They should pay attention to the proximity of the points to the line of best fit and the overall pattern.

**Communicating Final Results (15 min)**

Students should discuss their complete analysis. The teacher may need to randomly select students to jumpstart the communication.

**Total time: 1 hours 40 minutes**