re(Solve) MATHS BY INQUIRY

SPORTS SALARIES: Sequence Overview

Summary of learning goals

Students explore variation in the salaries of NBA players. Using real world data they calculate means and medians, draw graphs, compare findings, and investigate the implications of obtaining data through random sampling.

Australian Curriculum: Mathematics (Year 8)

ACMSP284: Investigate techniques for collecting data, including census, sampling and observation.

ACMSP206: Explore the practicalities and implications of obtaining data through sampling using a variety of investigative processes.

ACMSP293: Explore the variation of means and proportions of random samples drawn from the same population.

ACMSP207: Investigate the effect of individual data values, including outliers, on the mean and median.

Summary of lessons

Who is this Sequence for?

This sequence is for students who are familiar with working with measures of central tendency and are prepared to critically evaluate and compare datasets with varying medians and means.

Lesson 1: Salary Samples

Students are given an NBA "team", composed of a random sample of 15 NBA players. They graph the spread of salaries in their team and calculate the mean and median salaries. Students discuss how a real NBA team may be different from their randomly sampled teams.

Lesson 2: Working with a Salary Cap

Students are provided with NBA teams' salary data. They graph the spread of salaries in a single team and calculate the mean and median salaries. Students discuss how real NBA team data differs from their randomly sampled teams.

We value your feedback after these lessons via our website.

Reflection on this sequence

Rationale

The mean and median of a dataset tell us two different pieces of information about the spread and variation in that data. Looking at both the mean and the median simultaneously allows us to develop a much more nuanced image of that data. In this sequence students use mean and median to express variation and spread in a dataset, and to compare different datasets and draw conclusions.

Students also explore various implications of data sampling by comparing random samples of data from the same population and by comparing a random sample to a real world data sample.

reSolve Mathematics is Purposeful

- Salary caps that limit the amount of a team can spend on its players' salaries provide an interesting and unusual real-world context for an investigation into measures of central tendency and the implications of random sampling
- Students learn about the mathematical rules that govern professional sports teams and understand why these mathematical rules are useful and important in creating interesting sports matches.

reSolve Tasks are Inclusive and Challenging

- Students are asked to make inferences and draw conclusions of varying complexity based on the data presented.

reSolve Classrooms Have a Knowledge Building Culture

- Students compare and contract their findings and collaboratively build class graphs