Nguzu Nguzu
Mathematics

Pupil's Resource Book 2

Standard 5

First Edition 2005

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Pupil's Resource Book
Standard Five

Written and produced by
The Curriculum Development Centre

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Contents

Unit 11

1a What Time of Day?

Activity A

Look at the times on each of the clock faces shown below.

Write the time in your exercise book using a.m. and p.m. and then write an activity that you think you might do at that time. The first one has been done for you.

1.  **morning**

2.  **evening**

3.  **morning**

4.  **afternoon**

5.  **morning**

6.  **afternoon**

7.  **morning**

8.  **afternoon**

9.  **night**

10.  **morning**

11.  **night**

12.  **morning**

1. 1:30 a.m. At 1:30 a.m. I am asleep in bed.

Activity B

1.	1:00 a.m.	**a.**	swim
2.	3:15 p.m.	**b.**	prepare breakfast
3.	12:00 noon	**c.**	go to bed
4.	6:45 p.m.	**d.**	return home from school
5.	6:15 a.m.	**e.**	play football
6.	4:45 p.m.	**f.**	eat lunch
7.	1:30 p.m.	**g.**	sleep
8.	7:00 a.m.	**h.**	school starts
9.	8:00 a.m.	**i.**	get up and get dressed
10.	9:30 p.m.	**j.**	have dinner

Match the time written on the left to the activities on the right.

Write them together in your exercise book in the order in which they happen during the day.

The first one has been done for you.

6:15 a.m. Get up and get dressed

Activity C

Copy and complete the following table. Write the times in words or numbers. The first one has been done for you.

1.	half past five in the morning	5:30 a.m.
2.	quarter past three in the afternoon	
3.		8:35 p.m.
4.	twenty to eleven in the morning	
5.		12:10 p.m.
6.		4:45 p.m.
7.	half past midnight	
8.	twenty-five past seven in the evening	

Look at the times in the table below. Can you work out the new times? Remember earlier **means** before **and later means** after**. The first one has been done for you.**

9.	9:30 p.m.	fifteen minutes earlier	9:15 p.m.
10.	10:05 a.m.	thirty minutes earlier	
11.	4:45 p.m.	twenty minutes later	
12.	11:20 a.m.	forty-five minutes later	
13.	8:00 p.m.	ten minutes earlier	
14.	3:30 a.m.	fifty-five minutes later	
15.	12:10 p.m.	one hour earlier	

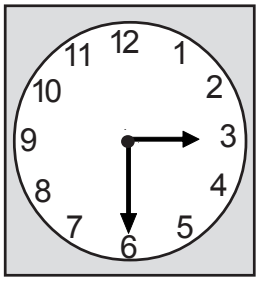
1b Digital Time

Activity A

Transfer the times from the analogue clock faces to the digital clocks underneath. The first one has been done for you.

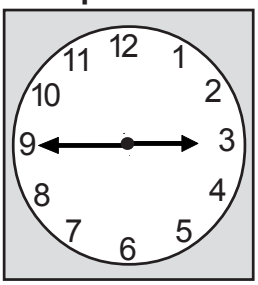
1.

a. **a.m.**

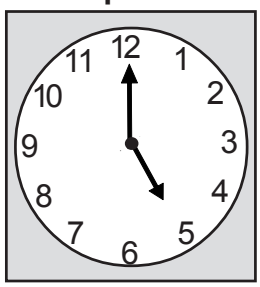


0330h

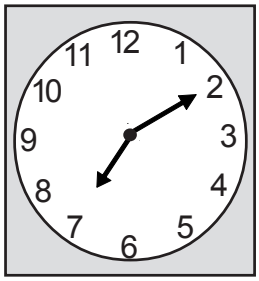
b. **p.m.**



c. **p.m.**

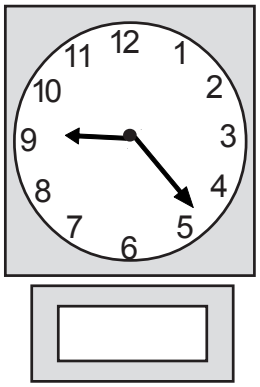


d. **a.m.**

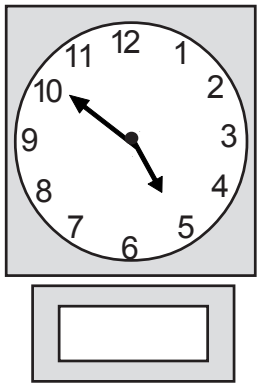


Unit 11

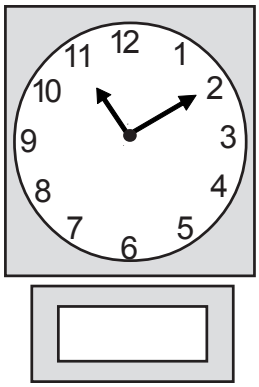
e. p.m.



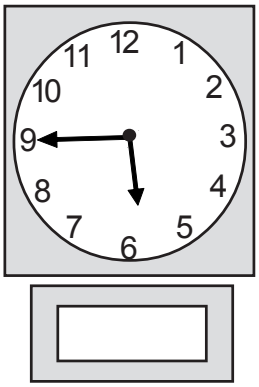
f. p.m.



g. a.m.

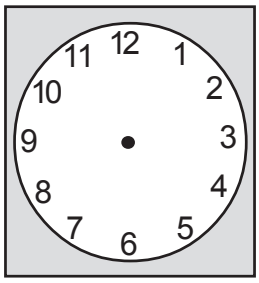


h. p.m.

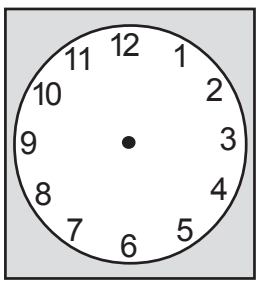


2. Transfer the times from the 24-hour digital clocks to the analogue clocks underneath. Draw the clock faces in your exercise book and write a.m. or p.m. next to each clock face.

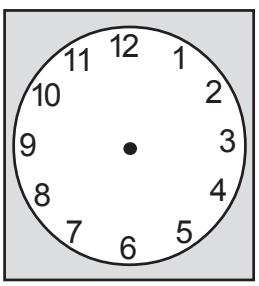
a. **0445h**



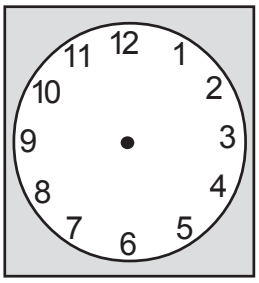
b. **2030h**



c. **1400h**



d. **0915h**



Activity B

Write the time given in digital notation in your exercise book. The first one has been done for you.

Remember!

When you write the 24 hour notation you use four digits and a lower case **h.**

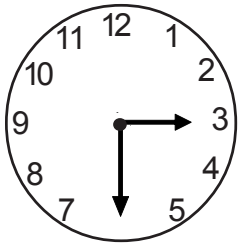
You do not need a colon.

1. Eleven o'clock in the morning **1100h**
2. Half past three in the afternoon
3. A quarter to four in the morning
4. Noon
5. Twenty-five minutes to three in the morning
6. Twenty-five minutes to three in the afternoon
7. Ten past eight in the morning
8. One minute before mid-night
9. Forty-five minutes after mid-night
10. Six o'clock in the evening

Activity C

Write the time given in words, in digital and analogue forms.

Draw the clocks in your exercise books. See the example below

Words	Digital	Analogue
Half past three in the afternoon	1530	

1. Half past three in the morning.
2. Eleven minutes before four in the morning.
3. Twenty-eight minutes after eleven at night.
4. Quarter to six in the evening.
5. Quarter past eight in the evening.
6. Six minutes to three in the morning.
7. Nine o'clock in the evening.
8. Half past ten in the evening.
9. Quarter to four in the morning.

Copy and complete the following table. Write the time in words or numbers. The first one has been done for you.

	Time in words	Analogue	24-hour
10.	half past six in the morning	6:30 a.m.	0630h
11.		3:20 a.m.	
12.	two fifteen in the afternoon		
13.		3:15 a.m.	
14.			1245h
15.	ten thirty-five in the morning		
16.	five minutes to eleven at night		
17.		5:15 p.m.	
18.			0905h

Unit 11

2a Reading a Timetable

Study the Solomon Airlines timetable below and discuss it with your teacher before completing the activities.

SOLOMON AIRLINES NORTHERN WINTER SCHEDULE OCTOBER 2003 MARCH 2004

Monday				Tuesday				Wednesday			
Flight No.	Depart	Sectors	Arrive	Flight No.	Depart	Sectors	Arrive	Flight No.	Depart	Sectors	Arrive
IE 140	0700	HIR MUA	0820	IE120	0730	HIR BNY	0825	IE140	0800	HIR EGM	**0900**
IE140	0840	MUA GZO	0855	IE120	0835	BNY RNL	0855	IE140	0910	EGM MUA	**0930**
IE141	0905	GZO HIR	1035	IE121	0905	RNL BNY	0925	IE140	0940	MUA HIR	**1100**
				IE141	0935	BNY HIR	1030				
IE114	1100	HIR IRA	1200								
IE114	1220	IRA NNB	1240	IE150	1100	HIR MUA	1220				
IE115	1250	NNB HIR	1410	IE151	1240	MUA XYA	1340		MAINTENANCE		
				IE151	1340	XYA HIR	1410				
IE142	1430	HIR GZO	1600					IE132	1600	HIR AKS	**1630**
IE143	1610	GZO MUA	1625	IE132	1600	HIR AKS	1630	IE132	1640	AKS ATD	**1650**
IE143	1645	MUA HIR	1805	IE133	1640	AKS HIR	1710	IE133	1700	ATD HIR	**1740**

Abbreviations

GZO	Gizo	NNB	Santa Anna	AKS	Auki
MUA	Munda	BNY	Bellona	EGM	Seghe
HIR	Honiara	RNL	Rennell	ATD	Atoifi
IRA	Kira Kira	XYA	Yandina		

Activity A

Look at the timetable above and answer the questions.

1. List the departure days and times for the two direct flights to Munda from Honiara.
2. What time does the plane arrive in Rennell on Tuesday?
3. How long does the flight from Auki to Honiara take?
4. Where does the plane stop on the way back from Munda on Tuesday?
5. What time does the plane leave Kira Kira for Santa Anna on a Monday?
6. What time does the flight for Rennell and Bellona arrive back in Honiara on a Tuesday?

Activity B

Study the Solomon Airlines timetable above and answer the following questions in your exercise book.

1. How long is the flight from Seghe to Munda?
2. Which flight is longest, Seghe to Munda or Yandina to Honiara?
3. List the days, flight numbers and departure times for a passenger wanting to travel from Honiara to Auki.
4. On Tuesday the flight to Auki and back takes one hour and 10 minutes, On Wednesday it takes 1 hour and 40 minutes. Explain the difference.
5. Which flight is shortest, Honiara to Bellona or Honiara to Kira Kira?
6. If you fly to Munda direct from Honiara it takes 1 hour and 20 minutes. How long does it take if you stop off at Seghe?

Activity C

Study the Solomon Airlines timetable above and answer the following questions in your exercise book.

1. List the following flights in order according to their length. Start with the shortest.
   - **a.** Bellona to Rennell
   - **b.** Gizo to Munda
   - **c.** Kira Kira to Honiara
   - **d.** Auki to Atoifi
   - **e.** Honiara to Auki
   - **f.** Atoifi to Honiara
2. What is the total flying time for the following journeys?
   - **a.** Honiara to Gizo and back via Munda.
   - **b.** Honiara to Munda via Seghe on the way and via Yandina on the way back.
   - **c.** Honiara to Santa Anna stopping off at Kira Kira.
   - **d.** Rennell to Honiara via Bellona.
3. How long does the plane usually spend on the ground between arrival and departure:
   - **a.** in Honiara?
   - **b.** in the provinces?

   Why do you think there is a difference?
4. Which flight is shortest, Honiara to Santa Anna via Kira Kira, or Honiara to Gizo via Munda?

Unit 11

2b High and Low Tide

Study the tide chart below. This shows the times for high and low tides for Honiara for one week. The times are written using the 12-hour clock and a.m. and p.m. notation.

HIGH AND LOW TIDE TIMES FOR HONIARA					
Monday 1st – Friday 5th September 2003					
	Monday	Tuesday	Wednesday	Thursday	Friday
High tide	2:43 a.m.	3:52 a.m.	5:03 a.m.	6:06 a.m.	7:00 a.m.
Low tide	8:30 a.m.	9:45 a.m.	11:05 a.m.	12:19 p.m.	1:23 p.m.
High tide	2:36 p.m.	3:35 p.m.	4:45 p.m.	5:51 p.m.	6:52 p.m.
Low tide	9:21 p.m.	10:21 p.m.	11:22 p.m.	12:18 a.m.	1:21 a.m.

Activity A

Study the tidal chart above and write the following times down in your exercise book using the correct 24-hour notation. The first one has been done for you.

1. High tide on Wednesday morning. **0503h**
2. High tide on Friday morning.
3. Low tide on Tuesday evening.
4. High tide on Thursday afternoon.
5. High tide on Friday evening.
6. Low tide on Monday evening.

Activity B

Study the tidal chart above answer the questions in your exercise book using the correct 24-hour notation. The first one has been done for you.

1. What time is high tide on Friday evening? **1852h**
2. What time is low tide on Wednesday night?
3. Write the following in order starting with the earliest time.
   - **a.** Low tide on Friday morning
   - **b.** High tide on Thursday morning
   - **c.** Low tide on Monday morning
   - **d.** Low tide on Tuesday morning
4. Rewrite the tidal chart for Wednesday in your book using the 24-hour notation.
5. What is the latest time for high and low tides shown on the chart?
6. What is the earliest time for high and low tides shown on the chart?

Activity C

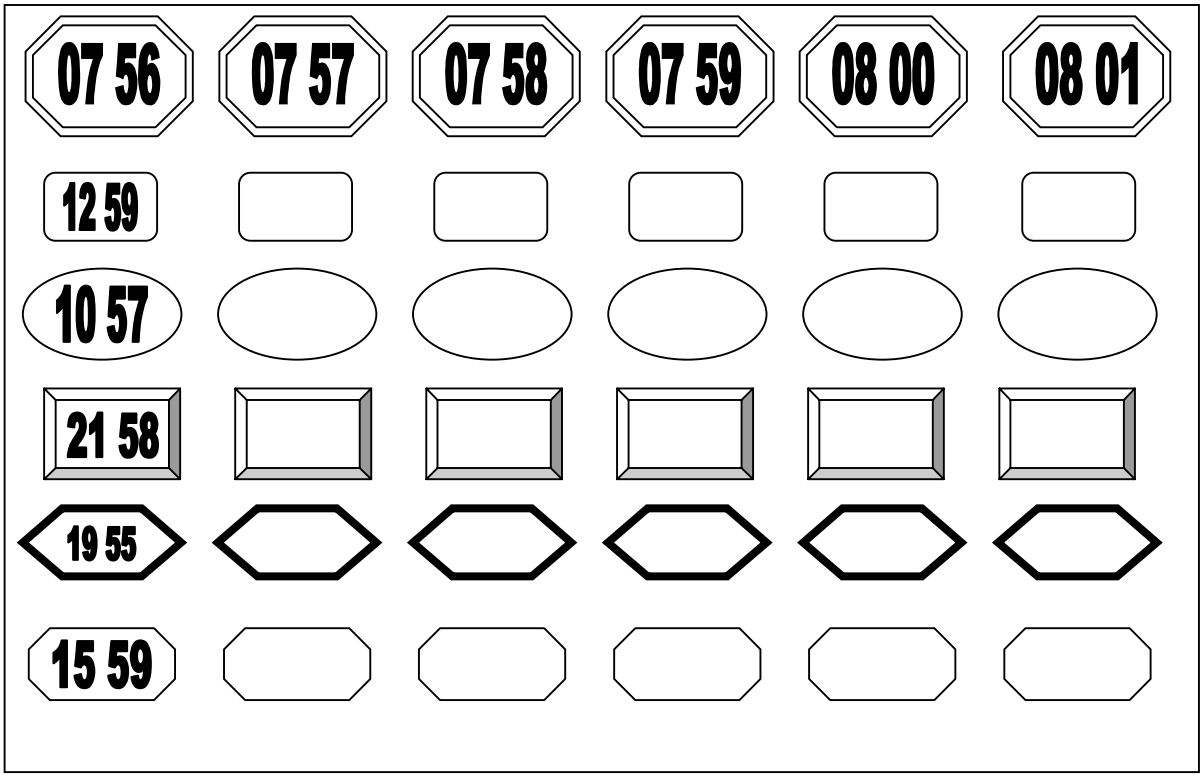
Copy the table below into your exercise book and complete it using 24-hour clock notation. You should use the information in the tidal chart on the opposite page to complete the times for Thursday and Friday and then use the information in the chart to predict the tide times for Saturday and Sunday.

HIGH AND LOW TIDE TIMES FOR HONIARA				
Thursday 4th to Sunday 7th September 2003				
	Thursday 4th	Friday 5th	Saturday 6th	Sunday 7th
High tide				
Low tide				
High tide				
Low tide				

3a Intervals of Time

Activity A

Copy the digital clocks below into your exercise book. Write in the time one minute after each of the times shown to complete the sequence – the first one has been done for you.



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Activity B

Complete the time sequences below following the instructions given.

1.	Add one minute	1358h				
2.	Add ten minutes	1030h				
3.	Add five minutes	1645h				
4.	Add one minute	1159h				
5.	Add fifteen minutes	0654h				

Activity C

Answer the questions in your exercise book. Write your answers using the correct 24-hour notation.

1. If a bus leaves Rove Market at 0800h and takes 24 minutes to reach KG VI and 24 minutes to return to Rove Market write down all the times it will leave Rove Market from 0800h until 1200h.
2. If security guards do a 4 hour shift on duty, write down all the times that the shift will change during the day. The first shift begins at 0630h.
3. A packing machine takes 2 minutes to pack one case of soft drink bottles. Cases are then packed into crates containing 48 cases.
   - **a.** How long does the machine take to pack enough cases for one crate?
   - **b.** If the machine started packing cases at 1300h, at what time would it finish enough cases to fill five crates?
4. A woman harvests her potato garden. It takes her 6 minutes to harvest one mound. She has 36 mounds altogether.
   - **a.** How long will it take her to harvest the whole garden?
   - **b.** If she starts at 0800h at what time will she finish?

3b Time Problems

Be Careful!

Some of these problems use subtraction and some use addition. Make sure you read the question carefully.

Activity A

Answer the questions in your exercise book.

1. If school starts at 0730h and it takes Sam 20 minutes to walk to school. What time will he need to leave home each morning?
2. To catch a flight to Honiara passengers must check in at the airport one hour before the flight time. If the flight leaves at 1415h, what time must the passengers check in?
3. The ship should have arrived at Afio at 1830h but it was 3 hours late. What time did it arrive?
4. It takes three hours to fly from Honiara to Santa Cruz. The flight arrived at 1320h on Saturday morning. What time did it leave Honiara?
5. Sara had to go to the dentist so she was 1 hour and 15 minutes late for work yesterday. She should have started at 0800h. What time did she arrive?

Activity B

Look carefully at the time shown on each watch and answer the questions in your exercise book. Use 24-hour notation to write your answers.

1. a. What time will it be five minutes after the time shown?

b. What time will it be one hour later than the time shown?

c. What time was it five minutes before the time shown?

2. a. What time will it be twenty minutes after the time shown?

b. What time will it be one hour later than the time shown?

c. What time will it be ten minutes after the time shown?

3. a. What time was it twenty-five minutes before the time shown?

b. What time will it be two hours after the time shown?

c. What time was it ten minutes earlier than the time shown?

Unit 11

4. a. What time will it be sixteen minutes after the time shown?

b. What time will it be four hours later than the time shown?

c. What time was it thirty minutes before the time shown?

5. a. What time will it be two minutes after the time shown?

b. What time was it thirty minutes earlier than the time shown?

c. What time was two hours earlier than the time shown?

Activity C

Solve the following problems and write the answers in your exercise book.

1. A plane left Honiara at 0700h to fly to Gizo, stopping off at Seghe and Munda. It should have arrived at Gizo at 0855h, but the flight was delayed 10 minutes by late passengers at Seghe. They also had to refuel at Munda which took half an hour. What time did it arrive at Gizo?

2. A teacher takes 12 minutes to mark each pupil's book. There are twenty-one pupils in the class. If the teacher starts marking at 1400h, what time will she have finished all the books?

3. Susie, Joando and Juliette arrange to meet at the wharf at 3.15 p.m. Susie takes a taxi from Kola Ridge which takes 20 minutes. Joando takes a bus from Panatina which takes 25 minutes and Juliette walks from Rove which takes 12 minutes.

a. What time must they each leave home to get to the wharf on time?

b. Joando and Juliette arrive on time but Susie is 15 minutes late. What time did Susie leave home?

c. If Susie left home at 2:35 p.m. how long would she have to wait at the wharf until the others arrived?

Check Up Page

1. **Change the following times to 24-hour notation:**

   a. 6:42 a.m. **b.** 6:42 p.m. **c.** 10:15 p.m. **d.** 12 noon

2. **Change the following 24-hour times to a.m. and p.m:**

   a. 1308h **b.** 0018h **c.** 0545h **d.** 2235h

3. **Here is a timetable for Beso School. The pupils have different lessons each day. Here is the timetable for Monday.**

Monday	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6
0750	registration	registration	registration	registration	registration
0800	assembly	assembly	assembly	assembly	assembly
0820	Maths	Maths	Maths	Maths	Maths
0935	**B**	**R**	**E**	**A**	**K**
1000	English	English	English	English	English
1200	**L**	**U**	**N**	**C**	**H**
1315	Social Studies	Science	Social Studies	Science	Social Studies
1400	Creative Arts	Science	Health	Social Studies	Creative Arts
1445	Science	Health	Science	Creative Arts	Science
1530	Health	Social Studies	Creative Arts	Social Studies	Science
1600	PE	Creative Arts	PE	Health	Health

Study the timetable and then answer the following questions.

a. If classes finish at 1630h how long is the school day?

b. List the things that all the classes do at the same time.

c. How long does Standard 6 spend doing English?

d. Work out how long each class spends on Science on Mondays.

e. Which lesson is the longest one? Write down what time it starts and how long it is.

4. **a.** Mr. and Mrs Tua were going back to their village by canoe. Mr. Tua wanted to leave at 0730h but they didn't leave until 0815h. How many minutes late were they?

   b. They travelled for $2\frac{1}{2}$ hours before having their lunch.
   What time did they have their lunch?

   c. If they arrived at the village at 1415h how long was their journey?

   d. If they had left on time what time would they have arrived?

Unit 12

1a Mixed Operations: Addition and Subtraction

Activity A

Copy these questions and work from left to right to calculate the answers. Show your working out in your exercise book.

1. 18 - 5 + 10 =

2. 10 + 12 - 8 =

3. 10 + 17 - 10 + 17 =

4. 8 - 7 + 6 + 7 =

5. 26 - 5 + 5 =

6. 57 - 8 + 23 =

7. 23 + 17 - 12 + 4 =

8. 48 - 9 + 6 + 3 =

9. 25 - 16 + 14 - 5 =

10. 18 + 19 - 16 + 2 =

11. 34 - 6 + 3 =

12. 46 - 12 - 3 + 15 =

13. 28 + 16 - 23 + 7 =

14. 56 + 12 - 31 + 15 =

15. 57 - 25 + 6 + 16 - 7 =

Activity B

1. 20 + 12 - 8 + 5 =

2. 36 - 24 - 3 + 10 =

3. 36 + 24 - 31 + 10 =

4. 54 - 17 + 3 + 12 =

5. 48 - 24 - 11 + 10 =

6. 25 + 24 - 16 + 15 =

7. 14 + 24 - 11 + 16 =

8. 18 + 24 - 19 + 13 =

9. 37 - 12 - 11 + 8 =

10. 28 + 24 - 29 + 11 =

11. 15 + 17 - 13 - 6 =

12. 34 - 24 - 9 + 13 =

Activity C

Use your mathematical skills. Find the missing numbers to make each number statement true.

1. 12 + 5 - ☐ + 4 = 8

2. 34 - 5 - 9 + ☐ = 10

3. 32 + 5 - ☐ + 14 = 21

4. 24 + 5 - 9 - ☐ = 7

5. 12 - 15 + ☐ = 10

6 17 - 10 + ☐ = 19

7 a.

Take a number through the tunnel.

If you put in 5
What will be the result?

b. If you put in 11, what will the result be?

c. If the result is 11, what number went in?

d. The result is 14, what number went in?

1b Mixed Operations: Multiplication and Division

Activity A

Complete these sums. Use BODMAS to help you remember the order to work out the answer.

1. 6 x 3 + 2 =

2. 6 + 3 x 2 =

3. 4 + 12 ÷ 3 =

4. 12 – 9 ÷ 3 =

5. 8 + 7 x 2 =

6. 10 + 8 x 2 =

7. 10 + 8 ÷ 2 =

8. 20 – 8 x 2 =

9. 15 ÷ 3 x 2 =

10. 16 ÷ 2 x 5 =

11. 4 + 18 ÷ 3 =

12. 12 – 10 + 2 =

13. 8 – 21 ÷ 7 =

14. 9 + 9 x 3 =

15. 16 – 8 x 0 =

Order of Operations

Brackets
of
Division
Multiplication
Addition
Subtraction

Activity B

If you know your multiplication tables you will be able to work these out quickly. Remember the order!

1. 8 + 7 x 9 =

2. 50 – 64 ÷ 8 =

3. 21 + 6 x 6 =

4. 30 – 42 ÷ 7 =

5. 17 + 3 x 8 =

6. 12 + 4 x 7 =

7. 28 – 36 ÷ 4 =

8. 15 – 56 ÷ 8 =

Unit 12

Activity C

Find the missing numbers.

1. 12 + 5 - ☐ = 10

2. ☐ + 40 ÷ 8 = 12

3. ☐ – 3 x 7 = 9

4. 10 + 6 x ☐ = 34

5. 20 – ☐ ÷ 5 = 15

6. 8 + ☐ ÷ 6 = 14

7. ☐ - 8 x 6 = 2

8. 30 ÷ 6 x 9 = ☐

9. 15 + 4 x ☐ = 43

10. 22 – 49 ÷ ☐ = 15

1c Number Sentences

Remember!

When a question involves only division and multiplication work from left to right. BODMAS does not apply.

Activity A

Copy and complete these number sentences in your exercise book.

1. 16 ÷ 4 x 3 =
2. 6 x 4 ÷ 3 =
3. 32 ÷ 8 x 3 =
4. 5 x 6 ÷ 3 =
5. 32 ÷ 4 x 9 =
6. 48 ÷ 12 x 3 =
7. 8 x 2 x 2 ÷ 4 =
8. 48 ÷ 4 ÷ 2 x 6 =
9. 10 x 4 ÷ 8 =
10. 72 ÷ 12 x 8 =
11. 8 x 7 ÷ 4 x 2 =
12. 16 ÷ 4 x 24 ÷ 8 =
13. 20 x 2 ÷ 10 =
14. 12 x 4 ÷ 3 =
15. 16 ÷ 4 x 5 =

Activity B

Copy and complete each number sentence correctly in your exercise book.

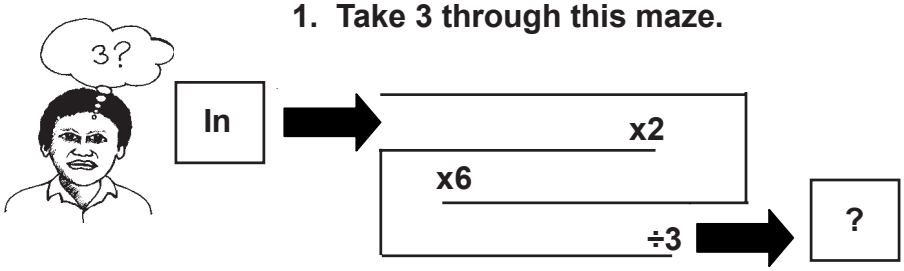
1. 24 ÷ 8 x ☐ = 36
5. 48 ÷ ☐ x 6 = 36

2. 6 x 5 ÷ ☐ = 6
6. 7 x ☐ ÷ 2 = 14

3. ☐ ÷ 5 x 2 = 10
7. 4 x 8 ÷ ☐ = 16

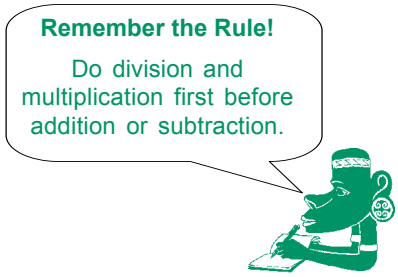
4. ☐ x 7 ÷ 2 = 21
8. 2 x ☐ ÷ ☐ = 5

Activity C



1. **Take 3 through this maze.**
2. **Now take through 4. Write down all the steps. What comes out each time?**
3. **Take through 5.**

1d More Number Sentences



Activity A

Copy and complete this activity in your exercise book.

1. 6 x 4 + 3 x 2 =

2. 24 ÷ 4 + 35 ÷ 7 =

3. 16 ÷ 4 ÷ 2 =

4. 12 x 3 - 4 x 4 =

5. 23 + 7 - 2 x 4 + 6 =

6. 42 ÷ 7 + 81 ÷ 9 =

7. 18 + 14 ÷ 2 =

8. 2 x 3 + 4 x 5 =

9. 100 ÷ 2 - 5 x 5 =

10. 36 ÷ 6 - 20 ÷ 5 =

11. 10 - 2 x 5 + 5 =

12. 100 - 10 x 10 + 10 =

Activity B

Copy out the number sentence and put in the correct mathematical sign to make each statement true. The first one has been done for you.

1. 5 [x] 6 [+] 7 = 37

2. 20 [ ] 12 [ ] 2 = 10

3. 10 [ ] 3 [ ] 2 = 14

4. 12 [ ] 2 - 7 [ ] 2 = 10

5. 10 [ ] 6 [ ] 7 = 52

6. 16 [ ] 12 [ ] 2 = 22

7. 15 [ ] 3 [ ] 2 = 9

8. 12 [ ] 3 - 7 [ ] 2 = 22

Unit 12

2a Working with Brackets

Remember the Rule!
Do the calculation in the brackets first before division, then multiplication, then addition and subtraction.

Activity A

Try these calculations. Copy each sum and work out the answer in your exercise book.

1. (6 x 4) + 3 =

2. 6 x (4 + 3) =

3. (8 + 4) ÷ 3 =

4. 20 - (6 + 3) =

5. (7 x 12) ÷ 4 =

6. 7 x (12 ÷ 4) =

7. (7 x 12) + (4 x 2) =

8. (8 x 2) - (5 x 3) =

9. (5 x 7) + (3 x 5) =

10. (18 x 2) - (15 ÷ 3) =

11. (12 + 6) x (10 - 3) =

12. 37 - (15 - 13) x 3 =

13. (19 - 18) x (37 - 34) =

14. (16 ÷ 8) + (14 - 3) =

Activity B

Remember to work in the right order. Brackets first then division and multiplication followed by addition and subtraction.

1. (3 + 4) x (20 – 11) =

2. (12 – 7) + (9 x 6) – (22 ÷ 2) =

3. 3 x (16 – 14) x (4 + 3) =

4. (13 – 8) + (5 x 5) =

5. 24 ÷ (21 – 15) x (31 – 27) =

Activity C

Put in < or > to show which answer is bigger and which is smaller. The first one has been done for you. Set out your sums in the same way.

Example

1 a. (2 + 6) x (14 – 8) ÷ 12 =
8 x 6 ÷ 12 =
48 ÷ 12 = 4

b. (10 – 3) x (4 + 1) ÷ 7 =
7 x 5 ÷ 7 =
35 ÷ 7 = 5

Answer : 1a < 1b

Remember!
< smaller than
bigger than >
= equal

2 a. (13 + 36) ÷ (11 - 4) x 2 = **b.** (40 – 37) x (11 – 5) x 2 =

3 a. 5 x (21 – 19) x (23 – 21) = **b.** 36 ÷ (32 – 23) x (13 – 5) =

4 a. (63 ÷ 7) ÷ (27 – 24) x 0 = **b.** (2 + 19) ÷ 7 x 9 =

5 a. (10 + 32) ÷ (11 - 5) x 2 = **b.** (34 - 4) ÷ (9 + 1) x 2 =

6 a. (20 + 5) ÷ (13 - 8) x 2 = **b.** (4 + 11) ÷ 5 x 2 =

7 a. (5 + 19) ÷ 6 x 10 = **b.** (2 + 12) ÷ 7 x 8 =

8 a. (12 + 12) ÷ (24 - 12) x 9 = **b.** (2 + 16) ÷ 3 x 8 =

2b More Brackets

Activity A

Copy these number sentences and work out the answers.

1. a. (18 – 6) ÷ (2 + 1) =

b. (16 + 8) ÷ 2 + 1 =

c. (16 + 8) ÷ (2 + 1) =

d. 16 + 8 ÷ 4 + 1 =

e. (18 x 2) ÷ 4 – 8 =

BODMAS

Brackets first then division and multiplication from left to right. Addition and subtraction from left to right next.

2. Can you find the missing numbers? Copy the number sentences so that the answers are correct.

a. 12 – 10 ÷ ☐ = 7

b. ☐ - 3 x 6 = 13

c. (3 + 4) + ☐ x 3 = 22

d. 5 x 4 – (☐ ÷ 3) = 13

e. (12 + 4) ÷ (☐ - 15) = 2

Unit 12

Activity B

1. Find the answers to the following:

a. 96 – (15 ÷ 3 – 45 ÷ 15) x 10 + 4 =

b. (12 x 6 – 11 x 5) x 2 – 12 =

c. 14 + (16 + 12 x 2 – 15) ÷ 5 x 2 =

d. (18 ÷ 6 + 13 x 0) x (14 + 25 ÷ 5) – 7 x 7 =

e. 100 – (28 ÷ 4 + 63 ÷ 9) x 5 – 15 =

2. Fill in the missing symbols +, - , x and ÷. Check your answer and copy out the number sentence correctly.

a. (15 ☐ 25) ☐ 2 ☐ 15 = 65

b. 20 ☐ 2 ☐ 36 ☐ 4 = 1

c. (24 ☐ 4) + (24 ☐ 6) = 10

d. (13 ☐ 3) ☐ (42 ☐ 21) = 8

e. (21 ☐ 17) ☐ (32 ☐ 12) ☐ (9 ☐ 7) = 5

Activity C

Find the answers to the following:

1 a. 200 + 30 x 5 – 15 x 6 =

b. (12 + 9) x (21 – 7) – 94 =

c. 3 x (35 – 9) ÷ 6 =

d. (14 + 11) ÷ (101 – 96) x (8 + 7) =

e. (56 – 47) x (25 – 75 ÷ 3) + 14 =

2. Read the instructions and write your own number sentences.

a. Answer is 10. Include brackets + and x.

b. Answer is 12. Include brackets, - and x.

c. Answer is 25. Include -, + and x.

d. Answer is 16. Include brackets, -, + and ÷.

Check Up Page

Section A

1. 5 + 4 + 3 – 2 =

2. 10 – 4 + 2 + 1 =

3. 6 + 2 – 4 + 5 =

4. 12 – 7 + 6 – 1 =

5. 9 – 3 + 7 + 8 =

6. 2 + 6 x 2 =

7. 3 + 4 x 5 =

8. 10 – 2 x 3 =

9. 4 x 4 + 5 =

10. 7 x 2 – 6 =

Section B

1. 12 ÷ 3 + 7 =

2. 10 + 15 ÷ 5 =

3. 9 – 18 ÷ 3 =

4. 7 + 21 ÷ 7 =

5. 4 + 24 ÷ 8 =

6. 2 x 3 + 4 x 5 =

7. 3 x 4 + 6 ÷ 2 =

8. 5 + 3 x 3 + 2 =

9. 18 ÷ 2 – 3 x 2 =

10. 27 ÷ 9 + 5 x 5 =

Section C

1. (4 + 3) x 4 =

2. 4 + 3 x 4 =

3. (10 – 4) ÷ 2 =

4. 10 – 4 ÷ 2 =

5. 10 x (4 + 2) =

6. 10 x 4 + 2 =

7. 6 + 3 x (2 + 4) =

8. 6 + 3 x 2 + 4 =

9. 20 – 10 x 2 + 3 =

10. (20 – 10) x (2 + 3) =

11. 12 + 12 ÷ 4 – 2 =

12. (12 + 12) ÷ (4 – 2) =

Unit 13

1b Estimating Angles

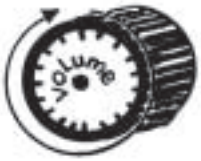
Activity A

Look at the diagrams below and estimate of the angle of movement.

1.

2.

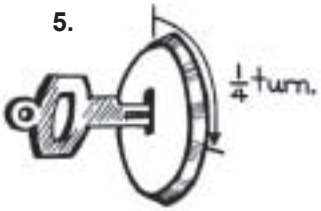
3.



Complete turn.

4.

5.



6.

Several turns to open.

Write one of the following next to the number for each picture in your exercise book.

a. less than 90° **b.** between 90° and 180° **c.** between 180° and 360° **d.** 360° **e.** over 360°

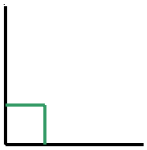
Activity B

1. Look at the angles below. Estimate their size. Remember to write your answer in degrees.

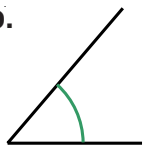
Remember!

A complete revolution measures 360°.
A right angle is a quarter turn and measures 90°.
A straight angle measures 180°.

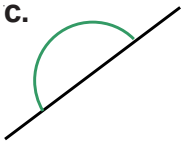
a.



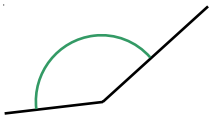
b.



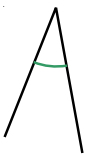
c.



d.

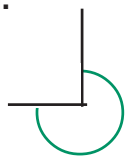


e.

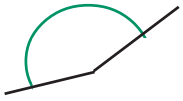


f.

g.



h.



i.

j.

2. In your exercise book draw the following angles:

a. an angle of 90°

b. a straight angle

c. an angle of 270°

d. an angle of 180°

e. an angle between 180° and 270°

f. an angle between 270° and 360°

3. On each of your angles:

a. draw an arc or a square corner to show the angle.

b. label the vertex.

2a Measuring Angles with a Protractor

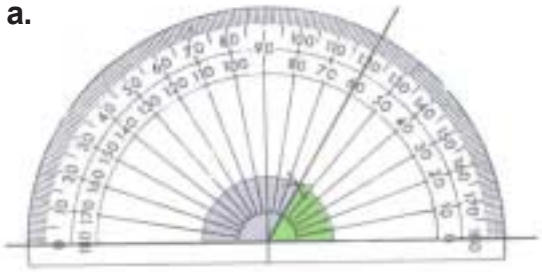
Remember!

The unit of measurement for angles is the degree. The symbol is °.

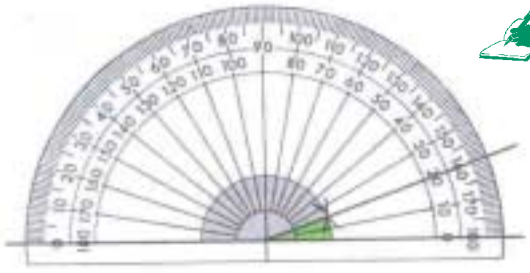
Activity A

Read the measurements on these protractors. For each one write the size of the green angle and the size of the shaded angle.

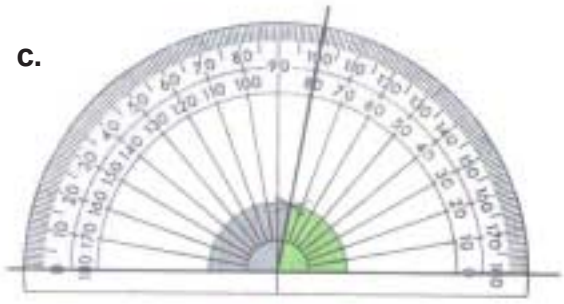
a.



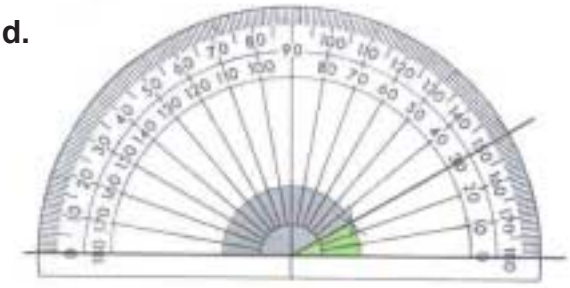
b.



c.

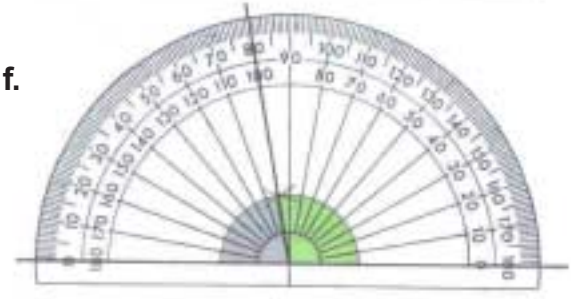


d.



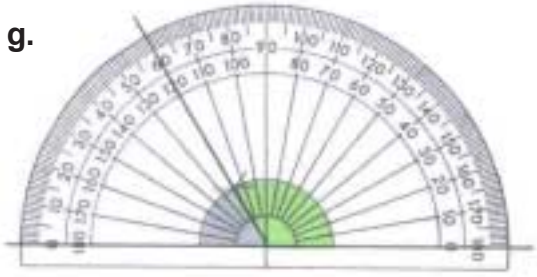
e.

f.

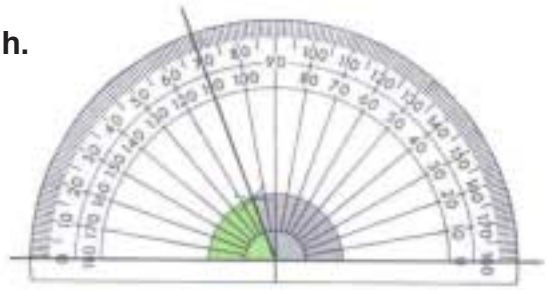


Unit 13

g.



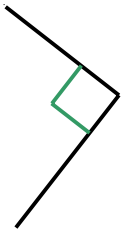
h.



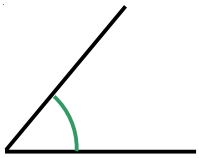
Activity B

Use your protractor to measure these angles. Write your measurements in degrees.

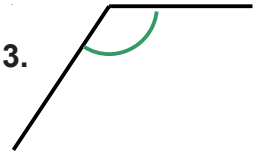
1.



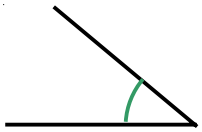
2.



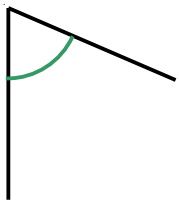
3.



4.

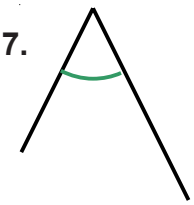


5.

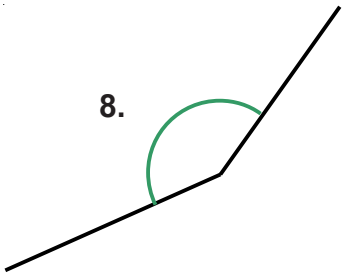


6.

7.



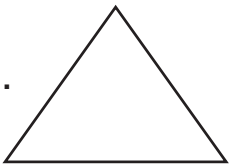
8.



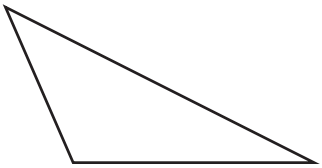
Activity C

Use your protractor to measure the different angles in each of these triangles.

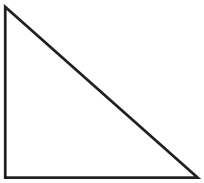
1.



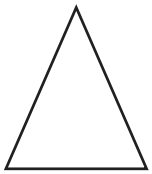
2.



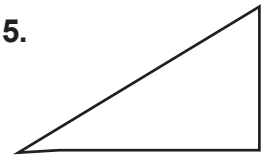
3.



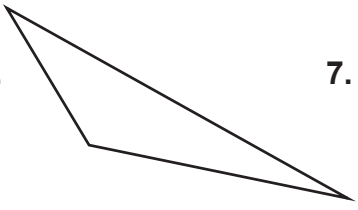
4.



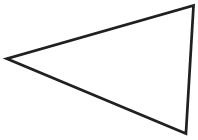
5.



6.



7.



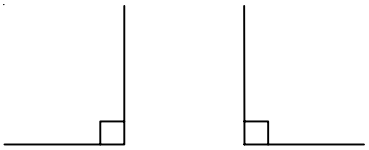
8.

2b Drawing Angles with a Protractor

Activity A

1. **Draw the following angles in your exercise book. Draw each one twice. Once with the vertex on the right, and once with it on the left. The first one has been done for you.**

a. 90°



b. 50° **c.** 70° **d.** 10° **e.** 80° **f.** 30° **g.** 10°

Reminder

A protractor is an instrument used to measure the size of an angle in degrees.

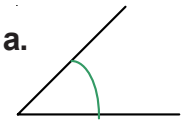
Activity B

1. **Draw these angles. On each one draw an arc to show the angle.**

a. 35° **b.** 85° **c.** 65° **d.** 5° **e.** 15° **f.** 55° **g.** 25°

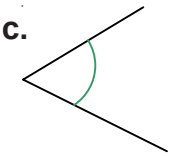
2. **Measure each angle and then draw one which is 10° bigger.**

a.

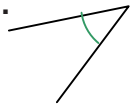


b.

c.



d.



Activity C

1. **Draw each of the angles described below. Put an arc on your diagram to show your angle and write the measurement in degrees next to it.**

   a. Draw an angle which is larger than 90° but smaller than 180°.

   b. Draw an angle between 100° and 110°.

   c. Draw an angle between 125° and 130°.

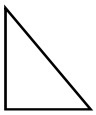
   d. Draw an angle between 90° and 98°.

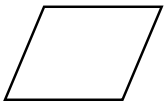
   e. Draw an angle of 180°. Mark the vertex on this angle.

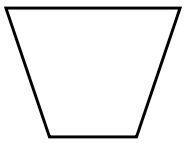
2. **Measure the angles in the shapes on the next page. Draw the shapes, but make each side twice as long. Now measure the angles again. Write the measurements on your diagram.**

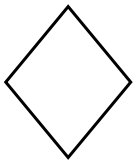
Unit 13

a. 

b. 

c. 

d. 

e. 

Compare the larger shapes with the smaller ones.

What do you notice about the angles you have drawn?

Write a sentence to explain what you have found out.

3a Measuring and Classifying Angles

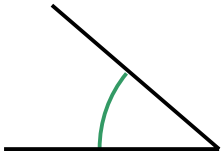
Activity A

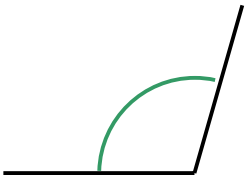
Complete the following

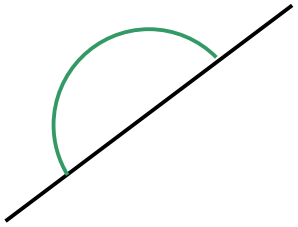
1. An **acute** angle measures less than a right angle.
   An **acute** angle measures less than _____ degrees.
2. A **right** angle measures _____ degrees.
3. An **obtuse** angle measures between 1 and 2 right angles.
   An **obtuse** angle measures between _____ degrees and _____ degrees.
4. A **straight** angle measures _____ right angles.
   A **straight** angle measures _____ degrees.
5. A **reflex** angle measures between _____ right angles and _____ right angles.
   A **reflex** angle measures between _____ degrees and _____ degrees.
6. A **revolution** measures _____ right angles.
   A **revolution** measures _____ degrees.

Activity B

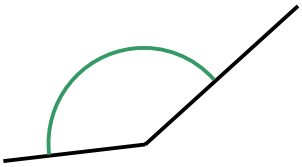
Measure and classify these angles.

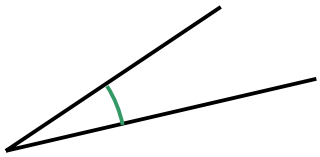
1. 

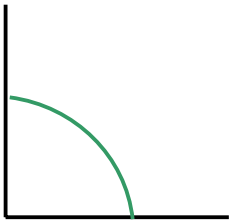
2. 

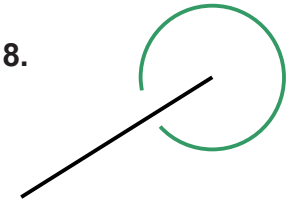
3. 

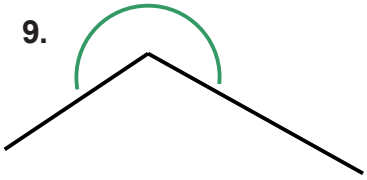
4. 

5. 

6. 

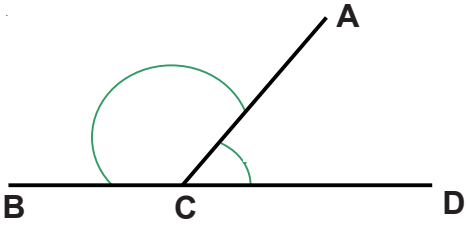
7. 

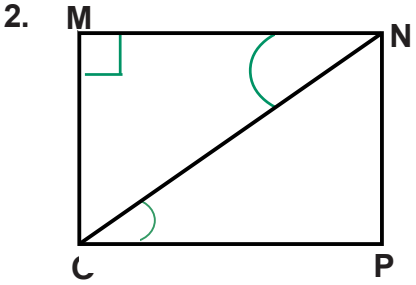
8. 

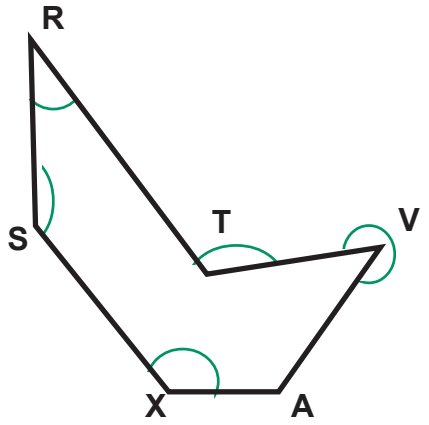
9. 

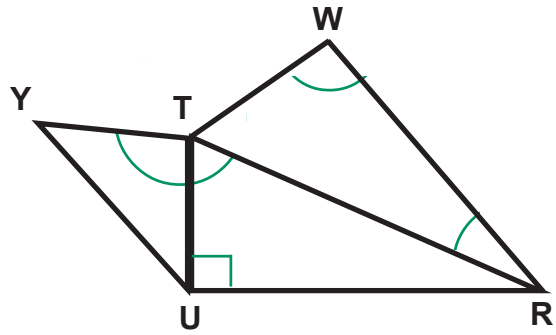
Activity C

Look at the angles in the diagrams below. For each one, name all the angles marked and then write whether the angle is acute, obtuse, a right angle, or a reflex angle.

1. 

2. 

3. 

4. 

Unit 13

5. Draw a shape which has three acute angles.

6. Draw a design with at least eight angles and label the vertices. Draw a table like the one below in your exercise book. Now fill in your table, adding angles from your design to each column.

acute angle	obtuse angle	right angle	reflex angle

3b Angles Around Us

Activity A

Work with a partner. Try out all these positions first then complete the exercise in your exercise book. Name the type of angle formed in each of the following:

1. The angle your body makes when you are sitting up straight in a chair.

2. The angle your body makes when you are lying flat on the ground.

3. The largest angle you can make between your thumb and your first finger.

4. The largest angle you can make with your legs when you sit on the floor.

5. The largest angle you can make with your feet when you stand with your heels together.

6. The angle you can turn your head from one extreme to the other.

7. The angle you can spin around on one foot.

8. The angle of your vision when you are sitting with your head still.

9. The angle of your vision when you are sitting and moving your head.

10. The largest angle you can make with your elbow.

Activity B

Estimate and classify each of the following angles.

1. The angles between the toes of a chicken.

2. The angle grass bends in the wind.

3. The angle you need to turn to turn on the tap of a water tank.

4. The angle you need to turn a door handle to open a door.

5. The angle you need to turn a door to open it.

6. The angle you turn a light switch to turn it on.

7. The angle a person makes with a paddle when paddling a canoe.

8. Describe all of the angles the road or path leading to your school makes.

You will need to go outside to do this activity correctly. Ask your teacher where you should start.

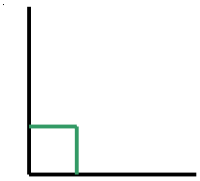
Unit 13

Check Up Page

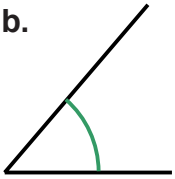
Write out these sentences and fill in the gaps.

1. Angles are measured in _____.
2. ° is the symbol for a _____.
3. There are _____ right angles in 180°.
4. There are 360 ___ in a circle.
5. The instrument used to measure angles is called a _____.
6. There are _____° in a right angle.
7. **Use a protractor to measure each angle. Write down the size of the angle in degrees.**

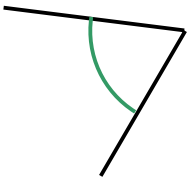
a.



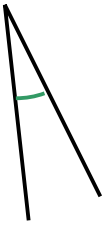
b.



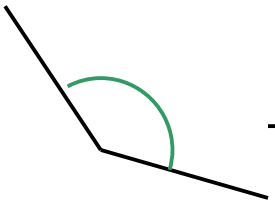
c.



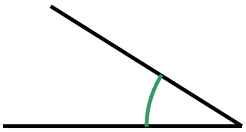
d.



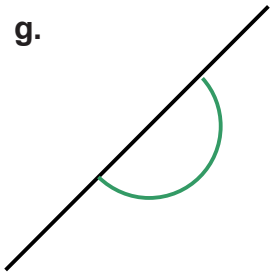
e.



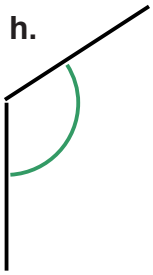
f.



g.



h.



8. **Look at the angles in question 7 again. Classify each one as an acute angle, an obtuse angle, a straight angle or a right angle.**
9. **Without using a protractor draw a reflex angle. Mark an arc on it to show the angle.**

10. Match the angle measurements below with the names of types of angles. Write down both the name and the measurements.

right angle	obtuse angle	straight angle	revolution	reflex angle	acute angle

a. 180°

b. 360°

c. 125°

d. 90°

e. 225°

f. 45°

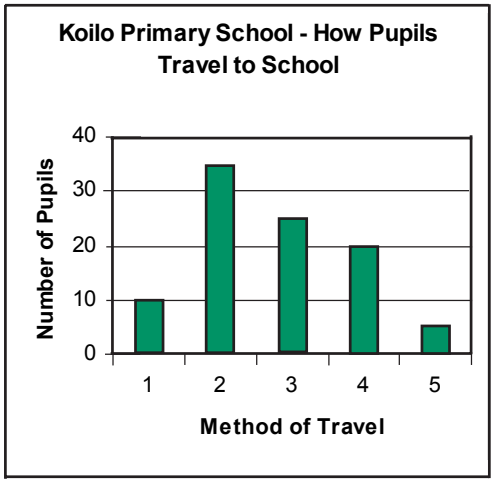
Unit 14

1c Bar Graphs: Revision

Activity A

Study the graph below and answer the questions.

Koilo Primary School conducted a survey to find out how each student travelled to school each day. The results are shown in the bar graph below. Study the graph and then answer the questions in your exercise book.



Key
1. bike
2. bus
3. walk
4. car
5. living at school

1. How many pupils walked to school each day?

2. How many pupils didn't travel any distance to school?

3. How many more pupils travelled by bus than walked?

4. What was the total number of pupils in the survey?

5. What was the most popular form of transport?

Activity B

The table below shows the number of students who wereabsent from school in each class on a particular day.

School Absence Form Record
Date 30th November

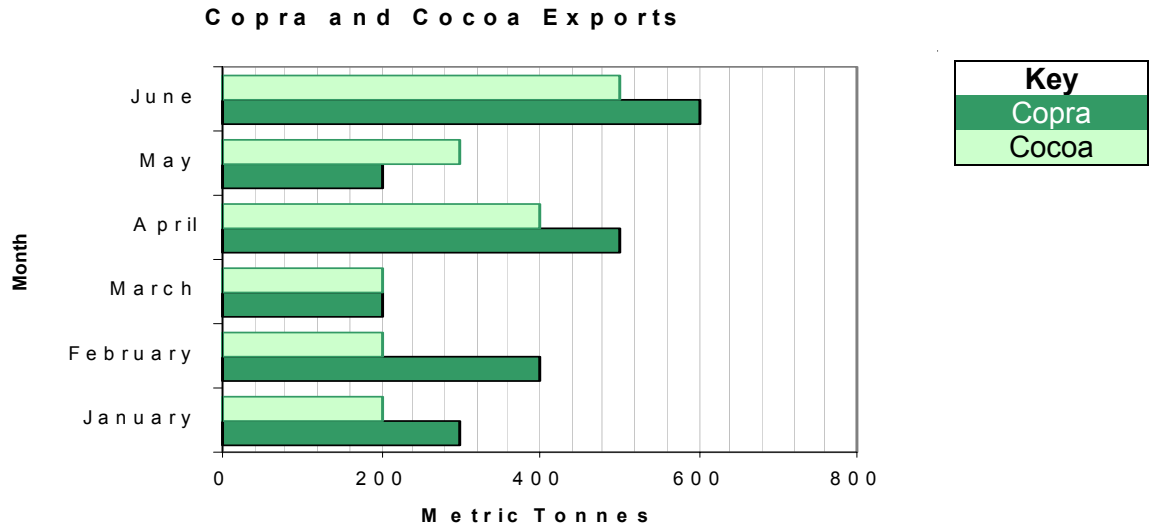
Class	1	2	3	4	5	6
Number of students	8	7	14	12	16	4

Don't Forget
Give your graph a title and label each axis.

Draw a bar graph showing this information in your exercise book.

Activity C

The graph below shows cocoa and copra exports from Solomon Islands in the first 6 months of the year.



Study the graph and answer the following questions in your exercise book.

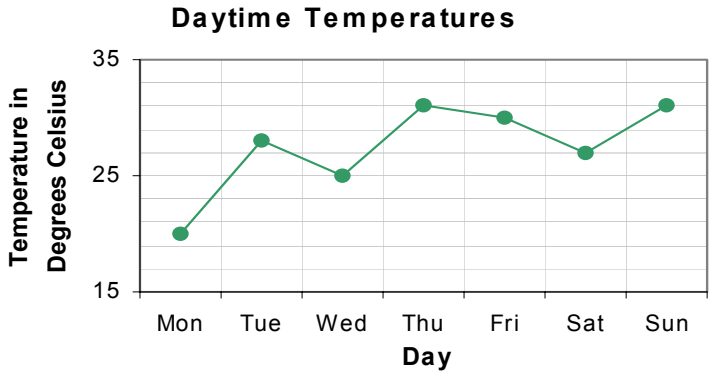
1. What was the total amount of copra exported in the first half of the year?
2. How much more copra was produced during the first 3 months than cocoa?
3. What was the monthly average amount of copra produced during the first 3 months of the year?
4. How much cocoa was produced during the first six months of the year?
5. What was the monthly average amount of cocoa produced for the first half of the year?
6. What was the total weight of exports recorded for the first half of the year?

Unit 14

2a Reading Information from Line Graphs

Activity A

Study the graph below and answer the questions in your exercise book.



Tip

Each line on the y axis represents two degrees Celsius.

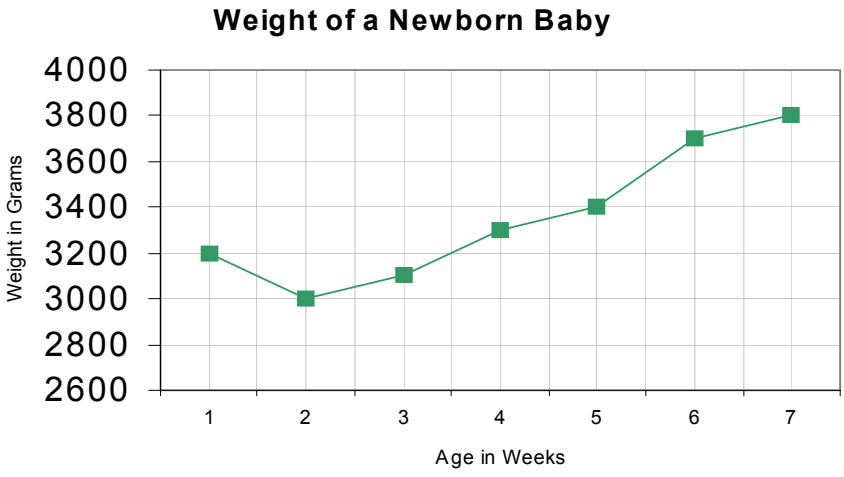
1. What does this graph show?
2. What does the y axis represent?
3. When was the lowest temperature recorded?
4. What was the highest temperature recorded?
5. Which were the warmest days?

Activity B

Study the graph below and answer the questions in your exercise book.

Important!

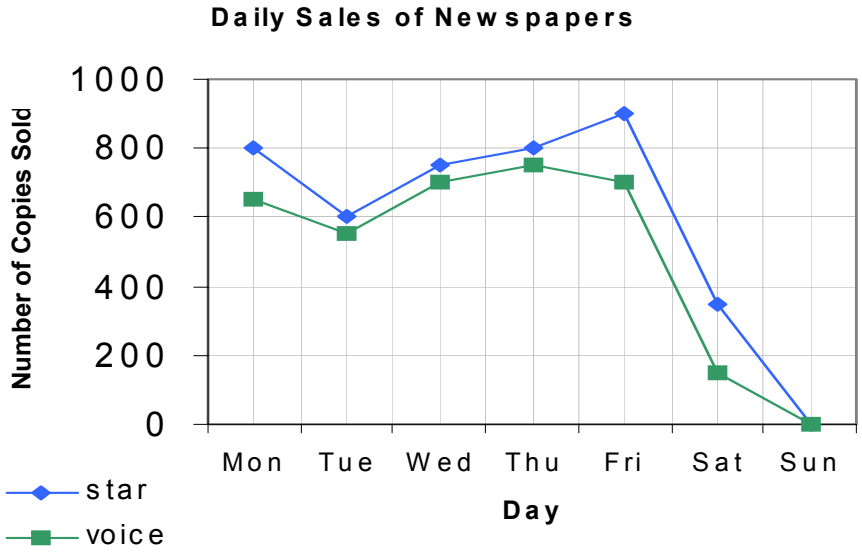
Read the scales on each graph carefully to make sure you know what they represent.



1. How much did the baby weigh when it was one week old?
2. How much did the baby weigh when it was 6 weeks old? Write your answer in kilograms.
3. Did the baby grow in the first week?
4. What happened to the baby's weight when it was 2 weeks old?
5. What was the baby's total weight gain from week one to week 6?
6. Write down two more facts you can read from the graph.

Activity C

Study the line graph below and answer the questions in your exercise book.



1. How many newspapers were sold on Monday?
2. How many newspapers were sold altogether during the week?
3. What was the average daily sale for each newspaper?
4. How many more Solomon Star were sold than Solomon Voice during the week?
5. On which day were most papers sold?
6. How would you explain the data for newspaper sales at the weekend?

3a Drawing Line Graphs

Activity A

John produces copra on a small coconut plantation. The two tables below show the amount of copra he made in the first three months of this year and the price per sack for the same three months. In your exercise book, draw two line graphs to show the data from the tables. Write two sentences under each graph to explain what it shows.

Copra Produced				
	Jan	Feb	Mar	Apr
Number of Bags	20	24	30	26

Copra Prices				
	Jan	Feb	Mar	Apr
Price per Bag	50	55	45	50

Unit 14

Activity B

The air temperature is recorded every four hours by the meteriological office in Honiara. The data is recorded in tables as shown below. These tables are for June 21st 2004 and December 21st 2004 Draw one line graph to compare the information from the tables.

Monday 21 June 2004	
4 a.m.	16
8 a.m.	24
12 noon	28
4 p.m.	27
8 p.m.	24
12 midnight	16

Tuesday 21st December 2004	
4 a.m.	17
8 a.m.	26
12 noon	32
4 p.m.	30
8 p.m.	27
12 midnight	20

Now answer these questions by looking at your graph.

1. On what date, and at what time, were the highest and lowest temperatures recorded?
2. Which day had the highest average temperature?
3. At what time of day were the hottest temperatures recorded?
4. By how much did the temperature vary on each of the days recorded?

Activity C

Three pupils in Standard 6 had a maths text each week for 6 weeks. Their results are recorded in the table below. Draw one line graph to show their results.

Tip!

You should draw a different line for each pupil on your graph.
You could use different colours.

Maths Tests – Marks out of 20						
	week 1	**week 2**	**week 3**	**week 4**	**week 5**	**week 6**
Jemima	19	20	19	17	18	19
Shaun	9	15	14	16	17	18
Jacqueline	13	16	14	15	16	16

Study your graph and write the answers to the following questions in your exercise book.

1. Which pupil is best at maths?
2. Which pupils' scores improved most over the 6 weeks of tests?
3. Which Maths test do you think was easiest?
4. Which pupil's results showed no improvement?
5. Which pupil had an average score of 15 over the 6 tests?

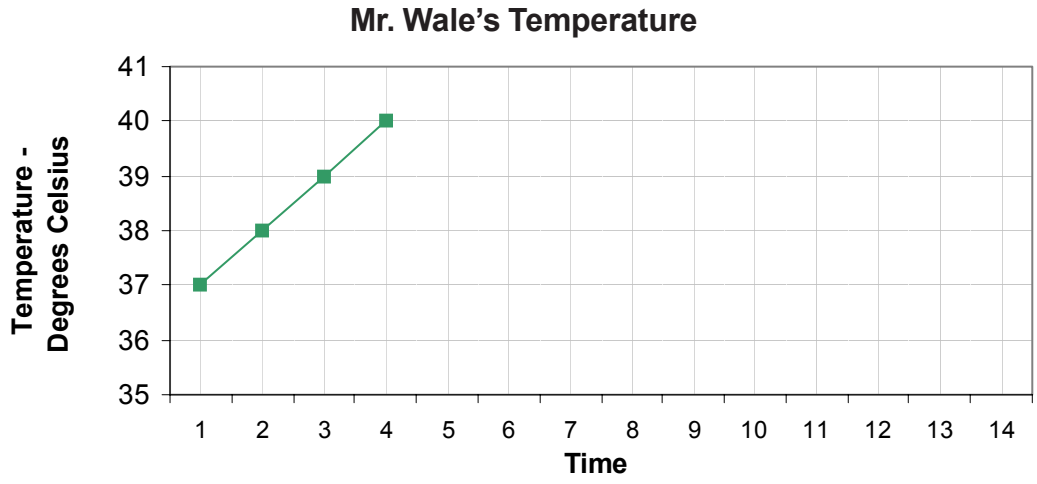
4a Using Co-ordinates

Activity A

The line graph below shows the temperature of a patient in hospital taken every hour from 1 a.m. until 4 a.m.

Copy it into your exercise book and complete the graph by plotting the coordinates shown below:

(12,38) (13,37) (5,40) (14,37) (6,41)
(7,40) (10,38) (8,39) (9,39) (11.38)



Draw a line to connect the points you have plotted. Your line shows how Mr. Wale's Temperature changed throughout the day. Answer the following questions.

1. At what time did Mr. Wale's Temperature start to go down?
2. At what time did his temperature return to normal? (37°)

Activity B

Draw three 10 x 10 grids in your exercise book. Plot the following points on each grid and then match each of your line graphs to one of the descriptions (A, B and C) below. Write the correct description under each graph.

1. (1,3) (2,4) (3,5) (4,6) (5,7) (6,8)
2. (1,8) (2,6) (3,4) (4,2) (5,4) (6,6) (7,8)
3. (1,10) (2,6) (3,5) (4,4) (5,3) (6,2) (7,1) (8,0)

A. This graph shows a sudden decrease at first, followed by a more gentle decrease.

B. This graph shows a steady increase.

C. This graph shows a gradual decrease to a low point in the middle, followed by a gradual increase.

Unit 14

Activity C

Plot the following sets of coordinates on a grid and match one title to each graph.

1. (1,60) (2,65) (3,70) (4,75) (5,75) (6,80)
2. (1,32) (2, 32) (3,31) (4,30) (5,28) (6,27) (7,26) (8,24) (9,22) (10,20) (11,18) (12,16)
3. (1,30) (2,26) (3,28) (4,27) (5,28)

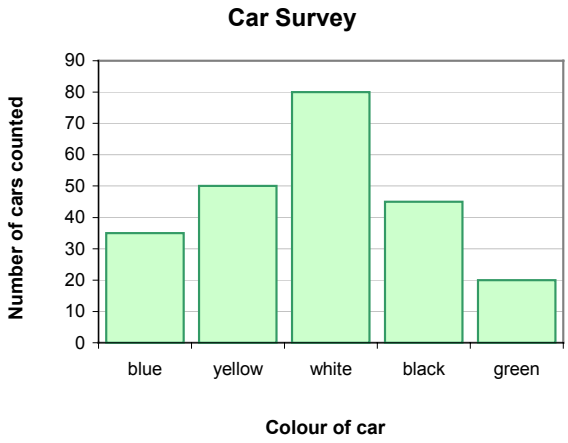
A. Number of pupils attending school, Monday to Friday

B. Increase in the price of rice over the first 6 months of the year

C. Air temperatures from 1.p.m. to midnight.

Check Up Page

1. **Standard 5 pupils at St. John's Primary School conducted a traffic survey to find out what colour cars passed their school gate. They recorded their results on the bar graph below. Study the graph and answer the questions.**



a. How many cars were counted altogether?

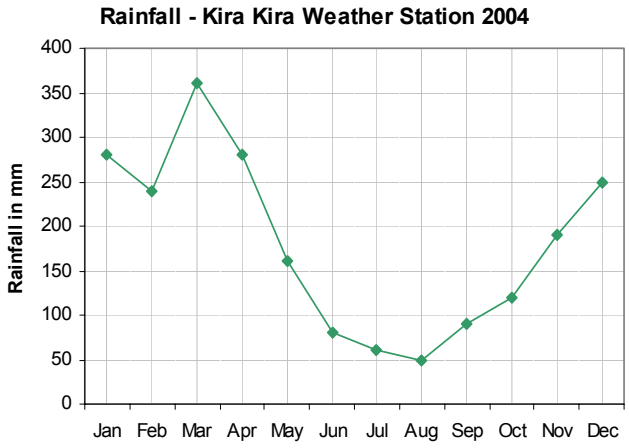
b. Which colour car was most common?

c. How many black cars were there?

d. How many more blue cars were there than green cars?

e. Draw a table to show the data from the graph in order. Start with the least common colour.

2. **Study the line graph below and use the data from it to answer the following questions.**



a. What does the graph show?

b. In which months were the highest and lowest rainfall figures recorded?

c. What was the total rainfall for the year?

d. In which month did the rainfall total 160ml?

e. What was the total rainfall for the dry season (April to October)

f. Write a few sentences to explain the data presented on the graph.

Unit 14

3. **Convert the information in the table below into a line graph.**

Joseph's Height										
Age in years	1	2	3	4	5	6	7	8	9	10
Height in centimetres	65	76	83	100	110	115	130	134	136	140

4. **A market seller kept a record of how much fruit she sold each day for a week and recorded her results in a table as shown.**

   Draw a line graph to show the information from the table.

	Mon	**Tue**	**Wed**	**Thu**	**Fri**	**Sat**	**Sun**
Pineapples	**60**	**40**	**45**	**60**	**65**	**80**	**20**
Melons	**0**	**20**	**30**	**45**	**50**	**60**	**0**

Unit 15

1b Hot and Cold

Activity A

1. **Copy these temperatures into your exercise book. Draw a circle around the** highest **temperature in each line. Put the** lowest **temperature in a square.**

   a. 97°C 39°C 73°C

   b. 11°C 100°C 1°C

   c. 21°C 12°C 22°C 102°C

   d. 0°C 13°C 3°C 43°C

Remember!
Boiling point of water is 100°C.
Freezing point of water is 0°C.

2. **Draw three objects which you think are cold. Label each object.**
3. **Draw three objects which you think are hot. Label each object.**
4. **What instrument do we use to measure temperature?**
5. **What units do we use for measuring temperature?**

Activity B

1. **Copy out each statement and write the most appropriate answer.**

   a. Ice melts at 37°C 10°C 0°C

   b. A hot day in Solomon Islands is 66°C 34°C 23°C

   c. A cup of iced juice is 40°C 0°C 5°C

   d. Warm clothes are needed when the temperature is 34°C 20°C 50°C

2. **Which is the lowest temperature?**

   a. a warm day in Solomon Islands

   b. body temperature

   c. freezing point

3. **Which is the highest temperature?**

   a. boiling point

   b. the lava in a volcano

   c. a bread oven

4. **Write out each statement and add the most appropriate answer.**

   a. The body temperature of a sick child is

   39°C 37°C 31°C

   b. The difference between normal body temperature and boiling point is

   37°C 100°C 63°C

   c. The difference between boiling point and freezing point is

   100°C 200°C 0°C

Unit 15

1c Reading Thermometers

Activity A

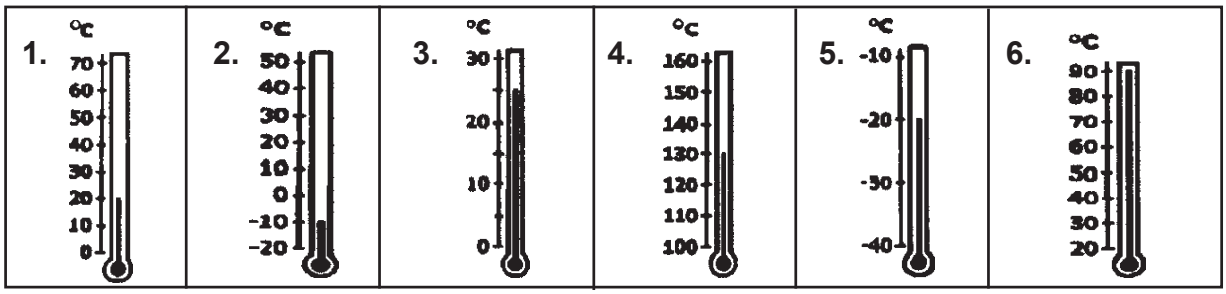
Look carefully at each thermometer.

For each one write:

a. The highest temperature it can read.

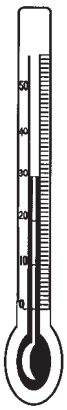
b. The lowest temperature it can read.

c. The temperature it is showing now.



Activity B

1. Look at this thermometer and then answer the questions.



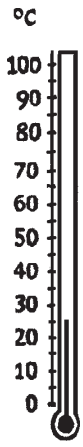
a. What is the temperature range of this thermometer?

b. Would you use this thermometer to measure the temperature of a boiling pan of water? Explain your answer.

c. What would the temperature be if it rose by 12°C?

d. What would the temperature be if it dropped by 7°C?

2. Study the thermometer and answer the questions.



a. What temperature does the thermometer show?

b. Would you use this thermometer to measure the temperature in an oven? Explain your answer.

c. What would the temperature be if it:

i) rose by 17°C?

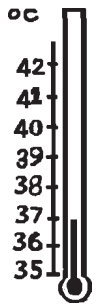
ii) dropped by 19°C?

iii) dropped by 25°C?

iv) dropped by 30°C?

Activity C

1. **Look at this thermometer and then answer the questions in your exercise book.**



   a. What is the temperature range of this thermometer?

   b. What do you think this thermometer would be used for?

   c. What temperature does this thermometer show?

   d. What does this temperature tell you?

2. **On a certain day the temperature in Finland went from - 8°C at breakfast to 16°C at lunch time. What was the temperature rise?**

3. **Look at the table below. This shows the temperature ranges recorded on January 12th 2004 in different countries. Some of the temperatures are missing. Can you copy and complete the table in your exercise book?**

Country	minimum temperature	maximum temperature	temperature change
Norway	-12°C	-3°C	9°C
Australia	18°C	34°C	
New Zealand	11°C		16°C
France		6°C	8°C
South Africa	18°C		19°C
Arctic	-40°C		20°C
Solomon Islands		35°C	7°C
India	15°C	27°C	

2a Plotting and Reading Temperature Graphs

Activity A

In this activity you will need to use the data you have collected in your experiment. If you were not able to collect your own data here is a set of data you could use.

Table of Temperature Readings Taken Between 090 and 1330										
Time	0900	0930	1000	1030	1100	1130	1200	1230	1300	1330
Temp °C	22°C	23°C	27°C	28°C	30°C	31°C	33°C	33°C	33°C	33°C

Unit 15

1. **In your exercise book draw a line graph using your data, or the data provided above. Follow the instructions below.**
   - **a.** Put the temperature on the y-axis and the time on the x-axis.
   - **b.** Work out an appropriate scale.
   - **c.** Mark each co-ordinate with a small dot.
   - **d.** Join the dots together with straight lines.

Graphs

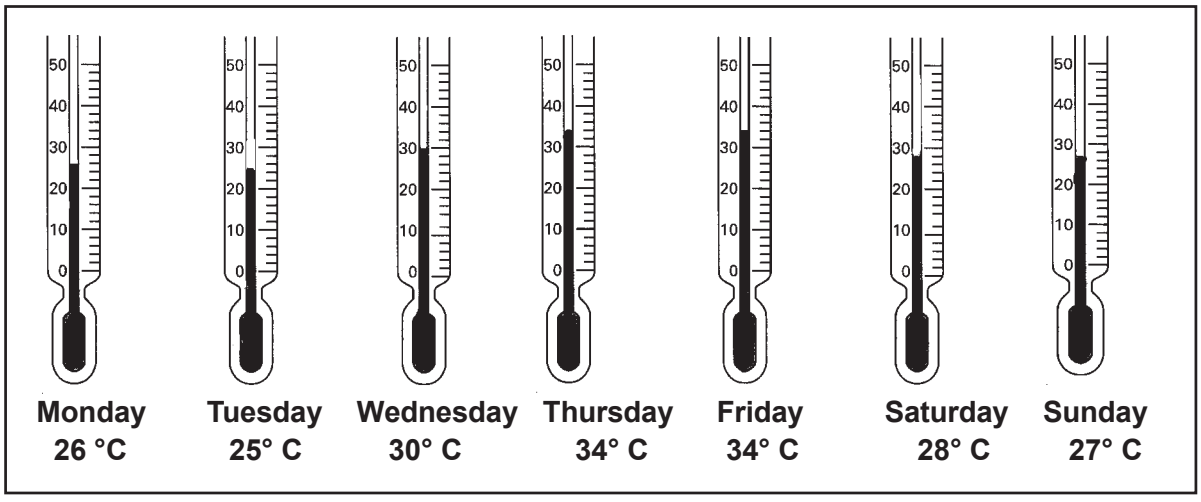
The horizontal axis is the x-axis. The vertical axis is the y-axis.

2. **Study your graph and write some sentences about it. Think about questions like these to help you.**
   - What was the temperature range during the time of data collection?
   - At what time of day was the temperature the highest?
   - At what time of day was the temperature the lowest?
   - What was the average temperature?
   - In which half hour was the temperature rise the greatest?

You will also be able to draw other conclusions from your graph.

Activity B

Here are thermometer readings taken each day at 12 noon over a week.



1. **a.** Make a table of the readings.
   b. Draw a graph to show the results.
   c. What information can you read from your graph?

Helpful Tip

Graphs must have a title and labelled axes.

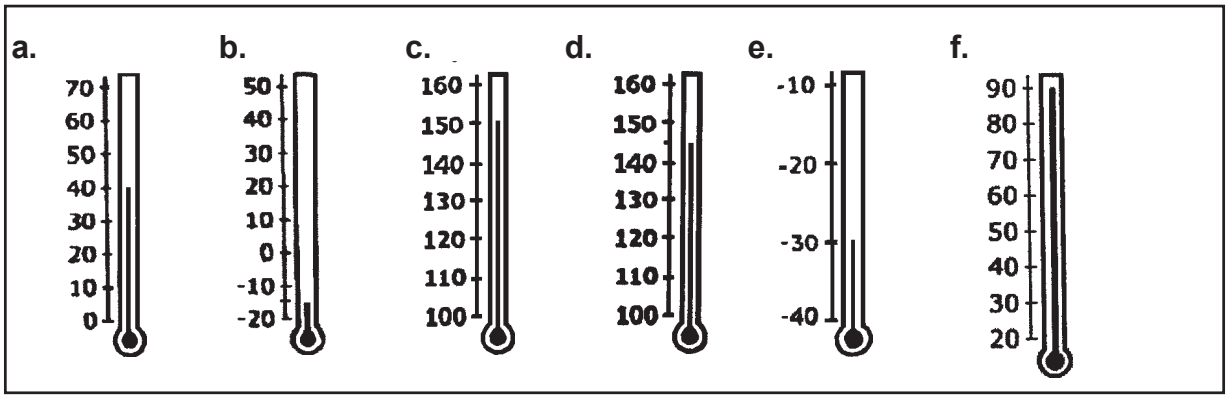
2. **Discus your answer to 1c with a partner. Have you both come to the same conclusions? Can you add any other points after your discussion?**

Check Up Page

Choose the best answer to complete each sentence. Write out the whole sentence correctly.

1. An instrument used to measure temperature is called a
   - **a.** millimetre.
   - **b.** Celsius.
   - **c.** thermometer.
   - **d.** telephone.
2. Temperature is measured in
   - **a.** cubic degrees.
   - **b.** degrees.
   - **c.** cold degrees.
   - **d.** degrees Celsius.
3. The boiling point of water is
   - **a.** - 10°C.
   - **b.** 100°C.
   - **c.** 10°C.
   - **d.** 0°C.
4. Normal body temperature is
   - **a.** 37°C.
   - **b.** 0°C.
   - **c.** 30°C.
   - **d.** 37°F.

5. What temperature does each thermometer show?



Unit 15

6. Read through these statements. Decide if they are true or false. Write out all the ones which are true.

a. The coldest temperature which can be recorded is 0°C.

b. Every thermometer has the same scale.

c. A thermometer is filled with mercury, alcohol or spirit.

d. If you hold a thermometer by the bulb you are recording the temperature of your hand.

e. The freezing point of pure water is 0°C.

f. To take air temperature the thermometer should be put in the shade.

g. The temperature range between - 9°C and 18°C is 9°C.

h. The temperature range between - 7°C and 18°C is 25°C.

i. If the temperature goes from - 5°C to - 1°C this is called a temperature drop.

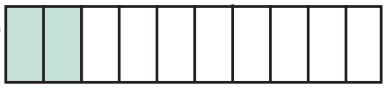
j. If the temperature goes from 0 °C to 50°C this is called a temperature rise.

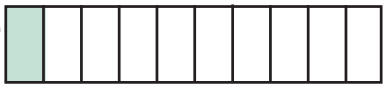
Unit 16

1a Revising Fractions

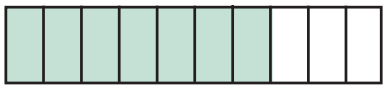
Activity A

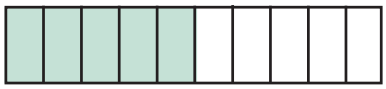
What fraction of each shape is shaded?

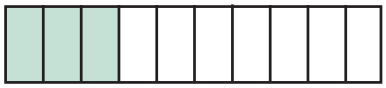
1. 

2. 

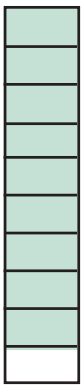
3. 

4. 

5. 

6. 

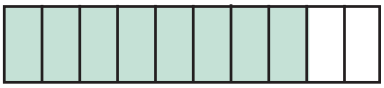
7. 

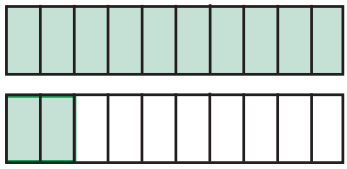
8. 

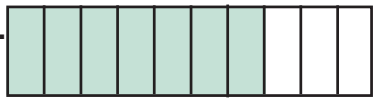
9. 

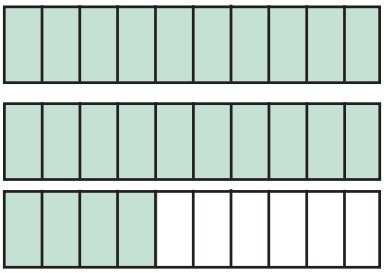
10. 

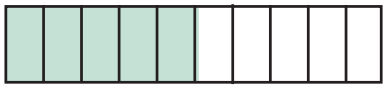
Write the fraction of the shaded part of each shape as a decimal.

11. 

12. 

13. 

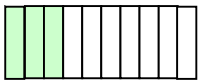
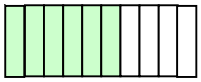
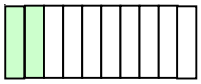
14. 

15. 

Unit 16

Activity B

Copy and complete the table below. Some parts have been filled in for you.

	Parts Shaded	Fraction in Words	Fraction Notation	Decimal Notation
1.		three tenths	$\frac{3}{10}$	**0.3**
2.				
3.			**1.7**	
4.		two tenths		
5.			$1\frac{5}{10}$	
6.				**2.6**

1b Fractions of One Hundred

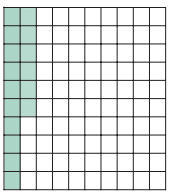
Remember!

A fraction of a hundred has special name. It is called percentage.

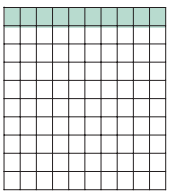
Activity A

What fraction of the whole square is shaded?

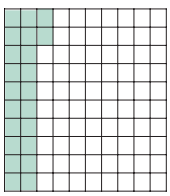
1.



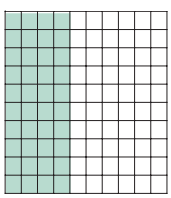
2.



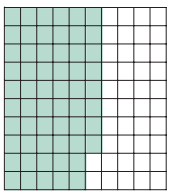
3.



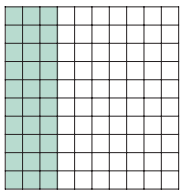
4.

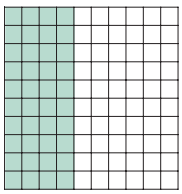


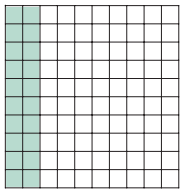
5.

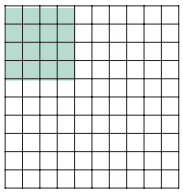


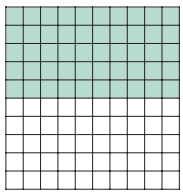
What percentage of the whole square is shaded?

6. 

7. 

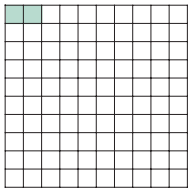
8. 

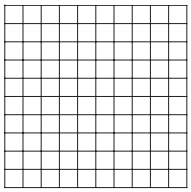
9. 

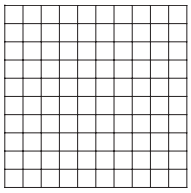
10. 

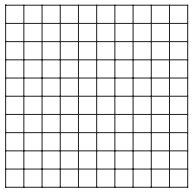
Draw and shade the following fractions. The first one has been done for you.

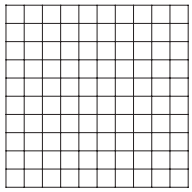
$\frac{2}{100}$ or 2% $\frac{15}{100}$ or 15% $\frac{6}{100}$ or 6% 18% 51%

11. 

12. 

13. 

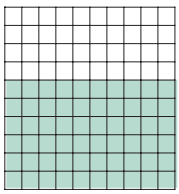
14. 

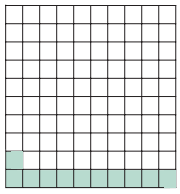
15. 

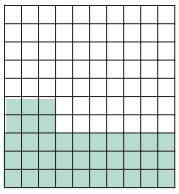
2a Writing Fractions as Percentages

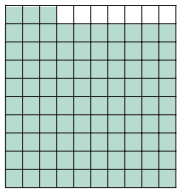
Activity A

What percentage of each square is shaded?

1. 

2. 

3. 

4. 

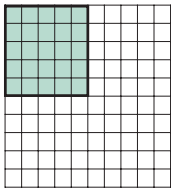
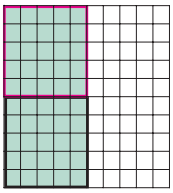
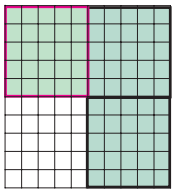
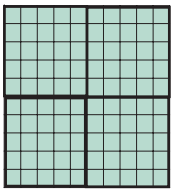
Write the decimal fractions for the following.

5. $\frac{25}{100}$ **6.** $\frac{1}{4}$ **7.** $\frac{50}{100}$ **8.** $\frac{1}{2}$ **9.** $\frac{75}{100}$ **10.** $\frac{3}{4}$

Unit 16

Activity B

Copy and complete the table below in your exercise book.

	Shaded Parts	Fraction in Words	Fraction notation	Percentage	Decimal Notation
1.		twenty-five hundredths	$\frac{25}{100}$ or $\frac{1}{4}$		0.25
2.					
3.					
4.					

Activity C

1. At a party, John and Mary drank $\frac{3}{4}$ of the jug of juice.

a. What percentage of the juice did they drink?

b. What percentage was left?

2. In a school of boys and girls, 50% were boys. What fraction of the students were female?

3. Work out each amount.

a.	50% of $100	**i.**	50% of 1 kg
b.	75% of $100	**j.**	25% of 2 kg
c.	10% of $20	**k.**	10% of 300 m
d.	50% of $50	**l.**	60% of 1 km
e.	25% of $80	**m.**	75% of 4 km
f.	60% of $50	**n.**	20% of 1 hour
g.	90% of $1	**o.**	25% of 2 hours
h.	100% of $75	**p.**	50% of $3\frac{1}{2}$ hours

2b Problem Solving with Percentages

Activity A

Find the equivalent fraction to the following percentages. Write your fraction as a hundredth. The first one has been done for you.

1. 10% = $\frac{10}{100}$ **2.** 5% = **3.** 20% = **4.** 60% =

5. 40% = **6.** 25% = **7.** 80% = **8.** 15% =

Rename these fraction by simplifying them to their lowest terms.

9. $\frac{25}{100}$ **10.** $\frac{10}{100}$ **11.** $\frac{45}{100}$ **12.** $\frac{50}{100}$

13. $\frac{75}{100}$ **14.** $\frac{60}{100}$

Remember!

To change a percentage into a fraction follow these simple rules.
1. First put the percentage over 100.
2. Then divide the numerator and denominator by the same number.
3. Keep dividing until you cannot divide it anymore.

Unit 16

Activity B

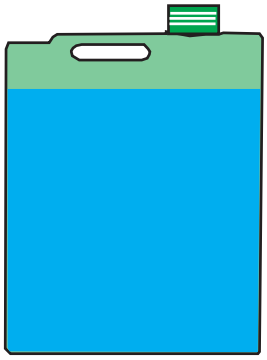
Problem Solving

1. The principal of Kolomao Primary School took 100 litres of water to their school picnic. During the the picnic:

25% of the water was used for cooking.

15% was used for washing

50% of the water was used for drinking



a. What fraction of the water was used for drinking?

b. What fraction was used for washing?

c. What fraction was used for cooking?

d. What percentage of the water was not used?

2. 20 children went on a school picnic. After the picnic, 12 out of the twenty children returned home on the school bus, the rest walked.

a. What fraction of the children walked home?

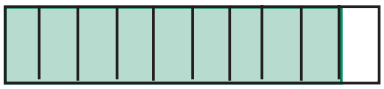
b. What percentage of the children went home on the bus?

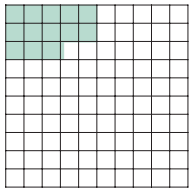
Check Up Page

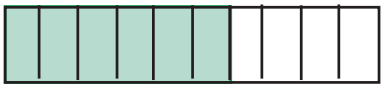
Write an equivalent fraction for each of these fractions. The denominator has been given to you.

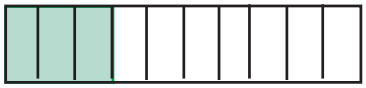
1. $\frac{1}{2} = \frac{\quad}{10}$ **2.** $\frac{1}{5} = \frac{\quad}{10}$ **3.** $\frac{4}{10} = \frac{\quad}{5}$ **4.** $\frac{1}{2} = \frac{\quad}{100}$ **5.** $\frac{1}{4} = \frac{\quad}{100}$

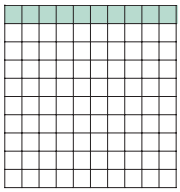
Write the decimal fraction for each shaded part.

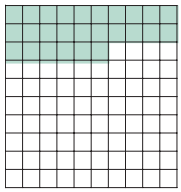
6.  $\frac{9}{10} =$

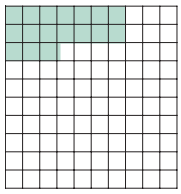
7.  $\frac{13}{100} =$

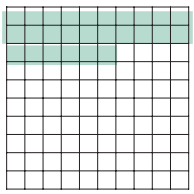
8.  $\frac{6}{10} = \_\_\_$

9.  $\frac{3}{10} = \_\_\_$

10.  $\frac{10}{100} = \_\_\_$

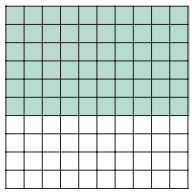
11.  $\frac{26}{100} = \_\_\_$

12.  $\frac{17}{100} = \_\_\_$

13. 

What percent of the square is shaded?

What fraction of the whole square is this?

14. 

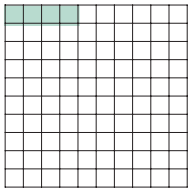
How many hundredths are shaded?

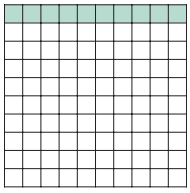
What percent is this?

15. $\frac{45}{100}$ **is the same as 45% is this true or false?**

16. Which of these is the largest fraction? Write the fraction.

0.4 **4%** $\frac{10}{100}$





Unit 16

17. Anna and Martha shared a melon during their school lunch.

a. What percentage of the melon did each one eat?
b. What fraction of the melon did Martha eat?
c. What was the largest fraction eaten?
d. What fraction of the melon did Anna eat?

18. Write these in order beginning with the smallest.

a. $\frac{1}{4}$, 20%, 0.5

b. 0.25, $\frac{1}{3}$, 10%

c. 75%, $\frac{2}{5}$, 0.1

d. 100%, $\frac{3}{4}$, 0.8

e. 1 , 16%, 0.25

Unit 17

1a Probability Problems

Activity A

1. In the washing bucket there are three pairs of shorts, six T-shirts and one skirt. If you pick something out of the bucket at random,
   - **a.** Which one are you most likely to pick?
   - **b.** Which one are you least likely to pick?
2. A bag contains 20 strawberry lollies, 10 cola lollies and 10 lemon lollies, you can choose one lolly from the bag without looking
   - **a.** What is the chance that you will pick a strawberry lolly out of the bag?
   - **b.** Is there a chance that you will pick a raspberry lolly?
3. The children in class 5 (20 boys and 18 girls) all wrote their names on pieces of paper and folded them up. The teacher mixed up the names and picked out one name to be the class captain.

   Is the class captain more likely to be a girl or a boy?

Activity B

Using your set of shape cards, answer the following questions:

1. What is the chance that you will pick a rectangle on the first pick?
2. What is the chance that you will pick either a rectangle or a square?
3. Which shape are you least likely to pick?
4. If you removed all the rectangles, which shape would you be most likely to pick?
5. How many times do you think you might have to pick before you picked a circle?

Write your answers first and then test them out using the shape cards to see how accurate your predictions were.

Remember to replace cards after you pick them and mix them all up again.

1b Writing Probability as a Fraction

Activity A

Express the following probabilities in the form of a fraction:

1. The probability that a new baby will be a girl.
2. The probability that a coin will land with the head up when tossed.
3. The probability that a child was born on a Monday.
4. The probability that a dice will land on a six.
5. The probability that a pencil picked from a packet of 10 different colours will be red.

Unit 17

Activity B

Express the following probabilities in the form of a fraction:

1. The probability that two coins, when tossed, will both land with their heads facing up.
2. The probability that when an egg hatches it will be a cock.
3. The probability that a letter of the alphabet picked at random will be a T.
4. The probability that a letter of the alphabet picked at random will be a vowel.
5. The probability that a letter of the alphabet picked at random will come before N in the alphabet.

Remember!

A probability of 1 means that an event is certain to occur.

Activity C

Use the set of 16 shape cards.

Write down the probability of picking each shape as a fraction. The first one has been done for you.

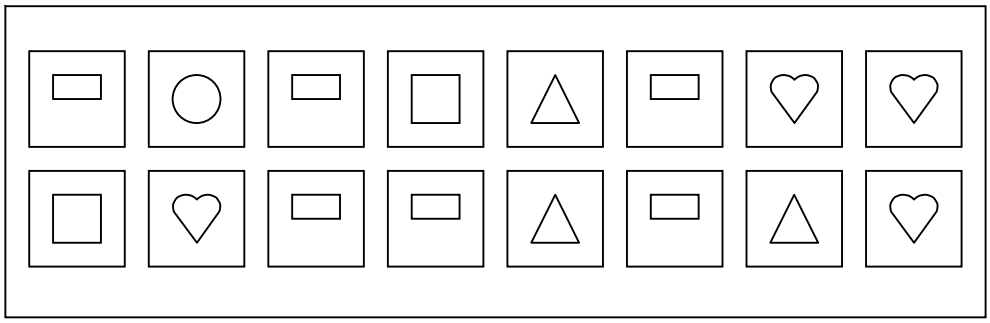
1a. heart **4/16 or 1/4**

1b. square

1c. rectangle

1d. circle

1e. triangle



1c

Activity A

Work with a partner. You need two 20-cent pieces. Draw a chart like the one shown, in your exercise book.

You are going to toss your coins a total of 40 times.

Write your estimate of how many times you will get each result in the first column of your table before throwing the coins.

	Probability	Actual
head / head		
tail / head or head / tail		
tail / tail		

Keep a tally of your results as you throw the coins and when you have completed 40 throws calculate the actual number for each combination and complete the table.

Write both your estimates and your results as a simple fraction.

Compare your estimate with your result. Write a sentence about what you find.

Activity B

Number of heads thrown	zero (tail / tail)	one (head / tail or tail / head)	two (head / head)
Number of throws	8	20	12

In this example two heads were tossed on 12 out of 40 throws.

We can express this result as a fraction 12/40, which simplifies to 3/10.

Reminder

To simplify a fraction we divide both figures by the lowest common denominator.

Now answer the following questions.

1. **Write the result for the following throws as a fraction. Remember to simplify your fractions.**

   a. no heads

   b. one head

2. **Repeat the experiment using two coins. Work with a partner. Draw a table in your book like the one above and record each of your throws using a tally. When you have completed 40 throws, complete the following activities.**

   a. Write your results for each column as a fraction.

   b. Compare your results with the example above. Discuss this with your partner and note down and similarities that you find.

   c. Explain why you think the tables are similar.

Activity C

The table shows the results of a maths test in a class of 35 pupils. It shows that 5 pupils got 10/10, 10 pupils got 9/10 and so on.

Mark out of 10	10	9	8	7	6	5	4
Number of pupils	5	6	8	3	7	4	2

Unit 17

1. **Express each of the results as a fraction. Simplify the fractions if possible. The first one has been done for you.**
   - **a. Pupils who scored 10/10 5/35 or 1/7**
   - **b.** Pupils who scored 9/10
   - **c.** Pupils who scored 8/10
   - **d.** Pupils who scored 7/10
   - **e.** Pupils who scored 6/10
   - **f.** Pupils who scored 5/10
   - **g.** Pupils who scored 4/10

2. **Write each of the following as a simple fraction:**
   - **a.** 80 out of 100 children who paid their school fees on time.
   - **b.** 75 out of 100 people in the village who have visited Honiara.
   - **c.** Out of 36 children in the class, 24 are boys and 12 are girls.
   - **d.** 14 out of 56 pupils who have had malaria this year.
   - **e.** 5 out of 15 standard 6 pupils who got places at secondary school.

2a What is the Likelihood?

Activity A

Draw a table in your exercise book as shown. Look at the following list of events and write each one in the correct column.

The first one has been done for you.

Probability of 1	Probability of $\frac{1}{2}$	Probability of 0
		I will live for ever

1. I will live forever.
2. My mum's new baby will be a boy.
3. My teacher next year will be a woman.
4. Oranges will grow on my banana tree.
5. If I pick a card from the pack without looking it will be a black card.

6. If I am alive, I will be older this time next year.
7. My engine will run without petrol.
8. A paw paw seed will grow into a paw paw tree.
9. A melon seed will grow into a pumpkin.
10. In a football match between Kolalae and Kossa, Kossa will win.

Activity B

Read each question carefully and select the result which has a probability of $\frac{1}{2}$.

1. **I pick a card at random from a pack of cards:**
   - **a.** it is a spade;
   - **b.** it is a ten;
   - **c.** it is a red card.
2. **I throw a dice:**
   - **a.** it lands on a 6;
   - **b.** it lands on a number less than 4;
   - **c.** it lands on a 3.
3. **I toss two coins:**
   - **a.** They both land with the heads face up;
   - **b.** I get one head and one tail;
   - **c.** I get two tails.
4. **I drop the dictionary and it falls open at random:**
   - **a.** It falls open at the letter T.
   - **b.** It falls open somewhere between the letter u and the letter z.
   - **c.** It falls open somewhere between the letter n and the letter z.
5. **My mother is expecting twins:**
   - **a.** She will have one boy and one girl.
   - **b.** She will have two boys.
   - **c.** She will have two girls.

Reminder.
A probability of $\frac{1}{2}$ is the same as an even chance, a 50:50 chance and an equal chance.

If you have time see if you can make up some more of these multiple choice questions and try them on your partner.

Unit 17

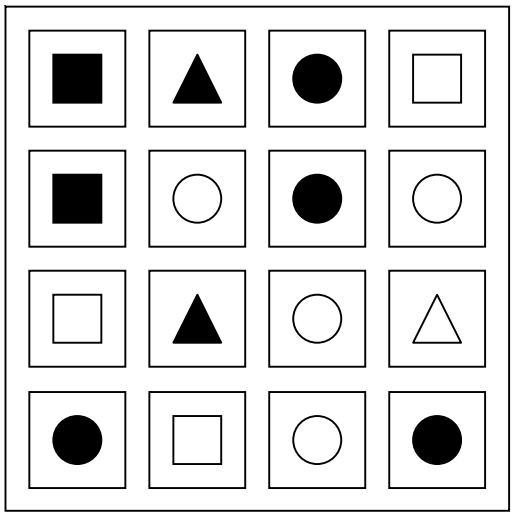
Activity C

1. **A bag contains 12 stones as follows: 6 black, 3 grey, 1 brown and 2 white.**
   - **a.** You pick out one stone from the bag without looking. Write down two possible results each of which has a probability of less than $\frac{1}{2}$.
   - **b.** Which colour stone has a probability of $\frac{1}{2}$ of being picked out of the bag?

2. **You share out a pack of cards between two players. Write down some events which have the following probability.**
   - **a.** $\frac{1}{2}$
   - **b.** 1
   - **c.** 0

3. **You pick a shape at random from the set of shapes on the right:**

   Write down as many possible results that you can think of which have a probability of $\frac{1}{2}$. One example has been suggested for you.
   - **a.** I pick a circle.
   - **b.**



Check Up Page

Answer each question as a fraction. Remember to simplify your fractions.

1. **A bag contains 12 bottle tops, of which 6 are red, 4 are blue and 2 are green. If you pick one bottle top out of the bag without looking, what is the probability that it will be:**
   - **a.** red?
   - **b.** green?
   - **c.** blue?
   - **d.** either green or blue?
   - **e.** either red or green?
   - **f.** either blue or red?

2. **You are planning to toss two coins 28 times and record your results. Estimate your results by completing the table below. Write the probability as a fraction.**

Possible Combinations	Number of Throws	Probability
Two heads		
		$\frac{1}{2}$
	7	

3. **You have a box of 12 coloured pencils containing the following colours.**

Sky blue	Leaf green	Sunshine yellow
Sea blue	Dark green	Yellow ochre
Forest green	Purple	Rose red
Lime green	Lemon yellow	Scarlet red

Calculate the probability of picking the following colours from the box if you pick one pencil at random. Write your answer as a fraction.

- **a.** a purple
- **b.** a red
- **c.** either a green or a blue
- **d.** a green
- **e.** a yellow
- **f.** either a yellow or a blue

Now answer the following questions:

- **g.** Which colour are you most likely to pick?
- **h.** Which colour has the lowest probability?
- **i.** What is the probability of picking an orange pencil?
- **j.** What is the probability of picking a pencil that is either red, blue, green, yellow or purple?

4. In a mixed crate of soft drinks there are 12 Cokes, 4 Sprites, 6 Vimtos and 2 Fantas. The drinks are shared out at random between 24 children.

a. Which drink has a $\frac{1}{2}$ probability that a child will be given it?

b. Think of two other ways in which you might describe this probability.

c. What is the probability that a child will get each of the other drinks?

Unit 18

1b Designing your Own Clock

A clock is not the only way to measure time.

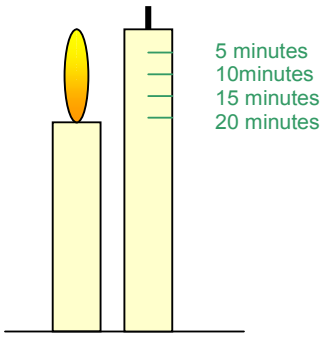
Use the materials you have been given to make an apparatus for measuring time.

Choose one of the sets of instructions below to help you.

Activity A: How To Make a Candle Clock

You Will Need:

2 new candles
matches
a clock
pins or a sharp knife
a ruler



What to Do:

1. Place the two candles close together, side by side on the desk. You can fix them to the desk by melting the ends a little.
2. Light one candle.
3. As it burns down, use a real clock to time how long it takes.
4. After every 5 minutes, make a mark on the second candle with your pins or a sharp knife, to show how much of the candle has burned in 5 minutes.
5. Continue for at least 20 minutes.
6. Once you have an idea of the amount of candle that burns in 5 minutes you can measure and mark the rest of your candle with 5-minute intervals.

Activity B: How to Make a Water Clock

You Will Need:

2 plastic bottles (the same size);
a nail or other sharp object;
a marker pen;
scissors or a knife;
some water;
a clock with a second hand.

What to Do:

1. Carefully cut the top off one plastic bottle and cut the bottom off the other one as shown.

2. Use a nail or sharp object to punch a hole in the lid of the bottle.

3. Place the top half of the bottle, with the lid on upside down inside the bottom half of the bottle. This makes a funnel as shown.

4. Pour water into the funnel and watch as it trickles through the hole in the lid. Time how long this takes using a real clock. Mark the side of the bottle to show where the water level reached in 10 seconds, 20 seconds 30 seconds and so on.
5. Empty out the clock and repeat the activity to check that your markings are accurate.

Activity C: How to Make a Sand Clock

You Will Need:

2 plastic bottles (the same size);
some fine sand;
a clock with a second hand;
a nail or other sharp object;
a marker pen;
sticky tape.

What to Do:

1. Make a small hole in the lid of one of the bottles with a nail. (Figure 1)
2. Fill one bottle with fine sand. Put the lid with a hole in it on this bottle. (Figure 2)
3. Place the second bottle (without the lid) on top of the other bottle so that the sand can flow from one to another. Hold them in place carefully.
4. Turn the two bottles upside down together, making sure not to spill any sand.

Figure 1

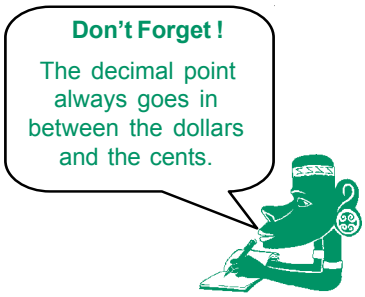
Figure 2

Figure 3

6. Use your clock to measure how long it takes for all the sand to trickle through the hole in the lid. Remove or add some sand so that it takes exactly three minutes for all of the sand to go through.
7. When you are sure that the timing is correct, tape the two bottles together. (Figure 3).
8. You can use this clock to measure exactly 3 minutes.

Unit 19

1b Using Your Money Skills



Activity A

1. **Find the** total cost **of each of the following shopping lists. Write the total in your exercise book.**

List a	List b	List c	List d
Pencil $1.20	Firewood $5.00	Milk $12.00	Mangoes $3.00
Exercise book $2.50	Fish $3.75	Sugar $3.25	Bananas $4.50
Rubber 40c	Leaf 20c	Lolly 50c	Cabbage $5.00

2. **Calculate the** change from $10 **for each of the following:**
   - **a.** Three mangoes costing $2 each
   - **b.** A book costing $6.50
   - **c.** Two lollies costing 50c and $1.50
   - **d.** A bundle of firewood costing $8.50
   - **e.** Two heaps of yam costing $5.00 each

3. **In your exercise book write down which notes and coins you would need to make up the following amounts. The first example has been done for you.**

   a. $6.50 One $5 note, one $1 coin and one 50c coin.

   b. $2.25 **c.** $8.10 **d.** $7.60 **e.** $4.85

Activity B

1. **Look carefully at the menu and calculate the** total cost **of the following meals: Write your answers in your exercise book:**

   a. Pork with rice and a soft drink.

   b. Chicken and chips, bush lime and a piece of cake.

   c. Beef with kumara and rice.

   d. Chicken, rice, and ice cream and a soft drink.

   e. Chicken and rice with water and an ice cream

Menu	
Pork	$ 10.00
Beef	$ 9.50
Chicken	$ 7.25
Chips	$ 4.20
Kumara	$ 2.20
Rice	$ 2.00
Water	Free
Soft Drink	$ 6.30
Bush Lime	$ 5.25
Ice Cream	$ 3.25
Cake	$ 2.40

Computation of Money

Remember!
There is often more than one way to make up an amount of money.

2. Calculate how much change **you would have from $20 if you paid for each of the above meals.**

3. Copy and complete the table to show which coins and notes you would use to make up the following amounts. The first one has been done for you.

	$20 note	$10 note	$5 note	$2 note	$1 coin	50c coin	20c coin	10c coin	5c coin
a. $25.40	1		1				2		
b. $12.75									
c. $44.20									
d. $22.50									
e. $35.10									

Activity C

1. Using the price list in the box, calculate the total cost **of each of the following.**

Write your answers in your exercise book.

a. A mallet and two kilos of size 1 nails.

b. A metal ruler, a brace and a small Phillips screwdriver.

c. A measuring tape, a claw hammer and some wood glue.

d. A bevel chisel, a medium Phillips screw driver, a kilo of size 2 nails and a metal ruler.

e. Two kilos of size 6 nails, a kilo of size 3 nails and two small Phillips screwdrivers.

TOOLS FOR SALE

Claw Hammer		$ 23.50
Mallett		$ 17.95
Metal Ruler		$ 7.60
Measuring Tape		$ 12.40
Bevel Chisel		$ 18.75
Phillips Screwdriver	Large	$ 14.20
	Medium	$ 12.20
	Small	$ 8.20
Brace		$ 31.10
Nails (per kilo)	size 1	$ 9.00
	size 2	$ 12.50
	size 3	$ 15.50
	size 6	$ 18.60
Crosscut Saw		$ 45.65
Coping Saw		$ 31.40
Wood Glue		$ 11.70

Unit 19

2. Calculate the correct amount of change for each of the following and write the answer in your exercise book:

a. Change from $50 if you buy a cross cut saw.

b. Change from $60 if you buy a coping saw and some wood glue.

c. Change from $100 if you buy a brace, a metal ruler and a measuring tape.

d. Change from $50 if you buy 4 kilos of size 2 nails.

e. Change from $100 if you buy a coping saw and a claw hammer.

1e Money Problems

Activity A

Look at the Solomon Taiyo price list on the right and use the information to answer the following questions. Write out your working, as well as your answers in your exercise book.

1. Find the **difference** in price between the most expensive case of Taiyo and the cheapest case of Taiyo.

2. How much **change** would you get from $50 after buying five tins of Solomon Blue and five tins of Special?

3. What is the cost of **each tin** of Solomon Blue when you buy a whole case of 24 tins?

4. John has $20 to spend. How many tins of Chilli Taiyo can he buy? Will he have any money left over?

Solomon Taiyo – Price List

Cases (24 tins)	
Solomon Blue	$ 84.00
Barava	$108.00
Special	$120.00
Chilli Taiyo	$153.60

Tins	
Solomon Blue	$ 3.60
Barava	$ 4.70
Special	$ 5.20
Chilli Taiyo	$ 6.60

5. Barbara needs 50 tins of Chilli Taiyo. How many cases and how many tins will she need and what will be the total price?

6. Sara spent $360 on Special Taiyo. How many cases did she buy?

Activity B

1. Look at the Solomon Taiyo price list and use the information to answer the following questions. In your exercise book, write down how you worked out the answer as well as the answer itself.

a. There are 50 people coming to your party. You estimate that one tin of Taiyo will serve three people. How many tins will you need? You have a maximum of $100 to spend on Taiyo. Which type will you choose and why?

b. How much money can you save by buying a whole case of Chilli Taiyo instead of buying 24 tins separately?

c. A local store orders nine cases of Solomon Blue, five cases of Barava and three cases of Chilli Taiyo every week. They pay Solomon Taiyo once every four weeks. What will the total bill be for four weeks?

2. Look at price list for Solomon Soft Drinks in the box. Drinks are sold in bottles of different sizes. Use the information to answer the following questions in your exercise book. Show your working.

a. Work out the cost **per litre** for each size of bottle. Which size bottle gives the best value for money?

b. There are 24 people at a party. If each person drinks a 250 mL bottle of soft drinks what will the total cost of the drinks be? How could you provide the same amount of drink at a cheaper price?

Activity C

Read the following problems carefully. Write down how you work out the answer as well as the answer itself in your exercise book.

1. Ana saves one quarter of her salary every fortnight. At the end of the year she has saved a total of $2,505.75. How much is her fortnightly salary?

2. Petrol costs $7.50 a litre. To travel to Honiara and back, the 40hp engine uses 166 litres, but the 25hp engine only uses 138 litres.

a. What is the difference in cost for the journey between the two engines.

b. If 8 people can travel in the canoe with the 40hp engine, but only 6 people can travel in the 25hp canoe, which canoe is cheaper, per person, for the return trip to Honiara?

3. Allan, Peter and Ben got a job to build a house. It took six weeks to complete. Allan worked Monday to Friday, Ben worked only on Monday and Tuesday and Peter worked on Wednesday, Thursday and Friday each week.

When the house was completed the men received a total of $2,400 in salary.

a. How should this amount be shared fairly between the three men?

b. How much would each man receive?

c. What is the daily salary per person?

4. There are 23 children and 4 adults going on a school outing to the museum. The bus fare is $2.00 each way for adults and $1.50 for children.

a. What will the total cost of the bus fares be?

If there is only $70 available for bus fares some people will have to walk back to school.

b. What is the smallest number of people who will have to walk? Both the children on the bus and those who walk must have at least one adult with them.

1g More Money Problems

Problem Solving Tip!
Read the question carefully.
Make sure you know what is being asked for.

Activity A

Discuss each problem below with your partner. Decide how you will solve them and write your method and your answer in your exercise book.

1. Washing powder comes in three sizes, 500 g for $3.90, 1 kg for $6.20 and 2 kg for $11.00. Which is the best value for money?

2. If a hotel uses 40 kilos of washing powder every month, how much would they **save** by buying the 2 kg packs instead of 1 kg packs?

3. If the store has a special offer on washing powder **"buy one get one free"**. How many 500 g bags could you buy for $40? Would you have any change left over?

4. Which is cheaper, twelve 500 g packets of washing powder or five 2 kg packets? Which contains more washing powder?

5. The football team use 500 g of washing powder to wash their uniforms after every match. They play every Saturday. What is the least amount of money they could spend on washing powder every year?

Activity B

Study the ITA price list. Discuss each problem below with your partner. Decide how you will solve it and write your method and your answer in your exercise book.

ITA Price List

Garden Tools	Cookware
 Spade $85.00 Hoe $70.00 Fork $93.50 Shovel $69.50	 3 piece Pan set $74.00 Frying pan $51.95 Utensils set $38.40 Serving dish $25.50
Asian Paints	**Louvre Windows**
 4 litres $220.00 8 litres $410.00 Undercoat (4L) $175.00 Turpentine (500mL) $39.50 paintbrushes $15, $20 and $25	 **prices per pair** 4 blade $110.00 6 blade $150.00 7 blade $165.00 8 blade $174.00 Louvre Glass $6.50 each

1. ITA are having a Christmas sale with **20% off** all their garden tools. A customer spent a total of $130.40 in the sale. Which tools did she buy?
2. All cookware is **reduced** by $10.
   Which three items could you buy for less than $100 in total? How much change would you receive?
3. Francis needs 12 blade louvre frames for his windows, but they are out of stock.
   Find two ways in which he can complete his windows using the available stock. What is the difference in cost per window?
4. If Wasi needs 20 litres of paint to paint his house, what is the cheapest way for him to buy this? What will be average cost per litre be?
5. If ITA discounts their paints by 10% in the Christmas Sale, how much could Wasi save?

Unit 19

Activity C

Problem Solving Tip

Plan your strategy carefully.
Drawing a diagram can sometimes be helpful.

Study the ITA price list in Activity B. Discuss each problem below with your partner. Decide how you will solve it and write your method and your answer in your exercise book.

1. In his new house, Wasi has eight windows. Four need 15 blade louvres, two need 12 blade louvres and two need 4 blade louvres.

   Work out the **cheapest** way for him to purchase **all** the louvre blades he needs. What will the total cost be?

2. If ITA have a '**buy two get one free'** sale on louvre glass, how much will Wasi have to spend to buy enough glass for all of his windows?

3. A rural training centre requires 12 spades, 14 hoes and 7 forks. The manager agrees to give them a 25% discount on their total order, what will they have to pay? How much will they save in total?

4. LKP hardware also sells louvre blades at the prices shown on the right. Compare LKP prices and ITA prices and answer the following questions.

   a. Which store has the cheapest combination of frames for a 12-blade window and a 15-blade window?

   b. What is the average price per blade in each store?

   c. Which store has the best value louvre glass. (Remember that ITA have a special offer, buy two get one free)

Problem Solving Tip

If your first strategy does not work - think of another strategy.

LKP HARDWARE	
LKP Louvre Frames	
prices per pair	
4 blade $95.00	10 blade $234.00
5 blade $114.00	Louvre Glass
6 blade $ $160.00	10 for $50

Check Up Page

1. **At the school fundraising, the cake stall raised $420.60; the sponsored walk raised $136.25; the local food stall raised $291.50 and the football competition raised $1,036.20. What was the total amount of money raised by the school?**

2. **Petrol costs $8.20 per litre or $1,560 for a 200 litre drum.**

   a. If you buy 20 litres of petrol, how much change would you get from $200?

   b. Peter bought 11 litres. He paid with $100 but the outlet did not have any change to give him so they agreed to keep the left over money for his next visit. The following week he bought 4 litres. How much did he have to pay?

   c. What is the average cost per litre when you buy petrol by the drum?

   d. For a trip around the Weather Coast, a total of 526 litres of petrol is needed. What is the cheapest price for the journey?

3. **The general store has two different types of cloth for sale. The first is 1 metre wide and costs $7.50 per metre. The second is 1.5 metres wide and costs $10.75 per metre.**

   a. Which is better value for money?

   b. If you bought 15 metres of each cloth how much change would you receive from $300?

   c. A dance group needs 18 square metres of cloth to make their costumes. What is the difference in price between the two types of cloth?

   d. Joe spent a total of $154.50 on cloth. She bought twice the length of 1m wide cloth as she did 1.5 m wide cloth. How much of each did she buy?

4. **Yee Kim's Store is having a Christmas Sale. All prices are reduced by 25%.**

   a. What will the total bill be for the following goods, after the discount: a kerosene lamp at $28.00, a broom at $13.00 and two plastic containers at $21.50 each?

   b. Phillip bought three towels in the sale and paid a total of $101.25. What was the price per towel before the 25% reduction?

   c. Joann had a reduction of $18.75 on the total cost of her shopping. What amount would she have paid without the discount?

5. **The table shows how much the Ramo family spent on bus fares in a week. Study it carefully and answer the following questions. Round your answers to the nearest 5c.**

	M	Tu	W	Th	F	Sa	Su
Mr. R	$4	$8	$8	$4	$6	$4	-
Mrs. R	$4	-	-	$4	-	$8	$4
Joseph	$3	$3	$3	$3	$6	-	$3
Stella	$3	$3	$3	$3	$3	$6	$3
Ben	-	-	-	$3	-	$6	$3

a. Who had the highest and lowest average spending on bus fares in the week? What was their daily average fare?

b. What was the average daily cost of bus fares for the whole family?

c. During the school holidays Joseph and Stella each save $3 a day because they do not pay their bus fare to go to school. Calculate the family's weekly spending on bus fares in the holiday.

d. Calculate how much the family would spend on bus fares in a year. (Remember that there are 40 weeks of school in a year.)

Unit 20

1a Revising Co-ordinates

Activity A

Look at this grid. It contains every letter except Z.

a is at (3,1), **b** is at (2,2) and so on.
The code for the word **team** is:

(3,5) (4,1) (3,1) (5,5)
t **e** **a** **m**

5	**v**	**h**	**t**	**i**	**m**
4	**r**	**u**	**g**	**j**	**k**
3	**c**	**q**	**w**	**i**	**x**
2	**s**	**b**	**o**	**p**	**n**
1	**y**	**d**	**a**	**e**	**f**
	1	2	3	4	5

1. Decode this message:

(3,5) (2,5) (4,1) **(2,2) (4,1) (1,2) (3,5)**

(4,2) (4,3) (3,1) (1,1) (4,1) (1,4)

(2,4) (1,2) (2,4) (3,1) (4,3) (4,3) (1,1) **(3,3) (4,5) (5,2) (1,2)**

2. Send a message to your friend using this code.

Remember!
A pair of numbers or letters which show the position of a point are called co-ordinates. They are usually shown in brackets.

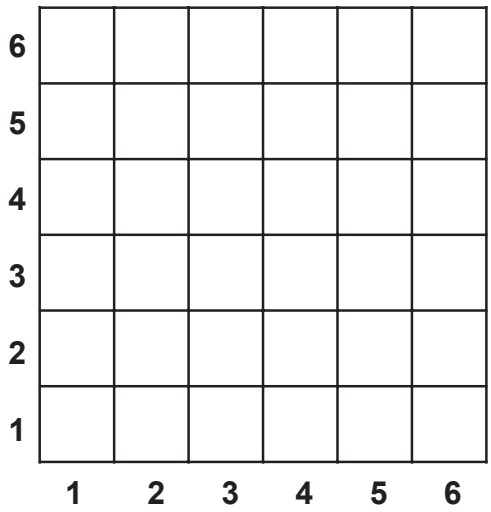
Activity B

Copy this grid into your exercise book.

a. Find these squares. Colour them all the same colour or shade them all using the same pattern.
(1,6) (1,4) (2,5) (2,1) (3,3)
(4,3) (5,5) (5,1) (6,6) (6,4)

b. Now find these squares. Colour them all in with a different colour or use a different pattern to shade them.
(3,6) (5,3) (2,4) (1,2)
(5,4) (2,3) (4,6) (6,2)

c. Draw the line of symmetry of the pattern.



Unit 20

1b Reading and Plotting Co-ordinates

Activity A

1. Look at this aerial view of a fishing fleet. What are the co-ordinates of

a. Warrior

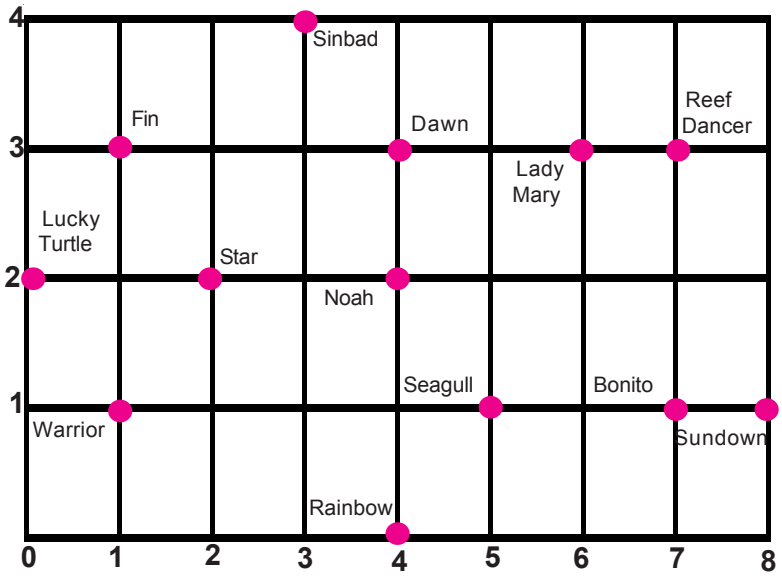
b. Lady Mary

c. Fin

d. Reef Dancer

e. Rainbow

f. Seagull



2. Which boats have co-ordinates

a. (0,2) **b.** (2,2) **c.** (8,1) **d.** (7,1) **e.** (4,2) **f.** (4,3)

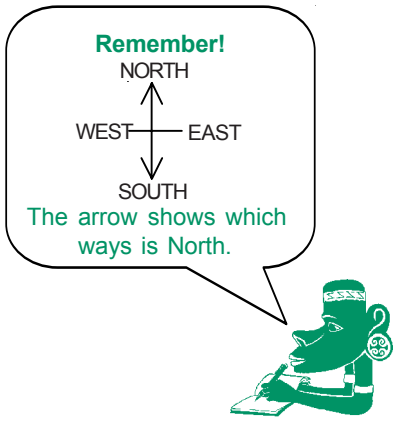
3. The grid lines are 1 kilometre apart. What is the distance between

a. Warrior and Seagull?

b. Dawn and Rainbow?

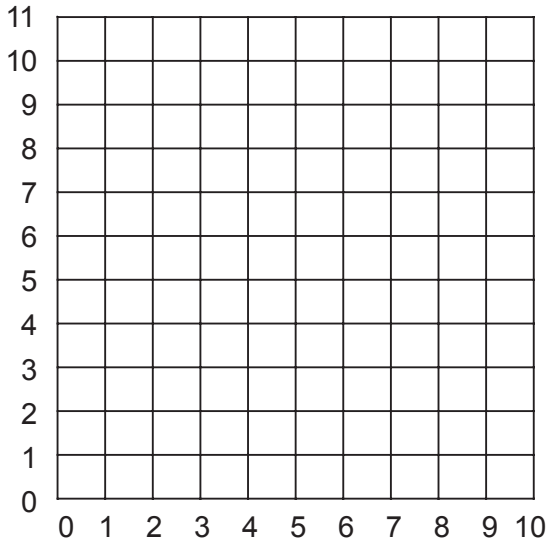
4. How far West of Reef Dancer is Fin?

5. Which boat is 2 kilometres South of Noah?



Activity B

You will need some centimetre squared paper or draw out a centimetre squared grid 11 cm x 10 cm. Your grid should look like this.



1. **Draw and label outline plans of two rectangular gardens.**

   The co-ordinates of their corners are:

   a. Fruit garden (0,0) (7,0) (7,7) (0,7)

   b. Flower garden (7,0) (10,0) (10,11) (7,11)

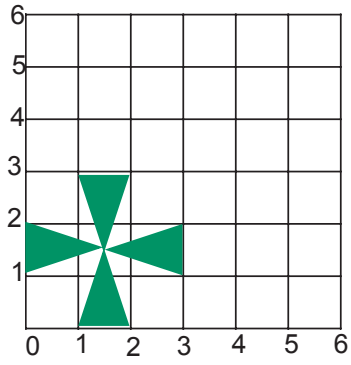
   c. The remaining grid is a vegetable garden. Write the co-ordinates of its four corners.

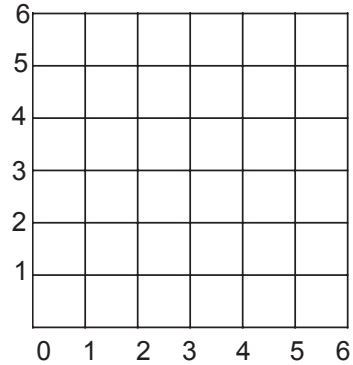
2. **On your grid, 1 centimetre stands for 1 metre.**

   Find the perimeter in metres and the area in square metres for:

   a. the fruit garden **b.** the flower garden **c.** the vegetable garden

Activity C





1. Make two grids like the ones above. Use squared paper or a pencil and ruler to draw them out.

   Copy the shape onto one grid and colour it or shade it.

   Double the co-ordinates of each point of the design to get another set of co-ordinates, for example: (1,0) becomes (2,0), (3,2) becomes (6,4), and so on.

   On the other grid, mark and join up these new co-ordinates to make another similar design.

2. **a.** Do the shapes look alike? Explain in your own words why?

   b. How do the lengths of the sides of the large shape compare with those on the small shape?

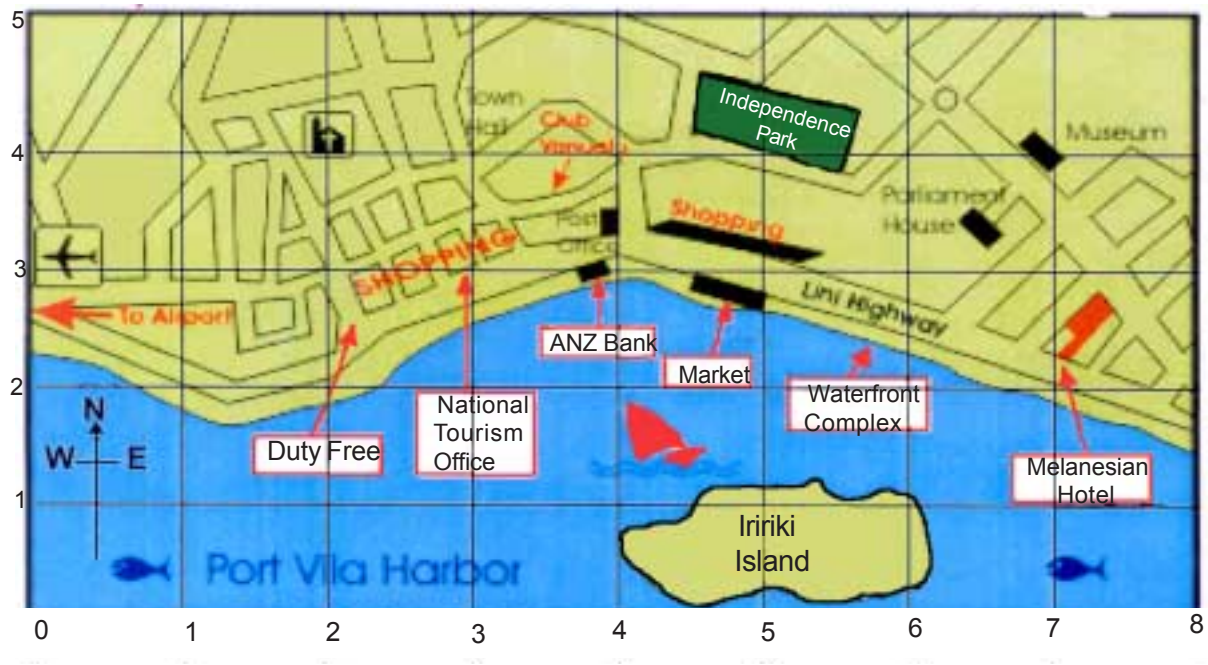
   c. What are the coordinates of the middle of the second design?

Unit 20

1C Reading Maps

Activity A

Look at the plan of part of Port Vila town in Vanuatu. Answer the questions in your exercise book.



1. Find these points using the co-ordinates and write down what is there.

a. (7,4) **b.** (4,3) **c.** (5,1)

2. Write the co-ordinates for

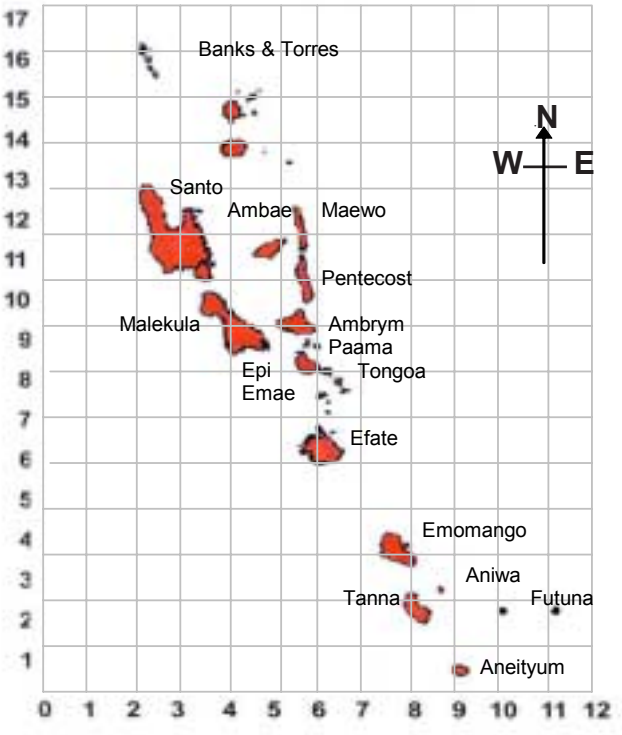
a. National Tourism Office **b.** Cathedral **c.** Town Hall

3. If you walk from (5,3) to (7,2) what is the name of the road you walk along?

4. What is the first thing you come to North of (5,2)?

5. What is the first building you find South of (4,4)?

Activity B
Here is a map of Vanuatu.
Answer the questions in your exercise book.



Remember!
Where two grid lines cross is the point of intersection.

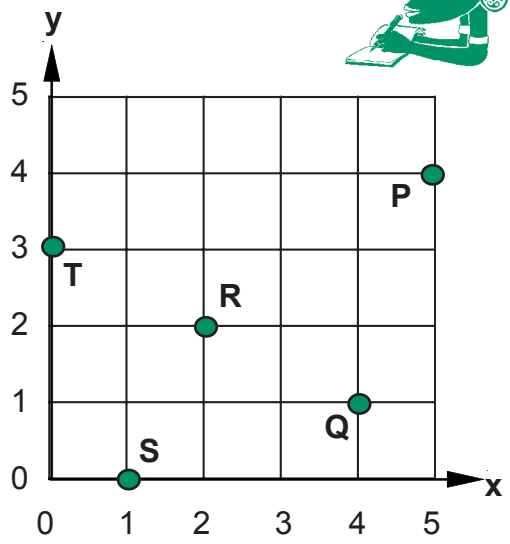
1. Which island is found at (8,2)?
2. Name the group of islands East of (2,16).
3. Which island is at (3,11)?
4. Which island is just West of (6,10)?
5. Give the location of Efate using co-ordinates.
6. What is the location of Ambae?
7. Write the co-ordinates for Futuna.
8. Using North and South write two sets of co-ordinates for Emae.

2a Mapping Co-ordinates

Reminder
The x axis is horizontal. The y axis is vertical

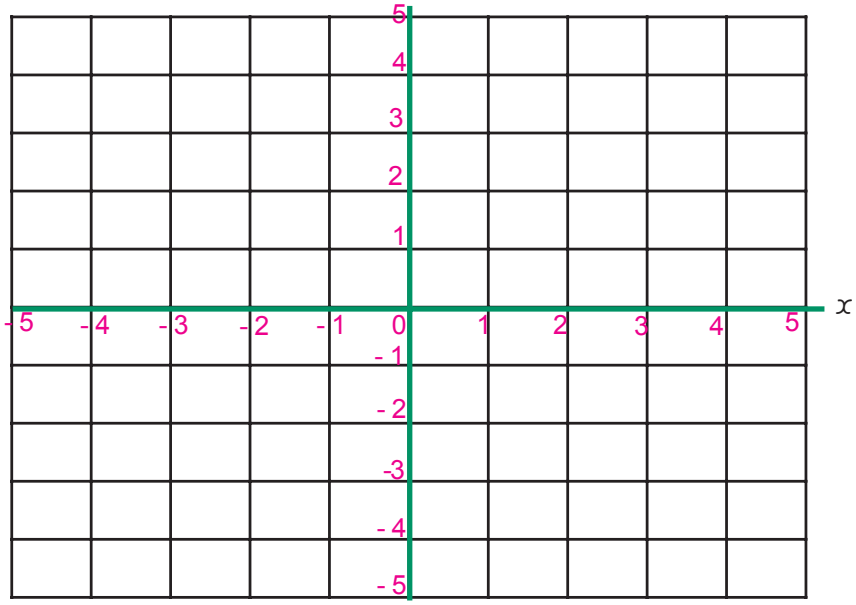
Activity A

1. Write down the co-ordinates of the points P,Q,R,S and T.
2. Make a copy of the grid, then plot the points **A** (1,1), **B** (1,5) and **C**.(4,5).
3. The three points you have plotted are the vertices of a rectangle. Plot point D to complete the rectangle.
4. Write down the co-ordinates for D.



Unit 20

Activity B



Remember!

The first co-ordinate is the x co-ordinate.
The second co-ordinate in the y co-ordinate

1. Make a copy of the grid. Plot A(-4,3), B(-2,-2), C (0,1), D(2,-2), and E(4,3).
2. Join the points in the order given. What letter have you drawn?

Reminder

Where the 2 axes meet or intersect is called the origin.

Activity C

1. Make a copy of the grid in Activity B question 1. Then plot the following points W(3,3), X(3,3) and Y(-3,3).
2. The points you have drawn form three vertices of a square WXYZ. Plot the point Z and draw the square.
3. What are the co-ordinates of the point Z?
4. Draw the diagonals of the square.
   a. What are the co-ordinates of the point of intersection of the diagonals?
   b. Give another name for the point at which the diagonals cross.

2b

Activity A

1 a. Draw two axes on squared paper. Number each axis up to 10.

b. Mark these points and join them in order with straight lines.

(4,6) (4,2) (5,2) (5,3) (6,3) (6,4) (7,4) (6,5) (6,6)

Join the last point to the first one.
Mark a dot for an eye at (5,5).

Activity B

For each of these activities a, b, c, d and e you need to draw a 20 x 20 grid.

1a. Mark these points and join them in order.

(7,6) (7,2) (8,2) (8,3) (9,3) (9,4) (10,4) (9,5) (9,6)

Join the last point to the first. Mark an eye.

Compare the result with what you drew for question 1.
Talk about what has happened with a partner.

b. Now add 6 to the second co-ordinate. This is the y **co-ordinate**.
Your co-ordinates will now look like this.

(7,12) (7,8) (8,8) (8,9) (9,9) (9,10) (10,10) (9,11) (9,12)

Plot this and compare it to 1a. Talk about it with your partner. Is it the same size? Is it in the same place on the grid?

c. What happens when you subtract 5 from the first or x co-ordinate in 1a? (2,6) (2,2) (3,2)

Plot this on a grid and discus your result with a partner.

d. Plot and draw the shape again. This time add 4 to both the y and x co-ordinates in 1a. (11,10) (11,6) (12,6)

Discuss your result.

e. Try adding different numbers. What happens?

f. Try subtracting different numbers. What do you think will happen? Try it and see. Are the results as you expected?

Unit 20

Activity C

Again you need to draw out the same grid with the same axes. Draw one for Question 1a, one for 1b and one for question 2.

1. What happens when you:

a. multiply the x co-ordinate by 2?

(14,6) (14,2) (16,2) ….

b. multiply the y co-ordinate by 3?

(7,18) (7,6) (8,6) ……

2. What happens when you reverse the co-ordinates of each point?

(6,7) (2,7) (2,8)…….

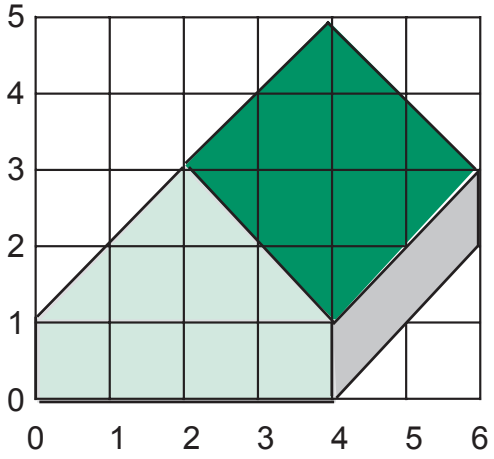
Check Up Page

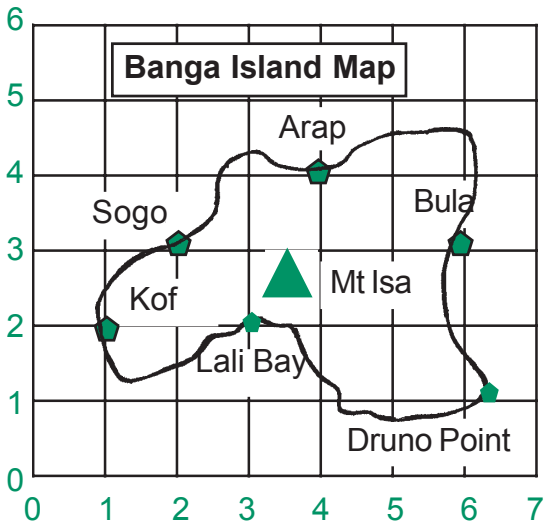
1. Write the co-ordinates of each corner of

a. the square

b. the pentagon

c. the parallelogram





2. Look at the map of Banga Island. Which village is found at each of the following locations?

a. (3,2)

b. (2,3)

c. (6,3)

d. (4,4)

3. What are the co-ordinates for the village of Kof?

4. Give the nearest co-ordinates for Druno Point.

5. Give the nearest co-ordinates for Mt. Isa.

6. Copy this grid into your exercise book.

a. Label the x axis.

b. Label the y axis.

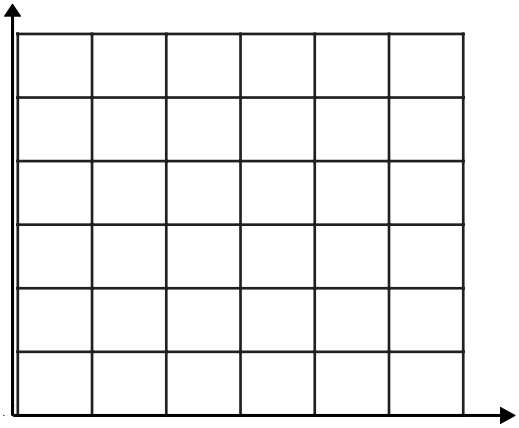
c. Mark the origin with **0.**

d. Mark the scale 1 to 6 on each axis.

e. Mark each of these co-ordinates with an **X** on your graph.

(1,0) (1,4) (2,5) (3,4)

(3,2) (6,2) (6,0)



f. Join all the points together in the order they are written. Use straight lines to join the points.

Notes

Notes

Notes

Nguzu Nguzu Mathematics

Standard Five