EdRugby Online Educational Resource

LESSON: Measuring up

LEVEL Upper primary

THEME: Game plan

DESCRIPTION:

Students are introduced to the concept of measuring and look at a range of units used. They measure their height and weight then calculate and compare with each other and Rugby players.

OUTCOMES

This lesson contributes to the achievement of the following unit outcomes

English

- With teacher guidance, identifies and discusses how linguistic structures and features work to shape readers' and viewers' understanding of texts.
- Draws on knowledge and linguistic structures and features to explain how texts are constructed.

Science

- Collects and records information as accurately as equipment permits and investigation requires.
- Uses instruments and techniques to provide accurate and reliable results.

Maths

- Estimates and calculates mentally, including adding and subtracting two-digit numbers and multiplying numbers to 10.
- Uses understood written methods to add and subtract any whole numbers.
- Classifies, sequences and tabulates data to help answer particular questions and varies the classification to answer the question.

SUGGESTED TIME:

2 X 40 minutes

WHAT YOU NEED:

- bathroom scales
- growth chart (use a ruler or tape measure to make some markings on an easily accessible wall)
- class copies of student handout (provided at the end of this lesson)
- computer, spreadsheet software, printer (optional)

australian RUGBY

PART 1 UNITS

a. Work with the whole class to collect a list of units of measurement.

Prompt questions may include:

What units of measurement are on a ruler?

How far is it to your house?

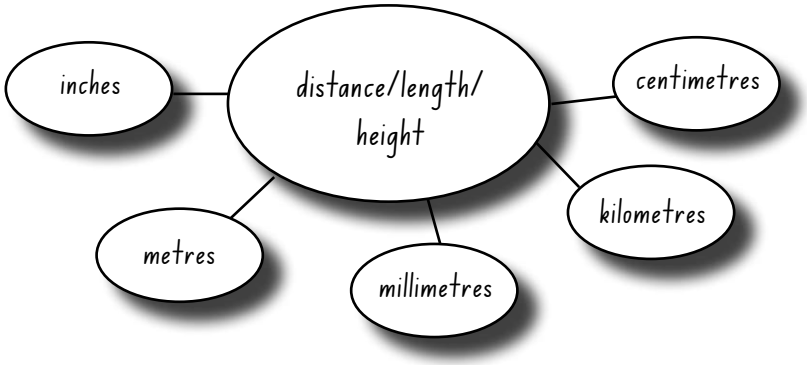
Do you know how heavy you are?

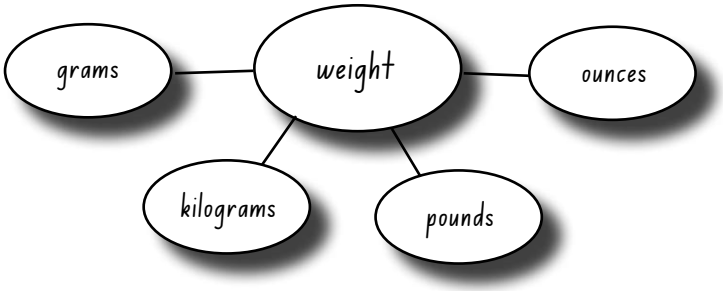
Are there other units used to describe how long something is?

How can you describe how heavy a chocolate bar is?

What units do we use to describe weight?

What is mass? (brief description of weight, mass)





b. Explain to the class that there are many different ways to describe how heavy or tall something is. There are different units of measurement used in different countries and for different reasons, depending on how heavy or tall something is. Australia, Europe and other parts of the world use the metric system. To describe mass and weight, we use grams (g) and kilograms (kg). To describe height, we use centimetres (cm) and metres (m).

c. Show the chocolate bar and read the mass in grams. Explain that it is sometimes easier to measure light things using grams and heavier things (like people) in kilograms. There are 1000 g in 1 kg.

Find an object such as a chair or table and measure its height in cm. Explain that it is sometimes easier to measure small things using cm and tall things using metres or even kilometres.

PART 2 MEASURING

Height

a. Hand out the student worksheets.

b. Use the bathroom scales to measure the weight of each student in the class. Record each result in the table; for example:

Name	Weight (in kg)	Height (in cm)
Alison Woolridge	30 kg	
Tam Nguenur	27 kg	

Alternatively, have students measure themselves for homework and bring the results to class.

c. Use the growth chart to measure the height of each student in the class. Record each result in the table.

d. Ask the class some questions about the results:

Which student weighs the least?

What is this student's mass in kg?

Which student is the tallest?

What is this student's height in cm?

Which student is the shortest?

PART 3 CALCULATING

a. Add the mass readings together and calculate the total mass of the class.

b. Add the height readings together and calculate the total height of the class.

c. Divide the total mass by the number in the class to calculate the class average.

For example: $\frac{\text{total mass}}{\text{no of students}}$ = class average

d. Repeat to find class average height.

e. (optional) If you have a computer and spreadsheet software, enter the data and draw graphs to represent the class results.

PART 4 COMPARING

a. Hand out student worksheets of Rugby players, directing their attention to the height and mass statistics.

Who is the heaviest player? How do you know?

Who is the lightest player?

What is this player's weight in kg?

Which player weighs the least?

Which player is the tallest?

What is this player's height in cm?

Which player is the shortest?

You may choose to extend the questioning to begin to link players' physical characteristics with factors such as speed, agility and playing position:

Why are some players heavier/lighter than others?

Why are some players taller/shorter than others?

What is a scrum? Which players would be most suited to a scrum? Why?

b. Ask students to compare the height and weight of the players to the height and weight of students in their class. Students should be able to describe the comparisons in sentences.

For example,

Phil Waugh is 175 cm tall, which is 71cm taller than any student in our class.

Chris Latham weighs 100kg. This is about three times our class average.

Guy Shepherdson is 27kg heavier than Drew Mitchell and 88kg heavier than Melissa in our class.

c. Discuss the foot and hand outlines, explaining that they are actual life-size tracings from Rugby players. Ask students to compare their own hand and (shoeless) foot size with that of an elite athlete.

Do you think hand and foot size gives a good indication of an athletes' power and strength?

PART 5 REFLECTION

Discuss the range of physical sizes in your class and in the Wallabies' Rugby team.

Reflect on the importance of having a range of shapes and sizes when forming a strong team. Identify skills and abilities suited to certain weights and heights.

PART 6 EXTENSION

Many of these extension activities relate closely to the core lesson. Select those appropriate to your available time, class interest level and ability.

- Draw bar graphs of the class statistics.
- Draw bar graphs of the Rugby players and compare.
- Add to the class results table by inserting a column for date of birth, nickname or other data.
- Measure, record and compare weights and heights from students in other classes and from teachers.
- Create a graph to compare statistics for your friends and family.
- Compare the average heights and weights for boys and girls. Is there a difference?
- Research the different positions in a Rugby team. Match body size with each position. Find out the key skills for each position.
- Introduce the differences between weight and mass.
- Ask students to research the nicknames of the Wallabies. Ask some questions to link the player to their nickname, such as 'Why is Ben Darwin called Door?'

GAME PLAN

STUDENT HANDOUT CLASS RESULTS

Name	Weight (in kg)	Height (in cm)
Totals		
Average		

STUDENT HANDOUT GRAPH PAPER

STUDENT HANDOUT PLAYER STATISTICS

Members of the Rugby World Cup 2007 Wallaby Squad.

Adam Ashley-Cooper
DOB: 27/3/1984
Height: 182cm
Weight: 98kg
Position: Centre/ Fullback
Nickname: Coops

Berrick Barnes
DOB: 28/5/1986
Height: 188cm
Weight: 87kg
Position: Flyhalf/ inside centre
Nickname: Barnesy

Alistair Baxter
DOB: 21/1/1977
Height: 190cm
Weight: 116kg
Position: Prop

Mark Chisholm
DOB: 18/9/1981
Height: 197cm
Weight: 115kg
Position: Lock/ Flanker
Nickname: Chiz

Sam Cordingley
DOB: 20/03/1976
Height: 178cm
Weight: 87kg
Position: Scrumhalf
Nickname: Valley

Matt Dunning
DOB: 19/12/1978
Height: 182cm
Weight: 115kg
Position: Prop
Nickname: Tuck

Rocky Elsom
DOB: 14/2/1983
Height: 197cm
Weight: 106kg
Position: Flanker/ Lock
Nickname: Rock

Adam Freier
DOB: 20/3/1980
Height: 175cm
Weight: 98kg
Position: Hooker
Nickname: Hassy

GAME PLAN

STUDENT HANDOUT PLAYER STATISTICS

Members of the Rugby World Cup 2007 Wallaby Squad.

Mark Gerrard
DOB: 4/9/1982
Height: 192cm
Weight: 102kg
Position: Wing/ Fullback
Nickname: Gerrardo

Matt Giteau
DOB: 29/9/1982
Height: 178cm
Weight: 85kg
Position: : Inside Centre/Flyhalf/ Scrumhalf
Nickname: Gits, 'Kid'

George Gregan (vc)
DOB: 29/4/1973
Height: 173cm
Weight: 79kg
Position: Scrumhalf
Nickname: Guv

Sean Hardman
DOB: 6/5/1977
Height: 183cm
Weight: 105kg
Position: Hooker

Stephen Hoiles
DOB: 13/10/1981
Height: 190cm
Weight: 98kg
Position: No 8/ Flanker
Nickname: Blossom

Greg Holmes
DOB: 11/6/1983
Height: 183cm
Weight: 112kg
Position: Prop
Nickname: Holmesy

Julian Huxley
DOB: 3/8/1979
Height: 186cm
Weight: 91kg
Position: Utility Back
Nickname: Hux

Stephen Larkham
DOB: 29/5/1974
Height: 189cm
Weight: 89kg
Position: Flyhalf
Nickname: Bernie

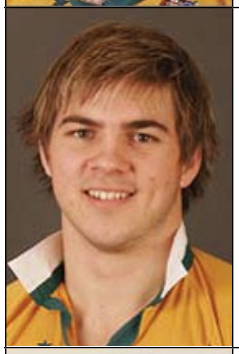
STUDENT HANDOUT PLAYER STATISTICS

Members of the Rugby World Cup 2007 Wallaby Squad.

Chris Latham
DOB: 8/9/1975
Height: 192cm
Weight: 100kg
Position: Fullback
Nickname: Latho

David Lyons
DOB: 16/6/1980
Height: 192cm
Weight: 117kg
Position: No.8/ Flanker
Nickname: Lino

Hugh McMeniman
DOB: 1/11/83
Height: 200cm
Weight: 114kg
Position: Lock/ Flanker
Nickname: Madness



Drew Mitchell
DOB: 26/3/84
Height: 182cm
Weight: 90kg
Position: Wing/ Full Back

Stephen Moore
DOB: 80/1/83
Height: 186cm
Weight: 112kg
Positon: Hooker
Nickname: Squeek

Stirling Mortlock(c)
DOB: 20/5/1977
Height: 191cm
Weight: 102kg
Position: Outside Centre
Nickname: Stirlo/Snorky

Wycliff Palu
DOB: 27/7/1982
Height: 194cm
Weight: 120kg
Position: no.8/ Flanker
Nickname: Cliffy

Nathan Sharpe
DOB: 26/2/1978
Height: 200cm
Weight: 115kg
Position: Lock
Nickname: Sharpey

STUDENT HANDOUT PLAYER STATISTICS

Members of the Rugby World Cup 2007 Wallaby Squad.

Guy Shepherdson
DOB: 17/2/82
Height: 186cm
Weight: 117kg
Position: Prop
Nickname: Shep/ Pink

George Smith
DOB: 14/7/1980
Height: 180cm
Weight: 104kg
Position: Flanker
Nickname: Jorge

Scott Staniforth
DOB: 12/12/1977
Height: 188cm
Weight: 99kg
Position: Centre
Nickname: Spanner

Lote Tuqiri
DOB: 23/9/1979
Height: 191cm
Weight: 103kg
Position: Wing/ Centre
Nickame: LT, the Dark Shark

Dan Vickerman
DOB: 4/6/1979
Height: 204cm
Weight: 115kg
Position: Lock
Nickname: Vicks

Phil Waugh (vc)
DOB: 22/9/1979
Height: 175cm
Weight: 100kg
Position: Flanker
Nickname: Waughy

STUDENT HANDOUT OWEN FINEGAN'S FOOT OUTLINE

FRONT HALF

Join Line

Owen Finegan
DOB: 22/4/1972
Height: 197cm
Weight: 119kg
Position: Lock
Nickame: Melon

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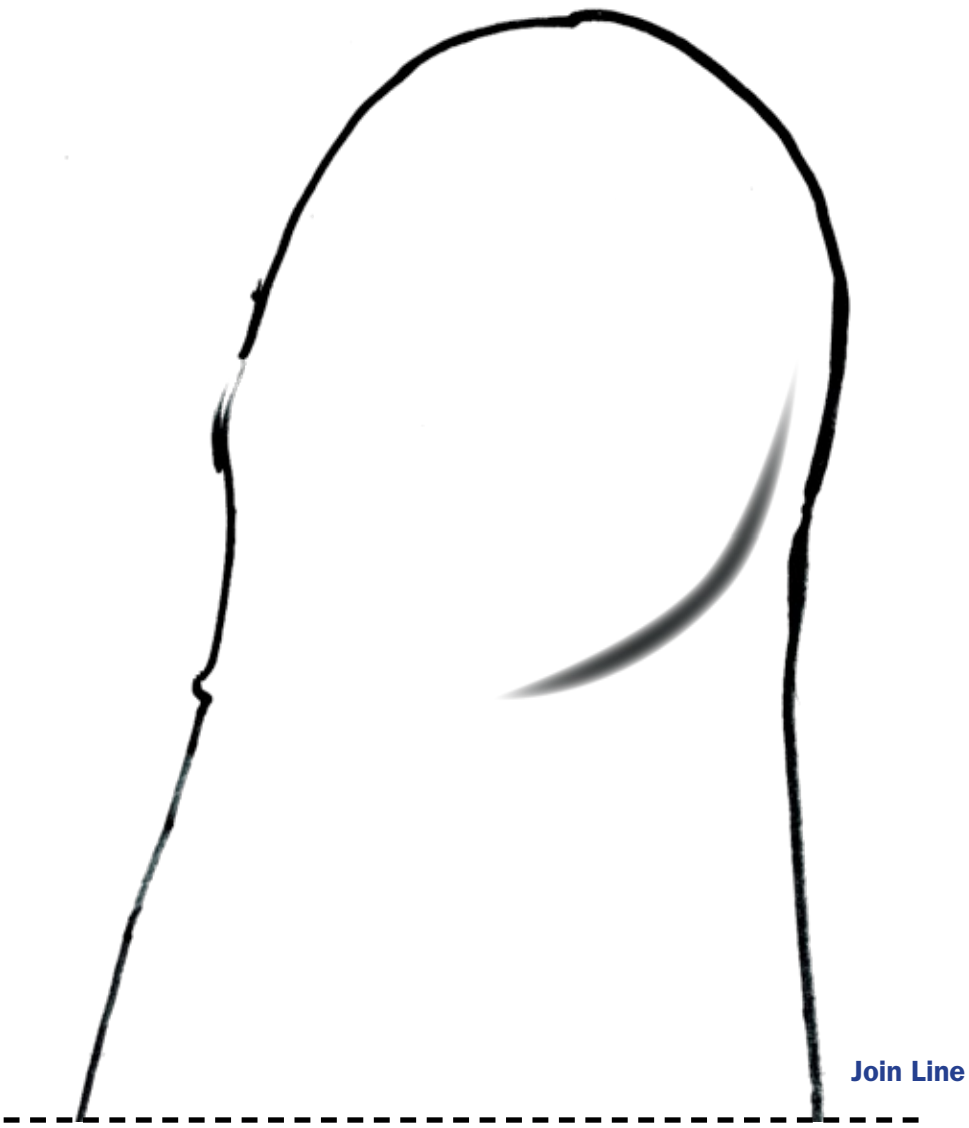
STUDENT HANDOUT OWEN FINEGAN'S FOOT OUTLINE

BACK HALF



STUDENT HANDOUT BEN DARWIN'S HAND OUTLINE

Ben Darwin
DOB: 17/10/1976
Height: 186cm
Weight: 115kg
Position: Tighthead Prop
Nickname: Doo

2003 Rugby World Cup Wallaby