

Mathematics

Stills from our new mathematics titles



$$\text{gradient} = \frac{4}{0.5} = 8 \text{ km/h}$$

$$d = 8t$$



Introducing Trigonometric Ratios

Trigonometric ratios have many practical uses in the building industry, engineering, astronomy and geography. This clip shows how to calculate sine, cosine and tangent for given angles in right-angled triangles. Follow along as the hypotenuse, adjacent and opposite sides are identified, and the relationships between side lengths and ratios are explored. Ideal for introducing or reinforcing concepts.



ACMMG223, ACMMG224

2015 | 6 min | Australia | CC | AR

Additional Resources

- Worksheet
- Suggested Responses

Relative Frequency of Events

This clip explores the probability of seeing Australian animals on a wildlife tour and uses relative frequency to describe the chances of seeing particular animals. Collected data is displayed in two-way tables and probabilities of 'and', 'or' events are calculated. This clip introduces and defines important terms like experimental probability, relative frequency, and complement. Ideal for applying mathematical concepts to real world situations.

ACMSP226, ACMSP205, ACMSP292

Additional Resources

- Worksheet
- Suggested Responses



2015 | 5 min | Australia | CC | AR

Drawing Prisms

This clip explores prisms and uses computer graphics to show the aerial, front and side views of many different prisms. Throughout the clip, students are prompted to make their own drawings of different views of 3-D prisms and to sketch the 3-D prism shape represented by the 2-D base (top) and faces (front and side) provided. Combination prisms are introduced.

ACMMG161, ACMMG140

Additional Resources

- Worksheet
- Suggested Responses



2015 | 4 min | Australia | CC | AR

Investigating Population Survey Data

In this clip, multiple surveys investigating the number of times Australians visit the beach each week are conducted and analysed. Follow along as the means and medians are calculated for each survey. How survey data was obtained and the impact on the results and reliability of the surveys are discussed. Ideal for applying mathematical concepts to real world situations.

ACMSP227, ACMSP206

Additional Resources

- Worksheet
- Suggested Responses



2015 | 5 min | Australia | CC | AR

Parallel and Perpendicular Lines

This clip demonstrates how to solve problems involving parallel and perpendicular lines. Methods for finding the gradient (slope) and equations of parallel and perpendicular lines are applied to different situations including plotting data relating to time and distance travelled by three joggers. The point-gradient formula is also introduced. Ideal for applying problem solving skills.

ACMNA238

Additional Resources

- Worksheet
- Suggested Responses



2015 | 6 min | Australia | CC | AR

Survey Data: Collecting and Displaying

In this clip, the results of student surveys are collated into tables and means are calculated. Students are asked to rate a music genre from 1 to 5, and in a separate survey, are asked to identify their favourite genre from a given list. This resource explores categorical and numerical data, relative frequency, sample size, variation of means, and column graph interpretation.

ACMSP293, ACMSP284

Additional Resources

- Worksheet
- Suggested Responses



2015 | 5 min | Australia | CC | AR

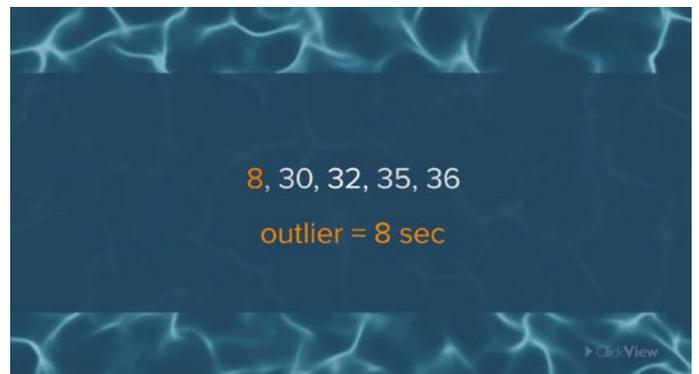
Mean, Median and Outliers

This clip explores the effect of outliers on measures of central tendency - mean and median. The lengths of time that swimmers stay underwater is collected, and mean and median values are calculated. Identify the outlier and discover the impact it has on the mean and median values.

ACMSP207

Additional Resources

- Worksheet
- Suggested Responses



2015 | 6 min | Australia | CC | AR

Histograms and Boxplots of Gym Membership

In this clip, histograms and boxplots are used to display the results of a study into the number of hours gym members use the gym each week. This clip introduces important terms and concepts including range and median values, upper and lower quartiles, left and right-skewed data, boxplot whiskers, and symmetrical and asymmetrical data displays.

ACMSP250, ACMSP249

Additional Resources

- Worksheet
- Suggested Responses



2015 | 6 min | Australia | CC | AR

Scatter Plots and Gym Training

In this clip, a series of scatterplots are used to show how regular gym attendance has an effect on variables such as resting heart rate, feelings of well-being and TV viewing habits. The data is collected through surveys of gym members, and scatterplots are constructed. This clip explores correlation, negative and positive, and lines of best fit.

ACMSP251

Additional Resources

- Worksheet
- Suggested Responses



2015 | 4 min | Australia | CC | AR

Bivariate Data and Pool Use

This clip investigates how the number of people at the local pool changes over the course of a day. The data is displayed in graphs showing pool patron numbers during each 2 hour time period. Follow along as lines and curves of best fit are drawn for the data and used to interpret the data. This clip explores parabolas, coefficient of determination, interpolation, and extrapolation.

ACMSP252

Additional Resources

- Worksheet
- Suggested Responses



2015 | 7 min | Australia | CC | AR

Evaluating Statistical Claims

This clip investigates statistical data and data displays used in the advertising of a new gym. Follow along to find the inconsistencies in the statistics, graphs and pie charts, and discover more about how the media can sometimes manipulate statistics and displays to support their claims.

ACMSP253

Additional Resources

- Worksheet
 - Suggested Responses
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2015 | 5 min | Australia | CC | AR