

Stage 2 Outcomes Based Assessment Tasks

MEASUREMENT

NSW Country Areas Program
NSW Department of Education and Training

Stage Two - Measurement

STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

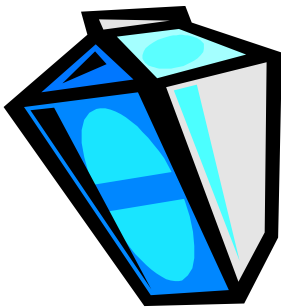
Stage of Task	2 MEASUREMENT
Outcome	1. Measurement attributes and tools
Outcome Descriptor	Identifies and names the measurements that can be made for an object. Explains the need for standard units of measurement.
Stage	Number of Indicator Questions
1	2
2	5
3	1

Question	1	2	3	4	5	6	7	8				
Stage	1	1	2	2	2	2	2	3				
Indicator Description												
<ul style="list-style-type: none"> • Responds to a direction to find a container which holds less then, more than or the same as a cup. 	*											
<ul style="list-style-type: none"> • Describes water in terms of temperature, but not in terms of length. 		*										
<ul style="list-style-type: none"> • Explains that the length, width and area of the tabletop can be measured. 			*									
<ul style="list-style-type: none"> • Explains that the length, width and area of the table top can be measured. 				*								
<ul style="list-style-type: none"> • Explains that the height, mass and volume of the human body can be measured. 					*							
<ul style="list-style-type: none"> • Explains the differing results obtained when making the same measurement using different informal units. • Explains that the capacity and mass of a cup can be measured. 						*						
<ul style="list-style-type: none"> • Explains that the capacity and mass of a cup can be measured. 							*					
<ul style="list-style-type: none"> • Makes determinations concerning the best unit for measuring medium to long distances. 								*				

ASSESSMENT TASK FOR STAGE 2
MEASUREMENT 1: Measurement Attributes, Units and Tools

STAGE 1: 2 QUESTIONS

1. Match the pictures to the words that describe the amount of water each container can hold compared to the cup.



same as

more than

less than

2. Match the word to describe the temperature a block of ice from the freezer compared to water from a tap.

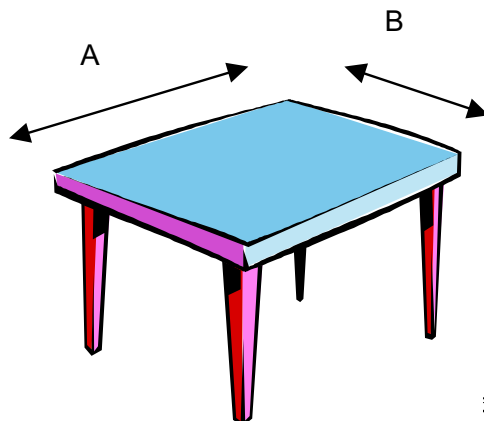
Warmer

Same as

Colder

STAGE 2: 5 QUESTIONS

3. Examine the diagram below



ent

a) Arrow A is measuring? Circle the correct answer.

- Length
- Width
- Area

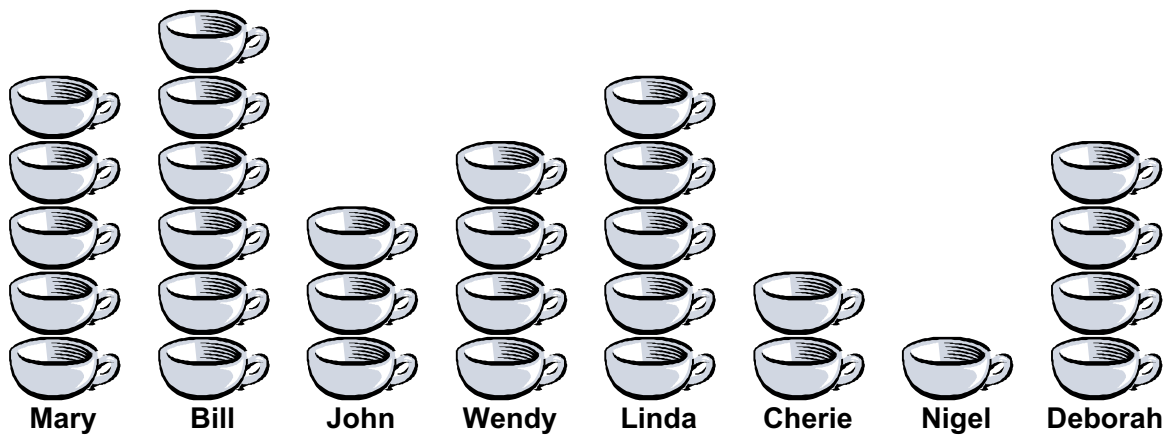
4. Circle the way you would work out the area of the table-top.

- $A + B$
- $A - B$
- $A \times B$
- $A \div B$

5. Tick the tool you would use to measure the height of a person.

- Bathroom scales
- Kitchen scales
- Tape measure
- Measuring jug

6. Ten students were asked to find out how many cups of water it took to fill a one litre container of water. Here are their results.



Tick the reason why the students may have different results:

- They used different sized cups.

- They did the activity on different days.
- Some children used hot water and some used cool water.
- 7. Circle the most appropriate measuring device you would use to measure the volume of milk in a cup.
 - Bathroom scales
 - Kitchen scales
 - Tape measure
 - Measuring jug

STAGE 3: 1 QUESTION

8. Circle the unit you would use to measure the distance between Lightning Ridge and Dubbo.
- Millimetres
 - Centimetres
 - Kilometres
 - Kilograms

STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

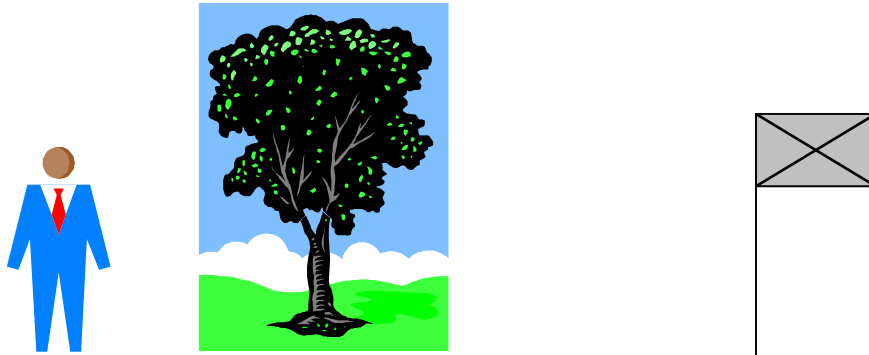
Stage of Task	2 MEASUREMENT
Outcome	2. Length
Outcome Descriptor	Estimates, measures and records the length of objects in metres and centimetres.
Stage	Number of Indicator Questions
1	2
2	5
3	1

Question	1	2	3	4	5	6	7	8						
Stage	1	1	2	2	2	2	2	3						
Indicator Description														
<ul style="list-style-type: none"> • Compares and orders the length of objects by direct or indirect comparison. • Compares and orders distances between objects. 	*													
<ul style="list-style-type: none"> • Improves estimation skills by guessing and checking; uses a metre string to measure objects and distances which are more than, less than and about a metre long. • Compares and orders the length of objects by direct or indirect comparison. • Compares and orders distances between objects. 		*												
<ul style="list-style-type: none"> • Uses a variety of measuring devices to measure length, eg rule, tape, trundle wheel. • Selects, from a collection of objects, an item with a length close to a given length. 			*											
<ul style="list-style-type: none"> • Selects, from a collection of objects, an item with a length close to a given length. • Measures and records lengths in various orientations, eg length of students' hair. 				*										
<ul style="list-style-type: none"> • Records measurements in a table or column graph. 					*									
<ul style="list-style-type: none"> • Identifies the zero location on a ruler. 						*								
<ul style="list-style-type: none"> • Measures and records lengths in various orientations, eg length of students' hair. 							*							
<ul style="list-style-type: none"> • Uses the standard SI abbreviation for millimetre, ie mm. • Describes a mm as one tenth of a cm and writes it in decimal notation. 								*						

**ASSESSMENT TASK FOR STAGE 2
MEASUREMENT 2: LENGTH**

STAGE 1: 2 QUESTIONS

1. Look at the picture, then choose the best word to fill in each space.



a) The person is _____ than the tree.

b) The tree is _____ the person than the flagpole.

c) The tree is _____ than the flagpole.

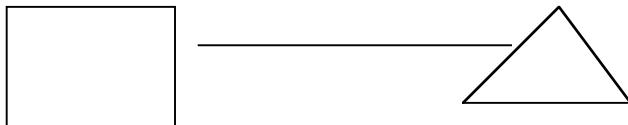
Taller

Nearer

Shorter

Longer

2. Which is the longest length of string between these objects?

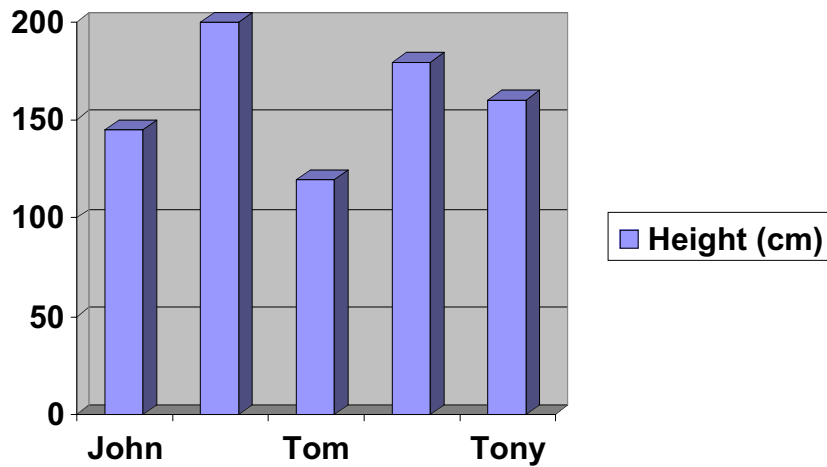


STAGE 2: 5 QUESTIONS

3. Tick the object that would be about 0.3m in length.

- Ruler
- Pencil
- Desk
- Door

4. Read the graph about the boys' heights.



Tick the statement that is correct.

- John is taller than Dylan
- Alan is taller than Tony
- John is taller than Tony
- Dylan is taller than Alan

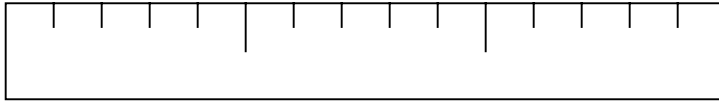
5. Complete the grid below

mm	cm	m
	35	
770		

		1.2
--	--	-----

6. On the ruler below, label where you would find:

30cm 20cm 10cm 0cm



7. Name something that you think would be approximately:

1cm long _____

10cm long _____

50cm long _____

STAGE 3: 1 QUESTIONS

8. A fingernail is 0.6cm wide. This is the same as ... Circle your answer.

- 60mm
- 6mm
- 600mm

STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

Stage of Task	2 MEASUREMENT
Outcome	3. Area
Outcome Descriptor	Estimates, compares, measures and records the area of surfaces using square metres and square centimetres.
Stage	Number of Indicator Questions
1	2
2	5
3	1

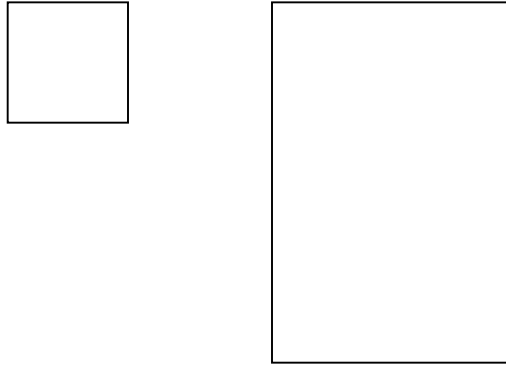
Question	1	2	3	4	5	6	7	8				
Stage	1	1	2	2	2	2	2	3				
Indicator Description												
<ul style="list-style-type: none"> Estimates the number of informal units, eg hands, paper squares, needed to cover a region completely. Checks accuracy of estimation by counting. Covers a shape with informal units and counts the number used. Compares areas using informal units. 	*											
<ul style="list-style-type: none"> Orders the areas using informal units. Orders the areas of three shapes using informal units and by comparison. 		*										
<ul style="list-style-type: none"> Recognises the need for a unit smaller than a square metre. Estimates the area of regular and irregular shapes by counting squares on a grid. Investigates and records specific areas in the form of a table. 			*									
<ul style="list-style-type: none"> Demonstrates efficient strategies for counting large numbers of square centimetres, eg using strips of ten, squares of 100. 				*								
<ul style="list-style-type: none"> Uses standard SI abbreviations for square metre and square centimetre, ie m² and cm². 					*							
<ul style="list-style-type: none"> Estimates the number of square metres in a given small region. 						*						
<ul style="list-style-type: none"> Demonstrates efficient strategies for counting large numbers of square centimetres, eg using strips of ten, squares of 100. 							*					
<ul style="list-style-type: none"> Uses the language length, width, breadth, depth appropriately. 								*				

ASSESSMENT TASK FOR STAGE 2

MEASUREMENT 3: AREA

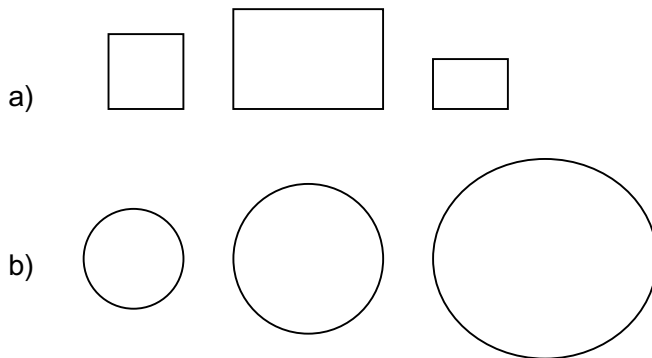
STAGE 1: 2 QUESTIONS

1. Circle the number of squares you would need to cover the rectangle.



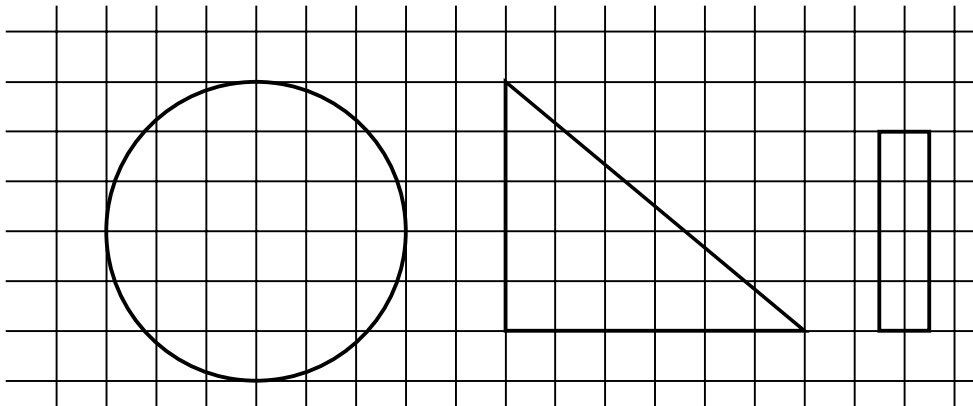
- 4
- 8
- 12
- 6

2. Select the shapes that are ordered from the smallest area to the largest area.



STAGE 2: 5 QUESTIONS

3. Examine the diagram below and answer the following questions



Each Square is 1cm by 1cm

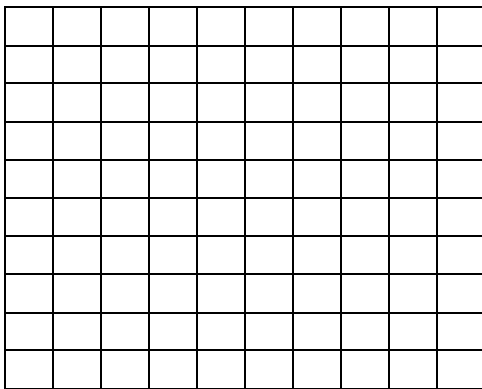


Circle the correct area for each shape.

Circle	16mm ²	16cm ²	28cm ²	28m ²
Rectangle	16cm ²	16mm ²	4cm ²	4mm ²
Triangle	10cm ²	30cm ²	15mm ²	15cm ²

4. If you had to quickly measure the area of the this page and you don't have to be precise which of the measuring grids would you use.

10 X 10 Grid = 100 squares

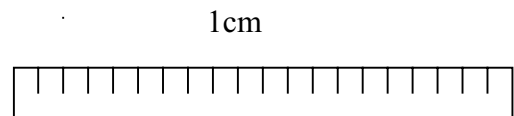
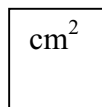
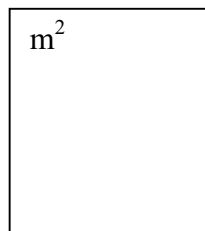


10 X 1 Grid = 10 squares



1 X 1 Grid = 1 square

5. Draw a line to the unit of measurement to answer this question. What would you use to measure:



Area of
a Blackboard

Area of
a Workbook

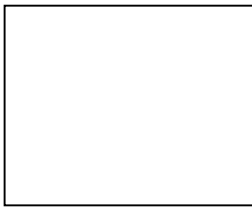
Area of
a Basketball court

6. Tick which area measurement you think your blackboard or whiteboard is, if it took up one wall of a classroom?

- About 1 metre²
- About 4 metres²
- About 10 metres²

7. Use the area of the rectangle to help you work out the area of the following shapes.

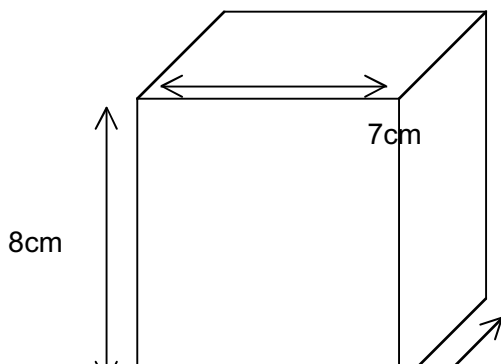
Area of the rectangle is 80cm²



Shape	Area

STAGE 3: 1 QUESTION

8. Circle the correct answer for each measurement



The length is: 5cm 7cm 8cm

The height is: 5cm 7cm 8cm

The depth is: 5cm 7cm 8cm

Stage Two - Measurement

STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

Stage of Task	2 MEASUREMENT
Outcome	4. Capacity and Volume
Outcome Descriptor	<p>a. Estimates, compares, measures and records the capacity of containers to the nearest litre, and recognises the need for units smaller than the litre.</p> <p>b. Compares and orders the volume of solids using informal units and displacement.</p>
Stage	Number of Indicator Questions
1	2
2	5
3	1

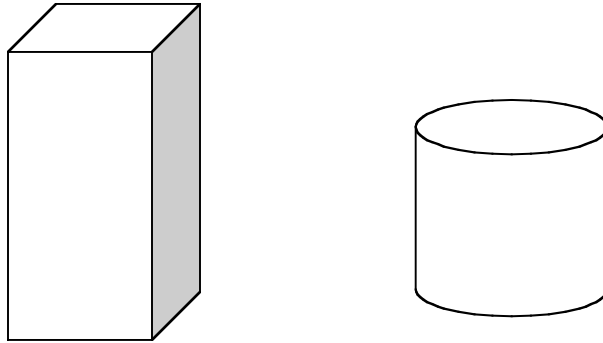
Question	1	2	2	3	4	5	6	7	8			
		a	b									
Stage	1	1	1	2	2	2	2	2	3			
Indicator Description												
<ul style="list-style-type: none"> • Compares the capacity of two containers by observation. • Orders three containers of distinctly different capacity by packing, filling or pouring. • Discuss the effect of putting equal quantities of liquid into different shaped containers. • Uses language to describe capacity, eg least, most, full, level, pour, pack. 	*											
<ul style="list-style-type: none"> • Estimates the number of similar objects, eg beads, buttons, needed to fill a container completely. 		*										
<ul style="list-style-type: none"> • Checks the accuracy of estimation by counting. 			*									
<ul style="list-style-type: none"> • Recognises the need for a standard unit of capacity. • Selects from a range of containers those which have a capacity of more than, less than and about one litre. • Records information about the capacity of a range of containers in a table and/or a graph. 				*								
<ul style="list-style-type: none"> • Observes and discusses the effect on the quantity of water displaced by an object if the shape of the object is changed. 					*							
<ul style="list-style-type: none"> • Uses the standard SI abbreviation for kilogram, eg kg. • Measures and records masses of a range of objects in a graph or table. 						*						
<ul style="list-style-type: none"> • Observes and discusses the effect on the quantity of water displaced by an object if the shape of the object is changed. 							*					
<ul style="list-style-type: none"> • Estimates and measures the mass of everyday objects in kilograms and 								*				

<p>half kilograms.</p> <ul style="list-style-type: none"> Recognises the need for a unit smaller than the kilogram. 												
<ul style="list-style-type: none"> Uses a model of cubic metre to estimate and measure the volume of large spaces, eg the classroom. 								*				

**ASSESSMENT TASK FOR STAGE 2
MEASUREMENT 4: CAPACITY AND VOLUME**

STAGE 1: 2 QUESTIONS

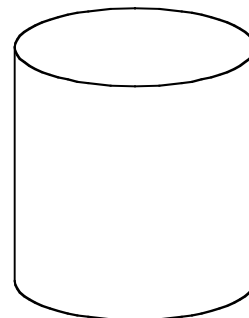
1. A cup of water is poured into each of these containers.



Circle the statement which is true.

- The amount of water is the same but the shape is different.
 - The amount of water is different in each container.
 - The rectangular prism container has more water in it.
2. If you had a 3D jar filled with jelly beans, how many jelly beans would be in the jar?

- a) 1,000
- b) 10
- c) 57
- d) 100



- b) How could you check your guess?
- Count the number of jelly beans in the jar.
 - Double the number in the scoop?
 - Measure the weight of the jar.
 - Fill the jar with water.

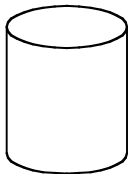
6. If an object is put into a full bucket of water and another object is placed into the bucket and sinks to the bottom what would you expect to happen, select from one of the answers below.

- Water would flow out of the bucket.
- The object would cause the water to flow out and be the identical weight of the object placed in.
- The water level in the bucket would rise 5 cm.



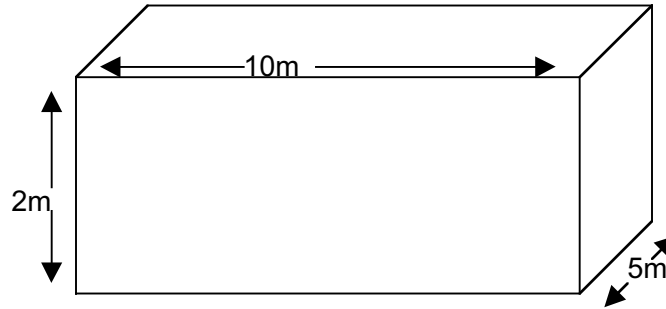
7. If a person was trying to determine whether a laundry scoop or the cap of a laundry bottle held more liquid, how would they determine which held more liquid? Choose the best answer.

- They could measure the liquid in one and pour it into the other and see whether it filled it or overflowed.
- They could weigh the cap and the scoop without the liquid to determine which could hold more.
- They could use a measuring cup and pour liquid from the cap and see how much there was, then repeat with the scoop.



STAGE 3: 1 QUESTION

8. Circle the number of cubic metres which shows the volume of the classroom.



- 110 m³
- 100 m³
- 90 m³
- 1100 m³

STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

Stage of Task	2 MEASUREMENT
Outcome	5. Mass
Outcome Descriptor	Estimates, compares and records the mass of objects to the nearest kilogram and recognises the need for a unit smaller than the kilogram.
Stage	Number of Indicator Questions
1	2
2	5
3	1

Question	1 a	1 b	2	3	4	5	6	7	8				
Stage	1	1	1	2	2	2	2	2	3				
Indicator Description													
<ul style="list-style-type: none"> • Selects appropriate informal units to measure the mass of given objects. 	*												
<ul style="list-style-type: none"> • Selects appropriate informal units to measure the mass of given objects. 		*											
<ul style="list-style-type: none"> • Uses a balance to compare masses. 			*										
<ul style="list-style-type: none"> • Compares the masses of a number of everyday objects with a one kilogram mass. • Selects from a range of objects those which have a mass of more than, less than and about the same as one kilogram or half a kilogram. 				*									
<ul style="list-style-type: none"> • Demonstrates awareness of the need for a standard unit of mass. 					*								
<ul style="list-style-type: none"> • Compares the masses of a number of everyday objects with a one kilogram mass. • Estimates and measures the mass of everyday objects in kilograms and half kilograms. • Measures and records masses of a range of objects in a graph or table. • Selects from a range of objects those which have a mass of more than, less than and about the same as one kilogram or half a kilogram. 						*							
<ul style="list-style-type: none"> • Measures and records masses of a range of objects in a graph or table. 							*						
<ul style="list-style-type: none"> • Uses the standard SI abbreviation for kilogram, eg kg. • Measures and records masses of a range of objects in a graph or table. 								*					
<ul style="list-style-type: none"> • Chooses appropriate units to solve problems involving mass, interpreting the results in the context of the question. 									*				

**ASSESSMENT TASK FOR STAGE 2
MEASUREMENT 5: MASS**

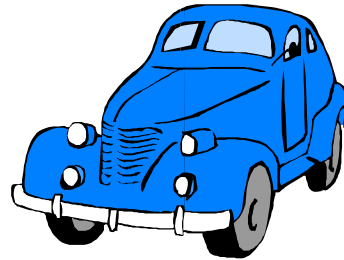
STAGE 1: 2 QUESTIONS

1.a) Join the object to the most appropriate unit of mass for weighing it.

gram

tonne

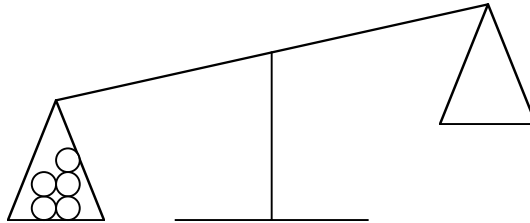
kilogram



b) Circle the object that would be the heaviest.

2. How many marbles will I need to balance the scales?

- 5
- 15
- 3
- 35



STAGE 2: 5 QUESTIONS

3. Examine the pictures below



Girl



Pumpkin



Bread

Write the name of the object which is

more than 1kg _____

less than 1kg _____

about 1kg _____

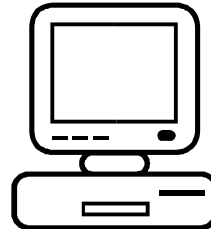
4. Billy measured the mass of 3 different balls using a beam balance and weighing each ball with oranges.

BALL	NUMBER OF ORANGES
football	3.5 oranges
tennis ball	1 orange
cricket ball	3 oranges

He realised that this was not an effective way of weighing objects because ...
Circle the best reason.

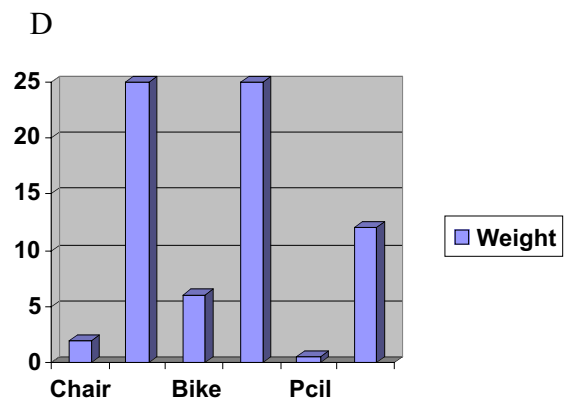
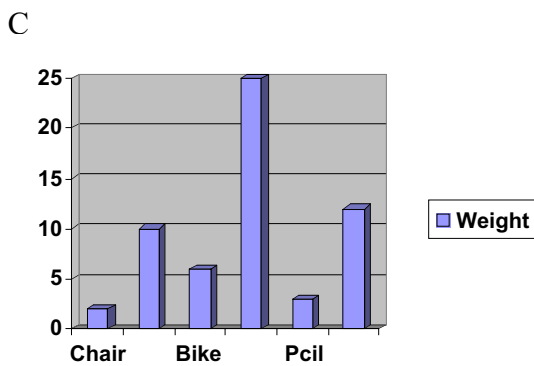
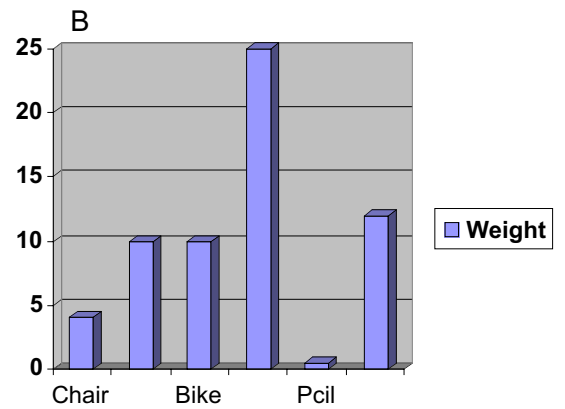
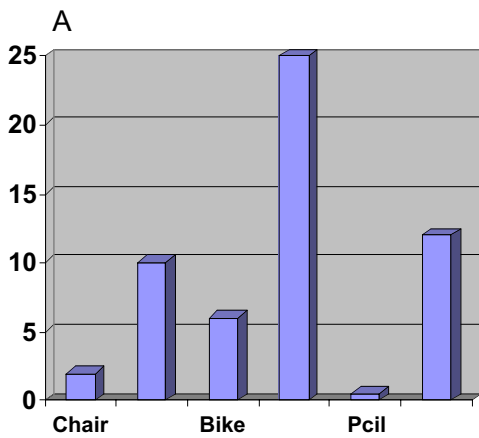
- The oranges can vary in size each time you weigh.
- Oranges are always the same size.
- Oranges are different in China.
- Objects are always the same and oranges never change.

5. Circle the objects you would measure in kilograms.



6. Circle the column graph that corresponds to the weights in the table below.

Object	Weight
Chair	2kg
Suitcase	10kg
Bicycle	6kg
Cupboard	25kg
Pencils	0.5kg
Computer	12kg



7. A person stands on a scale and weighs 53kg. The person then is given their pet cat to hold and now the cat and the person weigh 58.5kg on the scale. What would be the weight of the cat?



STAGE 3: 1 QUESTION

8. Bill's tug-o-war team

Bill 58 kg

Carol 55 kg

Brett 60 kg

Simon 64 kg

Joe 65 kg

- John's tug-o-war team

John 45 kg

Kim 42 kg

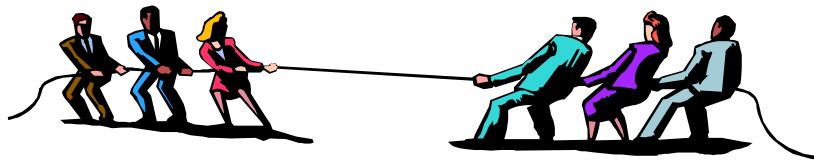
Pat 49 kg

Ann 43 kg

Daniel 50 kg

a) Which team should win the tug-o-war? _____

b) Give your reasons.



STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

Stage of Task	2 MEASUREMENT
Outcome	6. Temperature
Outcome Descriptor	Measures and records temperatures using descriptive and numerical scales.
Stage	Number of Indicator Questions
1	2
2	5
3	1

Question	1	2	3	4	5	6	7	8						
Stage	1	1	2	2	2	2	2	3						
Indicator Description														
<ul style="list-style-type: none"> • Uses sight and touch (if appropriate) to compare the temperature of two objects or materials. • Identifies cooler and warmer objects and places, eg the swimming pool is cooler than the bath. • Uses language to describe the temperature of objects, eg hottest, coldest, cooler, warmer. 	*													
<ul style="list-style-type: none"> • Explains the need for a device to measure temperature. 		*												
<ul style="list-style-type: none"> • Measures temperature in degrees Celsius. 			*											
<ul style="list-style-type: none"> • Recognises and discusses the disadvantages of using differently scaled thermometers. 				*										
<ul style="list-style-type: none"> • Investigates, describes and records what happens to the liquid in a thermometer in a variety of situations. 					*									
<ul style="list-style-type: none"> • Investigates, describes and records what happens to the liquid in a thermometer in a variety of situations. 						*								
<ul style="list-style-type: none"> • Recognises and discusses the disadvantages of using differently scaled thermometers. 							*							
<ul style="list-style-type: none"> • Uses language associated with recording temperature, eg boiling point, freezing point, maximum, minimum. • Estimates in degrees C the temperatures associated with everyday experiences, eg hot and cold drinks, water in a swimming pool, weather. 								*						

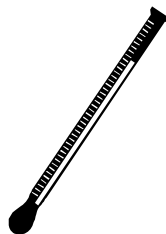
**ASSESSMENT TASK FOR STAGE 2
MEASUREMENT 6: TEMPERATURE**

STAGE 1: 2 QUESTIONS

1. Match the word with the temperature of an object.
- | | |
|---------------------------|------|
| Ice | hot |
| Water from the garden tap | cold |
| Food cooking on a stove | cool |
| Your breath | warm |
2. We need thermometers to measure temperature because
- hot water burns skin
 - you need to use it for cooking
 - everyone will use the same standard to compare temperature

STAGE 2: 5 QUESTIONS

3. In what unit is temperature measured? Circle your answer
- Celsius Metres Kilograms Centimetres
4. Select which thermometer you would use to measure the temperature of boiling water. Circle your answer.
- A thermometer measuring up to 200°C
 - A thermometer measuring up to 70°C
 - A thermometer measuring between -10°C and 40°C
5. A thermometer is placed into hot water. What would you expect to happen to the liquid in the thermometer? Circle your answer.
- It would rise.
 - It would stay at the same level.
 - It would fall.



6. A thermometer is placed into a container containing iced water, then placed into a pot of boiling water, then placed on a desk. From the selection below, which would match the expected changes in temperature?

- The temperature would fall, rise and fall slowly.
- The temperature would fall, rise and fall.
- The temperature would continue to fall.
- The temperature would continue to rise.

7. From the list below why wouldn't you use a human plastic body thermometer to measure the temperature of boiling water?

- The thermometer would melt in the water.
- The thermometer can only measure temperatures up to 42⁰C.
- The thermometer would be too hot to hold.

STAGE 3: 1 QUESTION

8. Match the temperatures to the language.

- | | |
|-------|------------------|
| 0°C | boiling point |
| 25°C | freezing point |
| 37°C | body temperature |
| 100°C | cold winter day |
| 8°C | warm spring day |

STAGE 2 OUTCOME ASSESSMENT MAPPING GRID

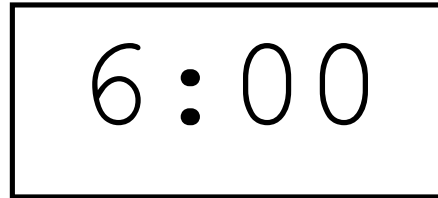
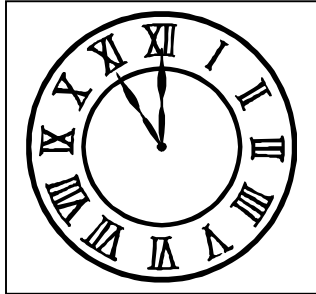
Stage of Task	2 MEASUREMENT
Outcome	7. Time
Outcome Descriptor	Reads and records time in one minute intervals and makes comparisons between time units.
Stage	Number of Indicator Questions
1	2
2	5
3	1

Question	1	2	3	4	5	6	7	8 a	8 b			
Stage	1	1	2	2	2	2	2	3	3			
Indicator Description												
<ul style="list-style-type: none"> • Demonstrates an awareness of the duration of time related to an hour, a minute and a second. • Tells the time on the hour on both digital and analog clocks. 	*											
<ul style="list-style-type: none"> • Describes the duration of events using language of time, eg it takes me a long time to clean up my room. 		*										
<ul style="list-style-type: none"> • Tells and records time in one minute intervals on digital and analog clocks. • Tells the time on the half hour using digital and analog clocks. • Reads and writes digital time in hours and minutes, eg 12:24. 			*									
<ul style="list-style-type: none"> • Makes comparison between time units, eg minutes, hours, days. • Describes activities in terms of time taken to complete. 				*								
<ul style="list-style-type: none"> • Describes activities in terms of time taken to complete. 					*							
<ul style="list-style-type: none"> • Makes comparison between time units, eg minutes, hours, days. 						*						
<ul style="list-style-type: none"> • Tells and records time in one minute intervals on digital and analog clocks • Tells the time on the half hour using digital and analog clocks. 							*					
<ul style="list-style-type: none"> • Reads local timetables correctly. • Uses bus, train, ferry, airline timetables to prepare a simple travel itinerary. 								*				
<ul style="list-style-type: none"> • Reads local timetables correctly. • Uses bus, train, ferry, airline timetables to prepare a simple travel itinerary. 									*			

ASSESSMENT TASK FOR STAGE 2
MEASUREMENT 7: TIME

STAGE 1: 2 QUESTIONS

1. What time do these clocks tell you? Write your answer underneath.



2. Order the length of time it takes to complete an activity, from shortest to longest (1 being shortest and 4 being longest).

Roll call _____

Sleep at night _____

Football game _____

Smile _____

STAGE 2: 5 QUESTIONS

3. Complete the table.

In words		_ past six	
Clock Face			
Digital Time	10:30		12:20

4. Match the picture with the time it would take to complete each activity.

hours

minutes

days

Brush your teeth



Sleeping



A plant to grow



5. How long would it take you to

Eat your lunch _____

Read a chapter in a book _____

Complete a whole day at school _____

6. Fill in the table below with the equivalent time measurement.

Days	Hours	Minutes
1	24	1,440
0.25		

7. How much time has elapsed between the first time and the second time below on the digital clock?

6 : 05 am

6 : 37 am

STAGE 3: 1 QUESTION

8. Examine the airline time table below

Armidale to Sydney			Sydney to Armidale		
Day	Depart	Arrive	Day	Depart	Arrive
MTWTF--	9.25am	10.35am	MTW----	7.55am	9.05am
-----S-	10.35am	11.45am	----TF--	8.00am	9.10am
-----S	1.55pm	3.05pm	-----S-	9.10am	10.20am
----F--	3.20pm	4.30pm	-----S	12.30pm	1.40pm
MTWT--S	5.20pm	6.30pm	---F--	1.55pm	3.05pm
----F--	6.30pm	7.40pm	MTWT--S	3.55pm	5.05pm
			----F--	5.00pm	6.10pm

a) How many flights are there from Armidale to Sydney on Fridays?
Circle your answer.

- 1
- 3
- 6
- 2

b) If you were in Sydney and had an appointment in Armidale at 10.00am on Thursday morning tick the departure time of the plane you would need to catch.

- 3.55pm
- 8.00am
- 12.30pm
- 9.10am