



## Lesson Plan Challenge Sample

These lesson plan samples can be used to help guide your thinking for the Lesson Plan Challenge.

## Lesson Plan Challenge Sample: Intro to Stats Class

<b>Course Title:</b> Using real-world data to analyze and describe career pathways	<b>Grade Level:</b> Undergraduate level	<b>Duration:</b> 75 minutes
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<b>Materials/ Resources:</b> <ol style="list-style-type: none"> <li>1. Computer with Excel or Google Sheets</li> <li>2. CSV files from <a href="#">C2C Query Builder</a></li> <li>3. Intro to Stats Textbook</li> <li>4. Projector with screenshare for instruction</li> </ol>	<b>Target Audience:</b> In-person undergraduate students taking an introduction to statistics or quantitative reasoning class on campus
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<b>Learning Objective</b>
Students will be able to organize a data set from C2C query builder, calculate and use descriptive statistics to describe patterns in education to career pathways

<b>Overview of Lesson Plan:</b>		
Time	Task	Materials
10 minutes	Introduction	C2C Query Builder
15 minutes	Data Familiarization and Cleaning	Computers, CSV files
30 minutes	Descriptive Stats Computation	Intro to Stats textbook
15 minutes	Interpretation and Description Discussion	All

<b>Lesson Plan Details</b>		
Time Stamp	Activity and Instructions	Notes
15 minutes	<ul style="list-style-type: none"> <li>● Introduction: Framing               <ul style="list-style-type: none"> <li>○ Introduce the purpose of</li> </ul> </li> </ul>	Ensure students are aware of how C2C collects its

	<p>descriptive statistics</p> <ul style="list-style-type: none"> <li>○ Introduce students to C2C Student Pathways Dashboard</li> <li>○ Guide students to download the <a href="#">Pathways to College and Beyond Query Builder data set</a></li> </ul>	<p>data as an Statewide longitudinal data system</p> <p>Emphasize the purpose of the lesson is to focus on description rather than prediction or causation</p> <p>Walk through Student Pathways Dashboard with students</p> <p>Explain the csv files are powering the data behind visualizations</p> <p>Walk students through downloading Pathways to College and Beyond Data files for all six visualizations.</p> <p><i>*Emphasize we will only be working with wage_award_data_details .csv file and enrollment_data_details.csv file</i></p>
15 minutes	<p>Data Familiarization and Cleaning</p> <p>Select one of the CSV files and inspect it.</p> <ul style="list-style-type: none"> <li>● Identify variables such as completion outcomes, pathway types, earnings measure, etc. Ask questions like: <ul style="list-style-type: none"> <li>○ What is the unit of analysis?</li> <li>○ What are the different data types in the file (e.g., categorical, numeric)?</li> <li>○ Do you know what all the categorical variables mean?</li> </ul> </li> </ul>	<p>Point out when some values are missing and what <a href="#">cell suppression</a> is</p> <p><i>*Ask students to identify which variables are categorical and which are numerical</i></p>

	<ul style="list-style-type: none"> <li>• Discuss why it's important to organize data before analysis</li> </ul>	
30 minutes	<p>Descriptive Stats Computation</p> <ul style="list-style-type: none"> <li>• Ask students to work in pairs to complete the following: <ul style="list-style-type: none"> <li>○ Using the wage_award_data_details file, calculate the mean and median earnings for at least one education pathway across all school districts.</li> <li>○ Using the enrollment_data_details file, create a frequency table showing the proportion of students in different postsecondary outcomes</li> <li>○ Using a file of your choice, create at least one bar chart or summary table that answers a question about the data.</li> </ul> </li> <li>• Prompt students to write out interpretations to share with the class</li> </ul>	<p>Walk around the room to support interpretations, answer questions, and ensure accuracy</p> <p>Provide a 10 minutes time warning for students to get started on their written interpretations</p>
15 minutes	<p>Interpretation and Description Discussion</p> <ul style="list-style-type: none"> <li>• Ask students to share their written interpretations</li> <li>• What does the median tell us that the mean does not?</li> <li>• What might explain why outcome patterns vary across school districts?</li> <li>• What patterns can we clearly describe with these files and why?</li> <li>• What questions would you like to answer that you cannot with this data?</li> <li>• What limitations does only using</li> </ul>	<p>Reinforce that written interpretations describe outcomes rather than explain or predict.</p> <p>Ensure to reinforce statistical boundaries</p> <p>Notice and address where student interpretations may have gaps</p>

	descriptive stats have?	
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**Exit Ticket or Homework Assignment**

Students will demonstrate in pairs their use of statistical language, such as mean, median, proportion, etc. They will also demonstrate their understanding of written outcomes by sharing out to the class.