

## Data About Us

### Investigation 4    Coordinate Graphs Day 1            4.1    Relating Height to Arm Span

#### Connection

Prior Work	Current Big Idea	Future Work
<ul style="list-style-type: none"> <li>Collect Data.</li> <li>Organize Data.</li> </ul>	<ul style="list-style-type: none"> <li>Use coordinate graphs to organize two sets of data.</li> </ul>	<ul style="list-style-type: none"> <li>Use coordinate graphs to show how two sets of data are related to each other.</li> </ul>

#### Lesson Process

Steps	Student activity	Teacher Support	Comment/Evaluation
<b>Launch</b>  10-15 minutes	<ul style="list-style-type: none"> <li>Work with teacher and class in locating points on the coordinate graph.</li> <li>Locate points that specify the height and arm span from given data.</li> </ul>	<ul style="list-style-type: none"> <li>Introduce coordinate graphs by using the data and graph shown on page 43.</li> <li>Student may locate points from the sample data by placing colored dots on the grid.</li> <li>Focus students on the axes and discuss how they are labeled and scaled.</li> <li>Once the data have been gathered and students are ready to work on organizing and interpreting the data, bring the class back to revisit the problem statements.</li> <li>Explain that we are interested in how</li> </ul>	<ul style="list-style-type: none"> <li>Emphasize the point that the coordinate graph gives a person the opportunity to find out interesting things as to how two sets of data are related to each other.</li> <li>Geometer's SketchPad may be used to plot the points from the given data.</li> </ul>

Steps	Student activity	Teacher Support	Comment/Evaluation
		<p>the two variables are, or seem to be, related.</p> <ul style="list-style-type: none"> <li>Proposed using a double bar graph to represent the data for each student.</li> <li>Or, proposed making a back-to-back stem plot with height on one side and arm span on the other.</li> </ul>	
<p><b>Explore</b> 15-20 minutes</p>	<ul style="list-style-type: none"> <li>Complete Problem 4,1 and Problem 4.1 Follow-Up with partner and with group.</li> </ul>	<ul style="list-style-type: none"> <li>Students should make a coordinate graph to display the data for their class.</li> <li>Which measure should go on the horizontal axis and which should go on the vertical axis?</li> <li>What is the range of measures for the horizontal axis? The vertical axis?</li> <li>What labeling scheme will show all of the data I the space you have for the graph?</li> <li>What kind of scale?</li> </ul>	<ul style="list-style-type: none"> <li>Students should have a good idea about what scales make sense before answering the Follow-Up questions.</li> </ul>
<p><b>Summarize</b> 8-10 minutes</p>	<ul style="list-style-type: none"> <li>Share graphs with class.</li> </ul>	<ul style="list-style-type: none"> <li>Ask students to share graphs with the class.</li> <li>Students should tell how they chose the scale or labeling scheme for each axis.</li> <li>Discuss which graphs seem to show the data best and why.</li> </ul>	<ul style="list-style-type: none"> <li>Student should understand what the three different regions of the graph represent:: the line represents points where height equals arm span; the region above the line represents points where arm span is greater than heights, and the region below the line represents points where height is greater than arm</li> </ul>

<b>Steps</b>	<b>Student activity</b>	<b>Teacher Support</b>	<b>Comment/Evaluation</b>
			span.
<b>Homework</b>	<ul style="list-style-type: none"><li>• ACE questions 1-2.</li></ul>		

## Data About Us

### Investigation 4    Coordinate Graphs Day 2            4.2    Relating Travel Time to Distance

#### Connection

Prior Work	Current Big Idea	Future Work
<ul style="list-style-type: none"> <li>Create coordinate graph from given set of data.</li> </ul>	<ul style="list-style-type: none"> <li>Analyze data by using coordinate graphs to explore relationships among variables.</li> <li>Explore intervals for scaling the vertical axis and the horizontal axis.</li> </ul>	<ul style="list-style-type: none"> <li>Represent data to aid with statistical analysis.</li> </ul>

#### Lesson Process

Steps	Student activity	Teacher Support	Comment/Evaluation
<b>Launch</b> 10-15 minutes	<ul style="list-style-type: none"> <li>Refer to data from Investigation 3.</li> <li>Create coordinate graph using data from Investigation 3.</li> </ul>	<ul style="list-style-type: none"> <li>Spend time discussing the scale used for each axis.</li> <li>Students need to understand how the scale is related to the data.</li> </ul>	<ul style="list-style-type: none"> <li>The graph may be reproduced on Geometer's SketchPad for use in the discussion.</li> </ul>
<b>Explore</b> 15-20 minutes	<ul style="list-style-type: none"> <li>Complete Problem 4.2 and Problem 4.2 Follow-Up with partner or with graph.</li> <li>Start on Mathematical Reflections.</li> </ul>	<ul style="list-style-type: none"> <li>Help students write justifications for their answers.</li> </ul>	

<b>Steps</b>	<b>Student activity</b>	<b>Teacher Support</b>	<b>Comment/Evaluation</b>
<b>Summarize</b> 8-10 minutes	<ul style="list-style-type: none"> <li>Share answers to part B with class.</li> </ul>	<ul style="list-style-type: none"> <li>Ask questions to clarify how students read the graph.</li> </ul>	
<b>Homework</b>	<ul style="list-style-type: none"> <li>ACE question 5.</li> <li>Complete Mathematical Reflections.</li> </ul>		<ul style="list-style-type: none"> <li>Data for ACE questions 5 may be entered on MS Excel and completed using the scatter graph function and the bar graph function so that comparisons may be made.</li> <li>Geometer's SketchPad may be used to create the coordinate graph.</li> </ul>