

Lesson Plan- Statistics

Teacher: Ms. Vansuch

Subject & Grade: 7th Grade Math

OBJECTIVE(S)/STANDARD(S) What will your students be able to do? Reference Common Core or your state's standards, as applicable.	CONNECTION TO ACHIEVEMENT GOAL(S) How does the objective connect to the goal(s) you have for your students this year?
<p>SWBAT make predictions about a population by analyzing a sample.</p> <p>7.SP.A.1 and 7.SP.A.2</p>	<p>Our goal is that the class master 80% of the common core standards by the end of the year. In order to achieve this goal, they must also master statistics standards.</p>
PREREQUISITE SKILLS What will your students need to know to master the grade-level objective?	DIAGNOSTIC How will you assess students' mastery of these foundational skills?
<p>Students must be able to understand a mean, median, mode, and range. We previously reviewed this during the week.</p> <p>Students must also be able to find equivalent ratios. This will be reviewed, and anchor charts are present on the walls.</p>	<p>Based on diagnostic data, almost no students have any knowledge of 6th grade statistics standards.</p>

ASSESSMENT

How will you know whether your students have made progress toward the objective? How and when will you assess mastery?

I will assess students' exit ticket performance. Throughout the class, I will monitor their progress.

KEY POINTS

Key points are student-facing statements that include important content students need to know to be successful in the lesson. What three to five key points will you emphasize?

- Summary statistics can be used to make predictions about an entire population
- Population predictions can be made using equivalent ratios
- Education leads to higher wages

<p>OPENING/HOOK (10 min.)</p> <p>How will you communicate <i>what</i> is about to happen?</p> <p>How will you communicate <i>how</i> it will happen?</p> <p>How will you communicate its <i>importance</i>?</p> <p>How will you communicate <i>connections</i> to previous lessons?</p> <p>How will you engage students and capture their interest?</p>	MATERIALS
<p>Students will examine streaming data using their statistics knowledge.</p>	<p>Deliverable: Do Now</p>
<p>INTRODUCTION OF NEW MATERIAL (10 min.)</p> <p>What key points will you emphasize and reiterate?</p> <p>How will you ensure that students actively take in information?</p> <p>Which potential misunderstandings will you anticipate?</p> <p>Why will students be engaged/interested?</p>	MATERIALS
<p>We will make predictions about the number of highly educated people in Ward 7 and Ward 3 in DC using our statistics knowledge. We will draw conclusions on how that impacts local communities.</p>	<p>Deliverable: Class Notes</p>

<p>GUIDED PRACTICE (15 min.)</p> <p>How will you ensure that all students have multiple opportunities to practice?</p> <p>How will you scaffold practice exercises from easy to hard?</p> <p>Why will students be engaged/interested?</p> <p>How will you monitor and correct student performance?</p> <p>How will you clearly state and model behavioral expectations?</p>	<p>MATERIALS</p>
<p>Students will do a similar analysis for salary data in Ward 7 and Ward 3 in DC. Students will similarly draw conclusions about impact on local communities.</p>	<p>Deliverable: Partner Practice</p>
<p>INDEPENDENT PRACTICE (20 min.)</p> <p>In what ways will students attempt to demonstrate independent mastery of the objective?</p> <p>Why will students be engaged/interested?</p> <p>How will you provide opportunities for extension?</p> <p>How will you clearly state and model behavioral expectations?</p>	<p>MATERIALS</p>
<p>Students will first attempt the material on their own in the “practice and score”. We will go over the results as a class and students will grade themselves. Based on these results, students will complete differentiated practice independently.</p>	<p>Deliverable: Practice and Score, Differentiated Practice</p>

<p>CLOSING (10 min.)</p> <p>How will students summarize what they learned?</p> <p>How will students be asked to state the significance of what they learned?</p> <p>How will you provide all students with opportunities to demonstrate mastery of (or progress toward) the objective?</p> <p>Why will students be engaged/interested?</p>	<p>MATERIALS</p>
<p>We will discuss our conclusions about the value of a college education and how math helped us calculate this. Students will then complete an exit ticket to demonstrate their mastery.</p>	<p>Deliverable: Exit Ticket</p>

Handouts & Resources

Name: _____
Date: Thursday, February 28th, 2019

Group: A B C
Class: _____

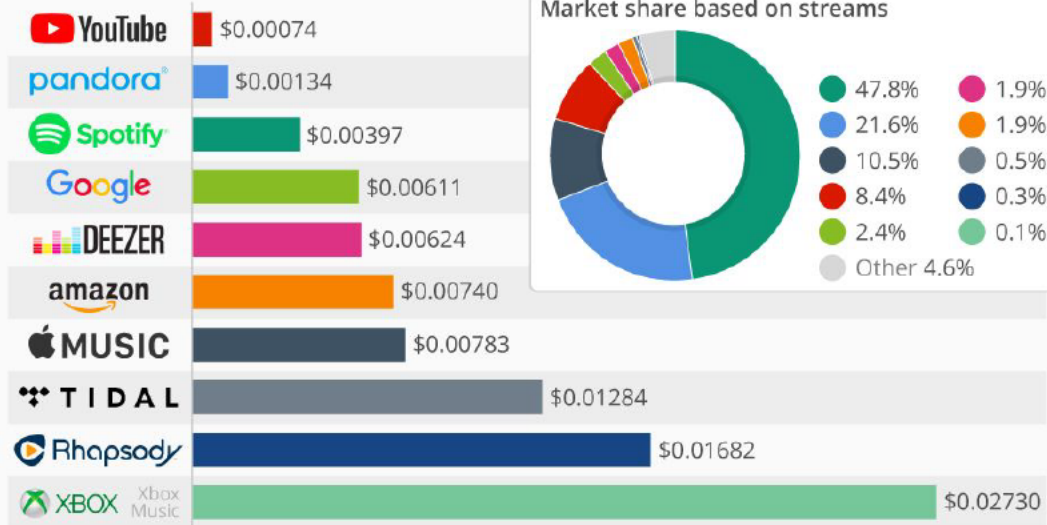
Introduction to Statistics (Module 5, Lesson 20)

Objective: SWBAT make predictions about a population by analyzing a sample.
Standard: 7.SP.A.1 and 7.SP.A.2

Do Now: Blast from the Past

Music-Streaming: Who Pays Best?

Gross payout to labels per stream by selected streaming services*



* Data based on a mid-sized indie label with an approximately 200+ album catalog now generating over 200m+ streams annually.
@StatistaCharts Source: The Trichordist

statista

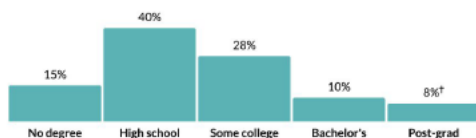
- 1) Which music platforms pay the best? _____
- 2) Which platforms pay the worst? _____
- 3) What surprises you the most? Why? _____
- 4) How much more money do you make with Jay-Z's Tidal streaming service than Spotify? _____

Deep Dive in Data: Education in DC

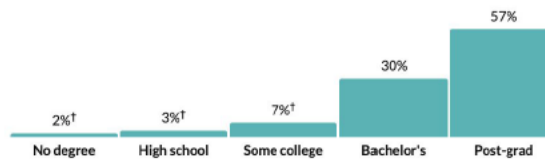
We're going to take a deeper dive into Ward 7 in DC, the location of Kelly Miller Middle School. There are approximately 80,000 in Ward 7 and approximately 80,000 in Ward 3 in DC.



Educational Attainment of 25+ Year-Olds in Ward 7



Educational Attainment of 25+ Year-Olds in Ward 3



$$\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$$

1) About how many adults living in Ward 7 have a bachelor's degree or higher?

2) About how many adults living in Ward 3 have a bachelor's degree or higher?

3) How many more people in Ward 3 have a bachelor's degree or higher than Ward 7? _____

Stop and Jet

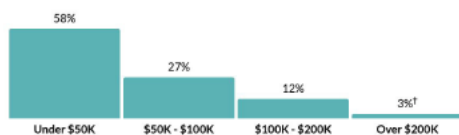
What do you think is the impact of having more people with bachelor's degrees or higher? _____

Partner Practice

Keeping in mind that both Ward 7 and Ward 3 have about 80,000 people each, analyze the following data with your partner.

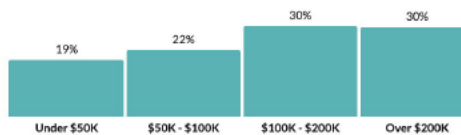
Household Income in Ward 7

Household income



Household Income in Ward 3

Household income



1) How many people in Ward 7 make under \$50,000 a year? _____ Ward 3? _____

2) How many people in Ward 7 make over \$200,000 a year? _____ Ward 3? _____

3) Do you think there is any impact on each community by the differences in income? Why or why not?

Practice and Score

About how many people in Ward 7 make between \$50,000 and \$100,000 a year? _____ Ward 3? _____

Mild (None correct)

Medium (Part correct)

Spicy (All correct)

Differentiated Practice

Mild

In a random survey of Californians, 58% voted in favor of a new law. If the population of California is 37,700,000 people, how many are in favor of the law?

Medium

The librarian is trying to determine what types of books to sell at the upcoming school book fair. She conducted a random survey of students regarding their favorite genre of literature, and got the following results. What percent of the books she sells should be sports themed?

Mystery	Science Fiction	Romance	Sports
23	15	2	10

Spicy

A store sells 3 types of pants: jeans, capris, and cargos. The store workers survey 50 customers at random about their favorite type of pants. 25 customers reported liking jeans, 15 customers chose capris, and 10 customers reported liking cargos the best. If the store plans to order 450 pairs of pants, how many pairs of jeans should they order?

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Introduction to Statistics (Module 5, Lesson 20) Exit Ticket

Exit Ticket

In a random survey of DC residents, 67% said they approve of the mayor. There are about 700,000 people in DC. How many people approve of the mayor?