MATHLETICS

Percentages

Student Book - Series I-1

Mathletics Instant Workbooks

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Percentages

Student Book - Series I

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Author of The Topics and Topic Tests: AS Kalra

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Topic 1: Changing percentages to fractions

Question 1 Express the following percentages as fractions in simplest form.

a 50% = _____ **b** 40% = _____ **c** 30% = _____

d 10% = _____ **e** 20% = _____ **f** 60% = _____

g 70% = _____ **h** 80% = _____ **i** 25% = _____

j 75% = _____ **k** 85% = _____ **l** 100% = _____

m 17% = _____ **n** 90% = _____ **o** 95% = _____

p 49% = _____ **q** 19% = _____ **r** 23% = _____

Question 2 Express the following percentages as fractions in simplest form.

a 2.5% = _____ **b** 8.2% = _____ **c** 4.5% = _____

d 36.5% = _____ **e** 3.5% = _____ **f** 27.5% = _____

g 84.5% = _____ **h** 40.2% = _____ **i** 62.5% = _____

j 0.5% = _____ **k** 22.5% = _____ **l** 0.8% = _____

m 10.5% = _____ **n** 8.5% = _____ **o** 18.3% = _____

p 9.25% = _____ **q** 40.5% = _____ **r** 65.5% = _____

Question 3 Change the following percentages to fractions in simplest form.

a $\frac{1}{2}\%$ = _____ **b** $\frac{1}{3}\%$ = _____ **c** $\frac{1}{4}\%$ = _____

d $\frac{1}{8}\%$ = _____ **e** $22\frac{1}{2}\%$ = _____ **f** $52\frac{1}{2}\%$ = _____

g $5\frac{1}{2}\%$ = _____ **h** $33\frac{1}{3}\%$ = _____ **i** $66\frac{2}{3}\%$ = _____

j $8\frac{1}{2}\%$ = _____ **k** $5\frac{1}{2}\%$ = _____ **l** $12\frac{1}{2}\%$ = _____

m $10\frac{1}{2}\%$ = _____ **n** $25\frac{1}{2}\%$ = _____ **o** $35\frac{1}{2}\%$ = _____

p $85\frac{1}{2}\%$ = _____ **q** $15\frac{1}{2}\%$ = _____ **r** $20\frac{1}{4}\%$ = _____

Question 4 Convert the following to fractions in simplest form.

a 38% = _____ **b** 56% = _____ **c** 62% = _____

d $25\frac{1}{3}\%$ = _____ **e** $12\frac{1}{4}\%$ = _____ **f** $3\frac{1}{4}\%$ = _____

g 9.5% = _____ **h** 8.6% = _____ **i** 4.8% = _____

j 3.7% = _____ **k** 6.9% = _____ **l** 5.2% = _____

m 42% = _____ **n** 55% = _____ **o** 72% = _____

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Topic 2: Changing fractions to percentages

QUESTION **1** Express the following fractions as percentages.

a $\frac{30}{100}$ = _____ **b** $\frac{50}{100}$ = _____ **c** $\frac{80}{100}$ = _____

d $\frac{40}{100}$ = _____ **e** $\frac{43}{100}$ = _____ **f** $\frac{84}{100}$ = _____

g $\frac{62}{100}$ = _____ **h** $\frac{39}{100}$ = _____ **i** $\frac{56}{100}$ = _____

j $\frac{25}{100}$ = _____ **k** $\frac{16}{100}$ = _____ **l** $\frac{72}{100}$ = _____

QUESTION **2** Express the following fractions as percentages.

a $\frac{5}{10}$ = _____ **b** $\frac{16}{10}$ = _____ **c** $\frac{7}{10}$ = _____

d $\frac{4}{5}$ = _____ **e** $\frac{6}{20}$ = _____ **f** $\frac{9}{50}$ = _____

g $\frac{9}{25}$ = _____ **h** $\frac{7}{25}$ = _____ **i** $\frac{7}{50}$ = _____

QUESTION **3** Change the following fractions to percentages.

a $\frac{3}{4}$ = _____ **b** $\frac{5}{80}$ = _____ **c** $\frac{13}{20}$ = _____

d $\frac{7}{60}$ = _____ **e** $\frac{2}{8}$ = _____ **f** $\frac{7}{40}$ = _____

g $\frac{9}{60}$ = _____ **h** $\frac{3}{5}$ = _____ **i** $\frac{14}{80}$ = _____

QUESTION **4** Express the following as percentages.

a $\frac{3}{8}$ = _____ **b** $\frac{5}{9}$ = _____ **c** $\frac{5}{8}$ = _____

d $\frac{7}{11}$ = _____ **e** $\frac{5}{12}$ = _____ **f** $\frac{1}{3}$ = _____

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Topic 3: Changing percentages to decimals

Question 1 Express the following percentages as decimals.

a 10% = _____ **b** 80% = _____ **c** 30% = _____

d 50% = _____ **e** 40% = _____ **f** 60% = _____

g 20% = _____ **h** 70% = _____ **i** 90% = _____

j 100% = _____ **k** 15% = _____ **l** 65% = _____

Question 2 Change the following percentages to decimals.

a 16% = _____ **b** 19% = _____ **c** 39% = _____

d 12% = _____ **e** 61% = _____ **f** 56% = _____

g 14% = _____ **h** 73% = _____ **i** 67% = _____

j 98% = _____ **k** 81% = _____ **l** 78% = _____

m 62% = _____ **n** 43% = _____ **o** 49% = _____

Question 3 Convert the following percentages to decimals.

a 5% = _____ **b** 2% = _____ **c** 8% = _____

d 9% = _____ **e** 6% = _____ **f** 7% = _____

g 3% = _____ **h** 1% = _____ **i** 4% = _____

j 1.5% = _____ **k** 2.5% = _____ **l** 3.3% = _____

m 2.1% = _____ **n** 1.7% = _____ **o** 4.9% = _____

Question 4 Change the following percentages to decimals.

a 45.5% = _____ **b** 89.2% = _____ **c** 57.4% = _____

d 63.9% = _____ **e** 63.2% = _____ **f** 36.5% = _____

g 53.8% = _____ **h** 92.7% = _____ **i** 69.7% = _____

j 23.7% = _____ **k** 15.8% = _____ **l** 21.3% = _____

Question 5 Express the following percentages as decimals.

a $33\frac{1}{3}\%$ = _____ **b** $\frac{5}{6}\%$ = _____ **c** $\frac{3}{8}\%$ = _____

d $1\frac{1}{2}\%$ = _____ **e** $66\frac{2}{3}\%$ = _____ **f** $12\frac{1}{2}\%$ = _____

j $9\frac{1}{4}\%$ = _____ **k** $20\frac{3}{4}\%$ = _____ **l** $\frac{7}{9}\%$ = _____

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Topic 4: Changing decimals to percentages

QUESTION **1** Express the following decimals as percentages.

a 0.15 = _____ **b** 0.25 = _____ **c** 0.35 = _____

d 0.95 = _____ **e** 0.14 = _____ **f** 0.85 = _____

g 0.18 = _____ **h** 0.55 = _____ **i** 0.17 = _____

j 0.45 = _____ **k** 0.67 = _____ **l** 0.65 = _____

m 0.91 = _____ **n** 0.75 = _____ **o** 0.72 = _____

QUESTION **2** Express the following decimals as percentages.

a 0.80 = _____ **b** 0.60 = _____ **c** 0.1 = _____

d 0.50 = _____ **e** 0.90 = _____ **f** 0.2 = _____

g 0.70 = _____ **h** 0.4 = _____ **i** 0.3 = _____

j 0.01 = _____ **k** 0.02 = _____ **l** 0.05 = _____

m 0.04 = _____ **n** 0.06 = _____ **o** 0.03 = _____

QUESTION **3** Express the following decimals as percentages.

a 0.123 = _____ **b** 0.625 = _____ **c** 0.537 = _____

d 0.189 = _____ **e** 0.427 = _____ **f** 0.139 = _____

g 0.835 = _____ **h** 0.567 = _____ **i** 0.683 = _____

j 0.129 = _____ **k** 0.816 = _____ **l** 0.927 = _____

m 0.687 = _____ **n** 0.257 = _____ **o** 0.369 = _____

QUESTION **4** Express the following decimals as percentages.

a 0.001 = _____ **b** 0.910 = _____ **c** 0.006 = _____

d 0.007 = _____ **e** 0.002 = _____ **f** 0.009 = _____

g 0.810 = _____ **h** 0.037 = _____ **i** 0.021 = _____

j 0.004 = _____ **k** 0.005 = _____ **l** 0.003 = _____

m 0.057 = _____ **n** 0.089 = _____ **o** 0.065 = _____

QUESTION **5** Express the following decimals as percentages.

a 1.20 = _____ **b** 2.50 = _____ **c** 3.60 = _____

d 2.56 = _____ **e** 1.31 = _____ **f** 3.57 = _____

g 8.25 = _____ **h** 3.41 = _____ **i** 5.63 = _____

j 2.84 = _____ **k** 5.34 = _____ **l** 8.13 = _____

m 5.27 = _____ **n** 8.03 = _____ **o** 2.06 = _____

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Topic 5: Finding the percentage of quantity

QUESTION **1** Evaluate the following.

a 10% of 300 = _____ **b** 20% of 5000 = _____

c 30% of 900 = _____ **d** 40% of 630 = _____

e 50% of 580 = _____ **f** 75% of 840 = _____

g 25% of 370 = _____ **h** 35% of 144 = _____

i 5% of 210 = _____ **j** 60% of 225 = _____

k 70% of 890 = _____ **l** 100% of 79 = _____

m 45% of 125 = _____ **n** 80% of 830 = _____

o 85% of 369 = _____ **p** 65% of 1000 = _____

QUESTION **2** Work out the following.

a 1% of 48 = _____ **b** 8.5% of 104 = _____

c 2.5% of 36 = _____ **d** 3.4% of 230 = _____

e 6.9% of 83 = _____ **f** 45.6% of 456 = _____

g 4.3% of 55 = _____ **h** 72.5% of 935 = _____

i 62.5% of 890 = _____ **j** 36.5% of 830 = _____

k 12.5% of 88 = _____ **l** 87.5% of 120 = _____

m 37.5% of 120 = _____ **n** 92.25% of 560 = _____

o $33\frac{1}{3}$% of 180 = _____ **p** 6.5% of 720 = _____

QUESTION **3** Calculate the following.

a 17% of 500 = _____ **b** 64% of $350 = _____

c 9% of 67 = _____ **d** 18.5% of 366 days = _____

e $5\frac{1}{2}$% of 840 = _____ **f** 2.5% of $80 = _____

g 15% of $120 = _____ **h** 30% of 4 kg = _____

i 40% of $2 = _____ **j** 400% of 30 = _____

k 25% of 800 g = _____ **l** 25% of $812 = _____

m 5% of $1200 = _____ **n** 142% of $120 = _____

o 90% of 50 = _____ **p** 17% of 400 = _____

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Topic 6: Increasing or decreasing by a given percentage

QUESTION **1** Increase the following by the given percentage.

a \$45 by 30% = _____ **b** \$8000 by 15% = _____

c \$80 by 45% = _____ **d** \$3000 by 60% = _____

e \$350 by 20% = _____ **f** \$750 by 35% = _____

g 900 g by 40% = _____ **h** 50 minutes by 20% = _____

i 400 kg by 60% = _____ **j** 240 L by 50% = _____

k 36 h by 100% = _____ **l** 80 t by 75% = _____

m \$648 by 25% = _____ **n** \$320.80 by 16% = _____

o \$199.95 by 5% = _____ **p** \$149.90 by $12\frac{1}{2}$% = _____

q 80 ha by 20% = _____ **r** 600 cm by 70% = _____

QUESTION **2** Decrease the following by the given percentage.

a \$63 by 19% = _____ **b** \$84 by 32% = _____

c 4 m by 35% = _____ **d** 260 L by 24% = _____

e \$930 by 10% = _____ **f** \$6354 by 20% = _____

g \$134 by 25% = _____ **h** \$575 by 30% = _____

i \$928.50 by 15% = _____ **j** \$243.80 by 50% = _____

k 48 h by 25% = _____ **l** \$840 by 70% = _____

m \$365 by 15% = _____ **n** \$960 by 45% = _____

o \$96 by 40% = _____ **p** \$60.50 by 80% = _____

q \$940 by 28% = _____ **r** \$620 by 35% = _____

QUESTION **3**

a Bill bought a block of land for \$230 000. If the price of land rises by 80%, find the new value.

_____

b Nathan earns \$1500 a week. Calculate his new weekly wage if he receives a pay rise of 20%.

_____

c The price of a new car is \$30 000 and after 1 year it decreases by 20%. Find the new value of the car.

_____

d A shirt priced at \$130 was sold at a discount of 25%. Find the sales price. _____

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Topic 7: Expressing quantities as percentages

Question 1

a Express 20 as a percentage of 200. _____

b Express 12 as a percentage of 30. _____

c Express 36 as a percentage of 63. _____

d What percentage is 40 of 112? _____

e What percentage is 28 of 77? _____

Question 2 What percentage is:

a 20 of 80? _____ **b** 60 of 240? _____

c 14 of 35? _____ **d** 15 of 60? _____

e 28 of 56? _____ **f** 14 of 42? _____

g 19 of 152? _____ **h** 81 of 90? _____

i 110 of 440? _____ **j** 10 c of $2? _____

k 25 c of $3? _____ **l** 63 cm of 1 m? _____

m 16 h of 1 day? _____ **n** 225 mL of 3 L? _____

Question 3 In the following, what percentage is the first quantity of the second?

a 2 m, 16 m = _____ **b** 8 s, 48 s = _____

c 12 kg, 90 kg = _____ **d** 6 L, 300 L = _____

e 30 mL, 150 mL = _____ **f** 125 g, 500 g = _____

g 70 m, 210 m = _____ **h** 80 min, 320 min = _____

i 36 s, 2 min = _____ **j** 30 cm, 3 m = _____

k 18 h, 3 days = _____ **l** $2, 500 c = _____

m 240 g, 6 kg = _____ **n** 32 kg, 2 t = _____

o 300 cm, 3.6 m = _____ **p** 8 min, 2 h = _____

Question 4 What percentage is:

a 50 c of $6? _____ **b** $2.50 of $10? _____

c 28 min of 3 h? _____ **d** 750 mL of 6 L? _____

e 650 m of 4 km? _____ **f** $3.50 of $4? _____

g 70 c of $3.50? _____ **h** $5 of 150 c? _____

i 12 mm of 60 cm? _____ **j** $7.50 of $30? _____

k 45 cm of 81 cm? _____ **l** 15 s of 50 s? _____

m 600 g of 8 kg _____ **n** 65 min of $4\frac{1}{3}$ h? _____

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Topic 8: Unitary method and percentages

QUESTION 1

a If 50% of a number is 32, what is the number? _____

b Find the total cost if 60% of it is $90. _____

c If 18% of a number is 9, what is the number? _____

d If 150% of a number is 60, what is the number? _____

QUESTION 2 Use the unitary method to solve the following.

a 20% of a number is 32, what is the number? _____

b 10% of a number is 63, what is the number? _____

c 15% of a number is 360, find the number. _____

d 48% of a number is 336, find the number. _____

QUESTION 3 Find 100% of the number if a part of it is given.

a 40% is 80; 100% = _____ **b** 20% is 92; 100% = _____

c 25% is 120; 100% = _____ **d** 15% is 60; 100% = _____

e 50% is 70; 100% = _____ **f** 75% is 450; 100% = _____

g 5% is 83; 100% = _____ **h** 45% is 119; 100% = _____

i 2% is 94; 100% = _____ **j** 8% is 34; 100% = _____

k 16% is 46; 100% = _____ **l** $12\frac{1}{2}$% is 230; 100% = _____

QUESTION 4

a If $33\frac{1}{3}$% of a number is 9, find the number. _____

b John's income increased by 3%. If his income rose by $645, find his previous income. _____

c Alku receives a 15% increase in her weekly wage.
If the increase is $75, find her new weekly wage. _____

d In the first year, the price of a block of land increased by 20%.
If this increase amounted to $28 000, what is the price now? _____

e Hari spends 40% of his weekly income on rent.
If his rent is $220, find his income. _____

f When an amount is increased by 20% it becomes $65.
What was the original amount? _____

g The population of a small town decreases by 8% every year.
If this year's population is 4600, what was the population last year? _____

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Topic 9: Problem solving and percentages

1 The price of a stereo is $1200. The discount is 30%. What is the discount? _____

2 Out of 630 students, 80% swim. How many swim? _____

3 Out of 120 students, 65% went to the camp. How many went to the camp? _____

4 Clare obtained 90 out of 120 marks in a mathematics test.
What percentage was this? _____

5 Decrease $100 by 10% and then increase this result by 10%. _____

6 If 35% of a number is 70, find the number. _____

7 A blanket that cost a retailer $56.50 sells for $110.
What percentage profit is made? _____

8 A salesman sold goods worth $35 000. Find the commission he gained on the sale if the first $10 000 sales earns 7% and the amount sold above $10 000 earns 9%. _____

9 Find the simple interest on $2000 for 1 year at 9.5% per annum. _____

10 Find the simple interest on $3560 for 3 years at $8\frac{1}{4}$% p.a. _____

11 Find 55% of $1640 and add it to 45% of $150. _____

12 In an examination, 90% of a class of 30 students passed. How many students failed? _____

13 Michael bought a second-hand car for $8000 and spent $2300 repairing it. If he sold the car for $15 600, find:

a his gain as a percentage of the total cost price (including cost of repairs). _____

b his gain as a percentage of the selling price. _____

14 A tiler makes a mixture for a bathroom floor with 5 blue tiles and 4 grey tiles to each white tile. Express the composition of the floor as percentages. Also find the number of blue tiles used in a floor of 1690 tiles.

_____

15 What is the cost of a pair of shoes whose full price is marked at $299.50, if a discount of $15\frac{1}{4}$% is allowed?

_____

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Topic Test — PART A

Instructions This part consists of 12 multiple-choice questions
Each question is worth 1 mark
Fill in only ONE CIRCLE for each question
Calculators are NOT allowed

Time allowed: 15 minutes **Total marks = 12**

Marks

1 16 marks out of 64 is what as a percentage?
(A) 20% (B) 24% (C) 25% (D) 30% — 1

2 An item is bought for \$80 and sold for \$120. Find the percentage profit on the cost price.
(A) 40% (B) 30% (C) 60% (D) 50% — 1

3 18% of a number is 27. The number is
(A) 150 (B) 200 (C) 250 (D) 300 — 1

4 As a decimal $4\frac{1}{2}\%$, equals
(A) 0.42 (B) 0.45 (C) 0.042 (D) 0.045 — 1

5 Ted pays \$60 after receiving a discount of 20%. The normal price equals
(A) \$63 (B) \$72 (C) \$75 (D) \$80 — 1

6 0.3% equals
(A) $\frac{1}{3}$ (B) $\frac{3}{10}$ (C) $\frac{3}{100}$ (D) $\frac{3}{1000}$ — 1

7 At a roll call, there were 4 students absent and 21 present. What percentage of the roll class was absent?
(A) 16% (B) 19% (C) 25% (D) 84% — 1

8 A car was bought for \$6000 and sold at a profit of 30%. What was its selling price?
(A) \$1800 (B) \$4200 (C) \$6200 (D) \$7800 — 1

9 The price of a tyre is reduced from \$80 to \$72. What is the percentage discount?
(A) 8% (B) 10% (C) 11% (D) 90% — 1

10 What percentage is \$3 of \$20?
(A) 10% (B) 12% (C) 15% (D) 18% — 1

11 If 120 is 20% of a number, then the number is
(A) 24 (B) 96 (C) 480 (D) 600 — 1

12 $p\%$ of $\$q$ is
(A) $\$pq$ (B) $\$\left(\frac{p+q}{100}\right)$ (C) $\$100pq$ (D) $\$\left(\frac{pq}{100}\right)$ — 1

Total marks achieved for PART A 12

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Topic Test — PART B

Instructions This part consists of 15 questions
Each question is worth 1 mark
Write answers in the answers-only column

Time allowed: 20 minutes **Total marks = 15**

	Questions	Answers only	Marks
1	Find 37% of $300.		1
2	Increase 260 kg by 10% and then decrease the result by 10%.		1
3	Write $\frac{7}{12}$ as a percentage correct to two decimal places.		1
4	If 15% of an amount is $140, what is the total amount?		1
5	After 25% of a bill has been paid, $80 still remains to be paid. How much was the bill?		1
6	A concrete mixture contains one part cement, two parts sand and three parts gravel. What percentage of the mixture is sand?		1
7	Express 700% as a fraction.		1
8	Find the simple interest on $800 at 9% p.a. for 1 year.		1
9	Express 52 as a percentage of 416.		1
10	Find 100%, given that 40% is 98.		1
11	David pays 28% of his income in tax. If he pays $14 200 income tax, what is his income?		1
12	A pen is bought for $69.50 and sold for $89.50. What is the gain per cent?		1
13	Find 70% of $8640 and decrease this amount by 15%.		1
14	$4800 is invested in a fund giving 12% interest per year. How much interest is received for 5 years?		1
15	The price of a television set is reduced by 18% to $1722. What was the original price?		1

Total marks achieved for PART B 15

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MATHLETICS

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Student Book - Series I 2

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Author of The Topics and Topic Tests: AS Kalra

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Topic 1: Changing percentages to fractions and fractions to percentages

QUESTION 1 Change the following percentages to fractions in simplest form.

a 10% = _____ **b** 50% = _____ **c** 90% = _____

d 15% = _____ **e** 20% = _____ **f** 60% = _____

g 75% = _____ **h** 57% = _____ **i** 76% = _____

j 19% = _____ **k** 55% = _____ **l** 98% = _____

QUESTION 2 Convert the following percentages to fractions in simplest form.

a 1.5% = _____ **b** 1.6% = _____ **c** 11.4% = _____

d 9.4% = _____ **e** 2.5% = _____ **f** 5.6% = _____

g $\frac{7}{8}$% = _____ **h** $\frac{1}{10}$% = _____ **i** $\frac{1}{20}$% = _____

j $\frac{1}{6}$% = _____ **k** $\frac{9}{10}$% = _____ **l** $30\frac{1}{4}$% = _____

QUESTION 3 Express the following percentages as fractions in simplest form.

a 26% = _____ **b** $33\frac{1}{3}$% = _____ **c** $50\frac{1}{2}$% = _____

d $2\frac{1}{4}$% = _____ **e** $15\frac{3}{4}$% = _____ **f** 86% = _____

g $35\frac{1}{2}$% = _____ **h** 36% = _____ **i** $66\frac{2}{3}$% = _____

QUESTION 4 Change the following fractions to percentages.

a $\frac{3}{100}$ = _____ **b** $\frac{7}{100}$ = _____ **c** $\frac{11}{100}$ = _____

d $\frac{23}{100}$ = _____ **e** $\frac{37}{100}$ = _____ **f** $\frac{39}{100}$ = _____

g $\frac{17}{70}$ = _____ **h** $\frac{19}{80}$ = _____ **i** $\frac{9}{120}$ = _____

j $\frac{21}{90}$ = _____ **k** $\frac{7}{110}$ = _____ **l** $\frac{12}{150}$ = _____

QUESTION 5 Convert the following fractions to percentages.

a $\frac{3}{5}$ = _____ **b** $\frac{6}{35}$ = _____ **c** $\frac{9}{45}$ = _____

d $\frac{7}{9}$ = _____ **e** $\frac{2}{3}$ = _____ **f** $\frac{1}{8}$ = _____

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Topic 2: Changing percentages to decimals and decimals to percentages

QUESTION 1 Change the following percentages to decimals.

a 30% = _____ **b** 20% = _____ **c** 110% = _____

d 70% = _____ **e** 80% = _____ **f** 60% = _____

g 65% = _____ **h** 45% = _____ **i** 155% = _____

j 95% = _____ **k** 105% = _____ **l** 25% = _____

QUESTION 2 Express the following percentages as decimals.

a 4% = _____ **b** 62% = _____ **c** 56% = _____

d 65.7% = _____ **e** 68.7% = _____ **f** 37.4% = _____

g 68.9% = _____ **h** 53.6% = _____ **i** 59.6% = _____

j 91.7% = _____ **k** 43.9% = _____ **l** 5.7% = _____

QUESTION 3 Convert the following percentages to decimals.

a $1\frac{1}{2}\%$ = _____ **b** $3\frac{1}{5}\%$ = _____ **c** $18\frac{1}{2}\%$ = _____

d $12\frac{1}{2}\%$ = _____ **e** $6\frac{1}{4}\%$ = _____ **f** $25\frac{1}{4}\%$ = _____

QUESTION 4 Convert the following decimals to percentages.

a 0.40 = _____ **b** 0.90 = _____ **c** 0.60 = _____

d 0.15 = _____ **e** 0.20 = _____ **f** 0.45 = _____

g 0.138 = _____ **h** 0.234 = _____ **i** 0.482 = _____

j 0.356 = _____ **k** 0.504 = _____ **l** 0.579 = _____

QUESTION 5 Express the following decimals as percentages.

a 0.007 = _____ **b** 0.009 = _____ **c** 0.001 = _____

d 0.013 = _____ **e** 0.015 = _____ **f** 0.006 = _____

g 0.005 = _____ **h** 0.003 = _____ **i** 0.002 = _____

j 0.012 = _____ **k** 0.023 = _____ **l** 0.034 = _____

QUESTION 6 Convert the following decimals to percentages.

a 1.35 = _____ **b** 2.11 = _____ **c** 9.123 = _____

d 2.46 = _____ **e** 6.87 = _____ **f** 6.118 = _____

g 5.79 = _____ **h** 3.57 = _____ **i** 8.42 = _____

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Percentages

Topic 3: Finding the percentage of a quantity

QUESTION **1** Calculate the following.

a 10% of 200 = _____ **b** 80% of 700 = _____ **c** 120% of 800 = _____

d 70% of 400 = _____ **e** 50% of 300 = _____ **f** 30% of 900 = _____

g 40% of 800 = _____ **h** 90% of 600 = _____ **i** 60% of 500 = _____

j 110% of 1200 = _____ **k** 20% of 1300 = _____ **l** 130% of 1000 = _____

QUESTION **2** Find the following.

a 5% of 1100 = _____ **b** 45% of 350 = _____ **c** 105% of 960 = _____

d 65% of 2500 = _____ **e** 75% of 800 = _____ **f** 25% of 450 = _____

g 35% of 1500 = _____ **h** 15% of 225 = _____ **i** 115% of 675 = _____

j 85% of 300 = _____ **k** 95% of 840 = _____ **l** 55% of 825 = _____

QUESTION **3** Evaluate the following.

a 3% of 130 = _____ **b** 21% of 560 = _____ **c** 64% of 1256 = _____

d 24% of 245 = _____ **e** 46% of 1024 = _____ **f** 72% of 670 = _____

g 35% of 368 = _____ **h** 83% of 492 = _____ **i** 98% of 830 = _____

j 34% of 962 = _____ **k** 58% of 1132 = _____ **l** 68% of 1360 = _____

QUESTION **4** Work out the following.

a 2.5% of 130 = _____ **b** 9.3% of 960 = _____ **c** 1.4% of 780 = _____

d 6.7% of 410 = _____ **e** 5.6% of 260 = _____ **f** 7.9% of 1290 = _____

g 4.9% of 580 = _____ **h** 3.8% of 670 = _____ **i** 6.5% of 390 = _____

j 8.5% of 1640 = _____ **k** 8.3% of 1036 = _____ **l** 7.2% of 1450 = _____

QUESTION **5** Find the answers to the following.

a $2\frac{1}{2}$% of 600 = _____ **b** $33\frac{1}{3}$% of 100 = _____ **c** $45\frac{3}{4}$% of 900 = _____

d $58\frac{1}{2}$% of 1100 = _____ **e** $75\frac{1}{2}$% of 500 = _____ **f** $12\frac{1}{2}$% of 300 = _____

g $25\frac{1}{4}$% of 400 = _____ **h** $1\frac{1}{2}$% of 700 = _____ **i** $90\frac{1}{2}$% of 800 = _____

QUESTION **6** Evaluate the following.

a 8% of 350 = _____ **b** 8.4% of 100 = _____ **c** $12\frac{1}{2}$% of 864 = _____

d $6\frac{1}{4}$% of 300 = _____ **e** 50% of 710 = _____ **f** 20.6% of 537 = _____

g 3.5% of 875 = _____ **h** $16\frac{3}{4}$% of 400 = _____ **i** 60% of 200 = _____

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Percentages

Topic 4: Increasing or decreasing by a given percentage

QUESTION **1** Increase the following by the given percentage.

a \$90 by 10% = _____

b 72 h by 60% = _____

c \$450 by 50% = _____

d 800 ha by 30% = _____

e \$600 by 70% = _____

f 56 min by 80% = _____

g 500 g by 20% = _____

h 850 L by 40% = _____

i 620 kg by 100% = _____

j 60 t by 90% = _____

k \$840 by 15% = _____

l 870 cm by 65% = _____

QUESTION **2** Decrease the following by the given percentage.

a \$285 by 20% = _____

b \$96 by 20% = _____

c 16 m by 10% = _____

d 580 L by 80% = _____

e \$930 by 60% = _____

f \$4864 by 35% = _____

g \$235 by 70% = _____

h \$1525 by 85% = _____

i \$680.50 by 5% = _____

j \$550 by 90% = _____

k \$240 by 30% = _____

l \$660 by 40% = _____

QUESTION **3** Find the answers to the following.

a Increase \$300 by 10% = _____

b Increase 1500 L by 20% = _____

c Decrease \$550 by 20% = _____

d Decrease 240 t by 25% = _____

e Decrease 28 m by 25% = _____

f Decrease 600 by 15% = _____

g Increase \$860 by 30% = _____

h Increase \$800 by 30% = _____

i Increase \$1024 by 40% = _____

j Decrease \$2000 by 24% = _____

k Decrease \$230 by 5% = _____

l Increase \$2500 by 25% = _____

QUESTION **4**

a The price of a new car is \$36 000 and after 1 year it decreases by 20%. Find the new value of the car.

_____

Find the simple interest earned on:

b \$2500 at 12% p.a. for 1 year _____

_____

c \$36 000 at 8% p.a. for 2 years _____

_____

d \$6540 at 10% p.a. for 5 years _____

_____

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Percentages

Topic 5: Expressing quantities as percentages

QUESTION **1** What percentage is:

a 30 of 300? = _____

b 20 cents of $5? = _____

c 20 of 1600? = _____

d 70 of 280? = _____

e 14 of 90? = _____

f 12 of 60? = _____

g 27 of 63? = _____

h 82 of 90? = _____

i 120 of 480? = _____

j 40 cents of $8? = _____

k 9 h of 1 day? = _____

l 24 cm of 2 m? = _____

QUESTION **2** What percentage is the first quantity of the second quantity?

a 8 L, 240 L = _____

b 120 g, 9 kg = _____

c 6 m, 72 m = _____

d 200 cm, 4.8 m = _____

e 15 kg, 180 kg = _____

f $1.25, $10 = _____

g 60 mL, 300 mL = _____

h 375 mL, 12 L = _____

i 24 s, 2 min = _____

j $2.50, $8 = _____

k 12 h, 6 days = _____

l $3, 900 cents = _____

QUESTION **3** What percentage is:

a 25 cents of $4? = _____

b 400 g of 6 kg? = _____

c 14 min of 6 h? = _____

d $10 of 350 cents? = _____

e 750 m of 8 km? = _____

f 64 kg of 2 t? = _____

g 80 cents of $5.60? = _____

h 12 min of 4 h? = _____

i 8 mm of 72 cm? = _____

j 12 mm of 2.4 m? = _____

k 54 cm of 162 cm = _____

l 800 g of 4 kg? = _____

QUESTION **4** Work out the following.

a What percentage is 42 seconds of 3 minutes?

_____

b What percentage is 80 of 448?

_____

c Express 12 grams as a percentage of 216 grams.

_____

d Interest charges are $640 on a loan of $12 800. What percentage is the the interest on the loan?

_____

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Percentages

Topic 6: Unitary method and percentages

QUESTION **1** Work out the following.

a If 20% of a number is 68, what is the number? _____

b If 25% of a number is 230, what is the number? _____

c Find the total cost if 30% of it is $720. _____

d If 32% of a number is 800, what is the number? _____

e If 120% of a number is 80, what is the number? _____

QUESTION **2** Use the unitary method to solve the following.

a 40% of a number is 54. What is the number? _____

b 50% of a number is 360. What is the number? _____

c 35% of a number is 28. What is the number? _____

d 68% of a number is 152. What is the number? _____

e 15% of a number is 69. What is the number? _____

QUESTION **3** Find 100% of the number if a part of it is given.

a 2% is 20; 100% = _____

b 10% is 98; 100% = _____

c 5% is 30; 100% = _____

d 15% is 80; 100% = _____

e 30% is 15; 100% = _____

f $12\frac{1}{2}\%$ is 960; 100% = _____

g 45% is 28; 100% = _____

h $33\frac{1}{3}\%$ is 1920; 100% = _____

i 60% is 300; 100% = _____

j 75% is 680; 100% = _____

k 8% is 240; 100% = _____

l 40% is 75; 100% = _____

QUESTION **4** Find answers to the following.

a John spends $55 per week on food. If he spends 20% of his income on food, what is his weekly income?

_____

b I spent 48% of my allowance on a movie which cost me $15.50. How much is my allowance?

_____

c If $66\frac{2}{3}\%$ of a number is 27, find the number.

_____

d Lisa's income increased by 4%. If her income rose by $830, find her previous income.

_____

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Percentages

Topic 7: Problem solving with percentages

1 There are 40 students in a class and 30% are absent. How many are present?

_____

2 Find 8% of 2 kg, giving the answer in grams.

_____

3 If 7% of a number is 133, what is the number?

_____

Sarah pays 20% of her total weekly income in tax. If she receives $420 income per week, find:

4 Sarah's total weekly tax? _____

5 How much money Sarah receives after the tax has been taken out? _____

6 Increase $800 by 8% and then decrease the result by 8%.

_____

7 Find the simple interest on $350 for 2 years at a rate of 9% p.a.

_____

8 A book was bought for $2.25 and sold for $2.40. What is the gain percent?

_____

9 Add 125% of $84 to 21% of $200.

_____

10 21 out of 35 students play tennis. What percentage of the class play tennis?

_____

11 I spend 20% of my money to buy a car for $8600. How much did I have before buying the car?

_____

12 A block of land bought for $20 600 increased in value 12%. What is the new value?

_____

13 If after a $12\frac{1}{2}\%$ pay rise I receive $480, how much did I earn before the pay rise?

_____

14 If 40% of a number is 120, find the number.

_____

15 Find the simple interest on $3000 for 2 years at $6\frac{1}{4}\%$ p.a.

_____

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Percentages

Topic Test — PART A

Instructions This part consists of 15 multiple-choice questions
Each question is worth 1 mark
Fill in only ONE CIRCLE for each question
Calculators are NOT allowed

Time allowed: 15 minutes *Total marks = 15*

Marks

1 As a decimal $4\frac{1}{2}\%$ equals

Ⓐ 0.42 Ⓑ 0.45 Ⓒ 0.042 Ⓓ 0.045 **1**

2 15% of 1.5 tonnnes equals

Ⓐ 22.5 kg Ⓑ 100 kg Ⓒ 225 kg Ⓓ 1000 kg **1**

3 A toy was reduced in price from \$40 to \$36. What is the percentage discount?

Ⓐ 4% Ⓑ 10% Ⓒ 11% Ⓓ 96% **1**

4 What would John pay for a CD player that sells for \$550 but is discounted by 15%?

Ⓐ \$82.50 Ⓑ \$467.50 Ⓒ \$535 Ⓓ \$632.50 **1**

5 P% of \$$d$ is

Ⓐ \$$Pd$ Ⓑ $\$\left(\frac{P+d}{100}\right)$ Ⓒ \$$100Pd$ Ⓓ $\$\frac{Pd}{100}$ **1**

6 To increase 80 by 13% you evaluate

Ⓐ 80 + 1.13 Ⓑ 80×0.13 Ⓒ 80×1.13 Ⓓ $80 + \frac{13}{100}$ **1**

7 $\frac{1}{3}$ expressed as a percentage is

Ⓐ $\frac{1}{3}\%$ Ⓑ 3% Ⓒ 30% Ⓓ none of these **1**

8 Express 7% as a decimal.

Ⓐ 7.0 Ⓑ 0.7 Ⓒ 0.07 Ⓓ none of these **1**

9 Find 40% of 120 km

Ⓐ 3 km Ⓑ 4.8 km Ⓒ 30 km Ⓓ 48 km **1**

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Marks

10 Increase 250 by 6%

Ⓐ 265 Ⓑ 256 Ⓒ 400 Ⓓ none of these **1**

11 In a test a student gets 10 questions wrong out of 25. What percentage of questions are correct?

Ⓐ 15% Ⓑ 40% Ⓒ 60% Ⓓ 90% **1**

12 After 20% of a bill is paid, \$60 still remains to be paid. How much was the total bill?

Ⓐ \$12 Ⓑ \$63 Ⓒ \$72 Ⓓ \$75 **1**

13 $\frac{8}{20}$ equals

Ⓐ 8% Ⓑ 16% Ⓒ 40% Ⓓ 80% **1**

14 Which of the following marks is better than 50%?

Ⓐ 9 out of 25 Ⓑ 40 out of 70 Ⓒ 50 out of 200 Ⓓ 55 out of 120 **1**

15 A concrete mixture contains 1 part cement, 2 parts sand and 2 parts gravel.
What percentage of the mixture is sand?

Ⓐ 20% Ⓑ $33\frac{1}{3}\%$ Ⓒ 40% Ⓓ $66\frac{2}{3}\%$ **1**

Total marks achieved for PART A 15

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Percentages

Topic Test — PART B

Instructions This part consists of 15 questions
Each question is worth 1 mark
Write answers in the answers-only column

Time allowed: 20 minutes *Total marks = 15*

Questions	*Answers only*	*Marks*
1 Express 900% as a fraction.		1
2 What percentage is 5 of 30?		1
3 If 150 is 20% of a number, what is the number?		1
4 Find 31% of 300.		1
5 Increase 180 kg by 10%.		1
6 Decrease 860 by 5%.		1
7 Write $\frac{3}{5}$ as a percentage.		1
8 Write 0.74 as a percentage.		1
9 If 4% of an amount is 15, what is the amount?		1
10 Increase 100 by 8% and decrease the result by 8%.		1
11 If 5% = 5 then 12% =		1
12 Write the simplest fraction for 88%.		1
13 Find $33\frac{1}{3}$% of 270.		1
14 Change 66% to a fraction.		1
15 Find 100% given that 12% is 108.		1

Total marks achieved for PART B 15

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Percentages

Topic Test — PART C

Instructions This part consists of 4 questions
Each question is worth 5 marks
Show all necessary

Time allowed: 20 minutes *Total marks = 20*

Questions *Marks*

1 Convert the following to percentages.

a 0.9 _____ **b** 0.06 _____

c $\frac{52}{100}$ _____ **d** $3\frac{2}{5}$ _____

e 1.65 _____ **5**

2 Find the percentage of each quantity.

a 5% of 2800 cm _____ **b** 85% of $260 _____

c 53% of 8.5 L _____ **d** $24\frac{1}{2}$% of 12 hours _____

e 125% of 84 _____ **5**

3 Complete the table.

	Fraction	Percentage	Decimal
a		55%	
b			0.85
c	$12\frac{1}{2}$		
d		$6\frac{1}{4}$%	
e	$\frac{3}{5}$		

5

4 Write the first quantity as a percentage of the second quantity.

a 48 g, 100 g _____

b 45 min, 3 h _____

c 248 cm, 2 m _____

d Increase $240 by 30% _____

e Decrease $80 by 20% _____ **5**

Total marks achieved for PART C 20

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MATHLETICS
Inspiring Better Results

Basic Algebra

Student Book - Series I-1

Mathletics Instant Workbooks

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Basic algebra

Student Book - Series I

Contents

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Author of The Topics and Topic Tests: AS Kalra

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Basic algebra

Topic 1: Addition and subtraction of like terms

Question 1 Simplify the following expressions by collecting like terms.

a $2x + 3x =$ _____ **b** $5x - 2x =$ _____

c $5a + 4a =$ _____ **d** $9y - 6y =$ _____

e $3y + 7y =$ _____ **f** $4q - 3q =$ _____

g $8m + 6m =$ _____ **h** $9a - a =$ _____

i $2b + 15b =$ _____ **j** $8t - 2t =$ _____

k $7n + 5n =$ _____ **l** $5mn + 3mn =$ _____

m $8p - 5p =$ _____ **n** $8xy + 7xy =$ _____

o $7p - 3p =$ _____ **p** $18x^2 - 12x^2 =$ _____

Question 2 Simplify the following.

a $5p + 6p - 3p =$ _____ **b** $8m - 3m - 2m + 7m =$ _____

c $8x - 5x + 7x =$ _____ **d** $4xy + 6xy - 3xy - 2xy =$ _____

e $12y - 4y + 5y =$ _____ **f** $8k + 4k + 2k - 5k =$ _____

g $8xy + 2xy + 5xy =$ _____ **h** $9a + 2a + 3a - 7a =$ _____

i $6m - 3m + 10m =$ _____ **j** $11p + 5p - 7p =$ _____

k $5a + 7a + 3a + 6a =$ _____ **l** $6ab - 3ab - ab + 2ab =$ _____

m $8x^2 + 7x^2 - 6x^2 - 3x^2 =$ _____ **n** $6a^2 + 7a^2 + 8a^2 - 10a^2 =$ _____

o $4x - 2x + 9x - 6x =$ _____ **p** $11y - 6y - 3y - y =$ _____

Question 3 Simplify by collecting like terms.

a $4x + 3x + 2y + 7y =$ _____ **b** $11a + 7b - 3a =$ _____

c $3m + 7m + 8n + 9m =$ _____ **d** $9c - 6c - 2c + 3d =$ _____

e $8a + 7a - 2m - 3m =$ _____ **f** $9x^2 - x^2 - 3x^2 =$ _____

g $3x + 2y + 5x =$ _____ **h** $12mn - 6mn + 3mn =$ _____

i $8y + 7x - 3x - 2x =$ _____ **j** $5x + 7y - 4y - 2x =$ _____

k $8m + 2n + 9n + 2n =$ _____ **l** $5t + 17 - 2t - 8 =$ _____

m $7y + 6y - 3x + 7x =$ _____ **n** $6a + 9 - 3a =$ _____

o $12 - 3x - 2x =$ _____ **p** $9m + 7mn - 6m - 2mn =$ _____

q $10m + 5n + 3n + 4m =$ _____ **r** $5x + 3y - 2x - 2y =$ _____

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Topic 2: Multiplication and division of pronumerals

Question 1 Find the products of the following.

a $7 \times 3a =$ _____ **b** $4a \times 9b =$ _____

c $4m \times 5n =$ _____ **d** $ab \times a =$ _____

e $(-2x) \times 5 =$ _____ **f** $(-8m) \times (-2m) =$ _____

g $4a \times (-3a) =$ _____ **h** $(-9m) \times (-3) =$ _____

i $8 \times 3b \times b =$ _____ **j** $(-5x) \times (-x) =$ _____

k $(-2a) \times (-3b) =$ _____ **l** $3a \times 4am =$ _____

m $4mn \times 3m \times 2n =$ _____ **n** $(-2p) \times 5 \times (-5p) =$ _____

o $6ab \times 5 =$ _____ **p** $(-6m) \times (-5mn) =$ _____

Question 2 Work out the following divisions.

a $\frac{12a}{4}$ _____ **b** $\frac{16m}{2m}$ _____

c $\frac{10a^2b}{5a^2}$ _____ **d** $25m \div 5m =$ _____

e $12a \div -6 =$ _____ **f** $-10pq \div 5p =$ _____

g $(-32a) \div (-8a) =$ _____ **h** $-48xy \div -16x =$ _____

i $50ab \div 25ab =$ _____ **j** $-9xy \div xy =$ _____

k $5x \div (-5) =$ _____ **l** $60m \div (-10m) =$ _____

m $18xy \div xy =$ _____ **n** $-18a \div 6a =$ _____

o $abc \div ab =$ _____ **p** $9ab \div 3a =$ _____

q $5m \div 4m =$ _____ **r** $(-36mn) \div (-9m) =$ _____

Question 3 Simplify the following.

a $2a \times 3a \times 4b =$ _____ **b** $5x \times 2x \times 4 =$ _____

c $9x \times 8 \div 12x =$ _____ **d** $5a \times 9ab \div a^2b =$ _____

e $-5a \times 6a \times (-2) =$ _____ **f** $9mn \times 3m \div n =$ _____

g $16xyz \div 8xy \div z =$ _____ **h** $15 \times 2m \div 3 =$ _____

i $9 \times 6m \div 3 =$ _____ **j** $(6a)^2 \div 9a =$ _____

k $(-3) \times (-2p) \times 7 =$ _____ **l** $64ab \div 8b \div 4q =$ _____

m $15mn \div -15mn =$ _____ **n** $(5ab)^2 \div 25a^2b =$ _____

o $8x \times -5 \times (-2x) =$ _____ **p** $-3a \times 2b \times -4a =$ _____

q $18xy \div 6x \div 3y =$ _____ **r** $12x \times 4x \div 16x =$ _____

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Basic algebra

Topic 3: Indices

Question 1 Simplify the following.

a $x^5 \times x^2 =$ _____ **b** $n^9 \times n^6 =$ _____ **c** $q^3 \times q^7 =$ _____

d $a^7 \times a^7 =$ _____ **e** $9p^2 \times p^6 =$ _____ **f** $x^8 \times x^3 \times x^2 =$ _____

g $5x^6 \times 4x^5 =$ _____ **h** $a^2b \times a^3 =$ _____ **i** $10p^4 \times 10p^4 =$ _____

j $3x^4 \times 4x^3 =$ _____ **k** $9a^3 \times 6a^4 =$ _____ **l** $x^4y^3 \times x^5y^2 =$ _____

m $x^7 \times x^9 =$ _____ **n** $a^3b^3 \times a^2b^2 =$ _____ **o** $4x \times 9x^5 =$ _____

p $y^7 \times 8y^3 =$ _____ **q** $x^6 \times x^5 \times x^3 =$ _____ **r** $5a^2b \times 2a \times 3b =$ _____

Question 2 Simplify the following.

a $a^9 \div a^5 =$ _____ **b** $x^7 \div x^3 =$ _____ **c** $y^{12} \div y^{10} =$ _____

d $6x^7 \div x^5 =$ _____ **e** $18a^6 \div 9a^4 =$ _____ **f** $36m^7 \div 9m^6 =$ _____

g $15n^{10} \div 5n^6 =$ _____ **h** $9a^9 \div 9a^7 =$ _____ **i** $48a^6 \div 16a^4 =$ _____

j $a^{13} \div a^9 =$ _____ **k** $k^{12} \div k^5 =$ _____ **l** $p^7q^7 \div p^4q =$ _____

m $12a^{10} \div 6a^8 =$ _____ **n** $24m^7 \div 12m^3 =$ _____ **o** $m^6n^3 \div m^5 =$ _____

p $p^9q^6 \div p^6q^3 =$ _____ **q** $a^{10}n^7 \div a^8 =$ _____ **r** $12a^6b^4 \div 6a^5b^3 =$ _____

Question 3 Simplify the following.

a $(x^2)^3 =$ _____ **b** $(y^3)^5 =$ _____ **c** $(a^2)^4 =$ _____

d $(m^3)^3 =$ _____ **e** $(k^4)^2 =$ _____ **f** $(x^5)^7 =$ _____

g $(2x^3)^3 =$ _____ **h** $(3y^2)^3 =$ _____ **i** $(5m^3)^4 =$ _____

j $(2x^5)^3 =$ _____ **k** $(7p^2)^2 =$ _____ **l** $(a^2b)^3 =$ _____

m $(ab)^6 =$ _____ **n** $(x^2y^2)^3 =$ _____ **o** $(m^4n^3)^2 =$ _____

p $(3x^3y^4)^2 =$ _____ **q** $(8xy^2)^2 =$ _____ **r** $(10a^2b^3)^2 =$ _____

Question 4 Use the index laws to simplify the following.

a $x^6 \times x^3 =$ _____ **b** $y^9 \div y^3 =$ _____ **c** $(m^2)^5 =$ _____

d $a^2b^5 \times a^3b^3 =$ _____ **e** $(5m^2)^3 =$ _____ **f** $9p^2 \times 4p^7 =$ _____

g $(x^2)^3 \times x^5 =$ _____ **h** $(a^4)^3 \div a^9 =$ _____ **i** $5a^4b \times 6ab^2 =$ _____

j $5a^4 \times 3a^2 =$ _____ **k** $(6m)^2 \times (2m)^3 =$ _____ **l** $9ab \times a \times b =$ _____

m $8p^5 \div 4p^3 \times 6p =$ _____ **n** $a^2b \times a^2 \times b^2 =$ _____ **o** $x^9 \times x^7 \div x^{10} =$ _____

p $(2ab)^3 =$ _____ **q** $a^0 + (2a)^0 =$ _____ **r** $9x^0 =$ _____

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Topic 4: Grouping symbols

QUESTION **1** Expand the following expressions.

a $5(a + 3) =$ _____ **b** $6(x - 7) =$ _____

c $-2(6 + a) =$ _____ **d** $-5(x + 7) =$ _____

e $9(2a + 5) =$ _____ **f** $3(5x - 9) =$ _____

g $2a(6 + 3a) =$ _____ **h** $x(2x - 5) =$ _____

i $m(6m + 3) =$ _____ **j** $5x(x - 3) =$ _____

k $7n(2n - 3) =$ _____ **l** $-3a(a - 2) =$ _____

m $-2(a + 5) =$ _____ **n** $-7(3p - 4) =$ _____

o $5a(a - 1) =$ _____ **p** $-3x(2x - 2) =$ _____

q $-(x + 9) =$ _____ **r** $-(4y - 7) =$ _____

QUESTION **2** Expand and simplify by collecting like terms.

a $3(x + 5) + 6x =$ _____ **b** $6(a - 5) - 5a =$ _____

c $4(m - 3) + 2m =$ _____ **d** $2(x - 3) + 3x + 7 =$ _____

e $6y(y + 4) - 2y^2 =$ _____ **f** $6(m - 2) - 3m =$ _____

g $5x + 3(10 - x) =$ _____ **h** $9x + 3(x - 2) =$ _____

i $6m - 2(m + 1) =$ _____ **j** $2m + 3(m - 3) + 7 =$ _____

QUESTION **3** Expand and simplify.

a $3(x + 2) + 4(x - 2) =$ _____ **b** $8(m - 3) + 3(m - 2) =$ _____

c $5(p - 7) + 3(p + 2) =$ _____ **d** $8(x + 3) + 2(x - 1) =$ _____

e $4(x + 3) - 2(x + 1) =$ _____ **f** $x(x + 1) - (x - 3) =$ _____

g $5(p - 6) - 2(p - 1) =$ _____ **h** $p(5p + 6) - 3(2p - 3) =$ _____

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Topic 5: Substitution

Question 1 If $a = 2$, $b = 3$, $c = 4$ and $d = 5$, evaluate the following.

a $abc =$ _____ **b** $a + b + c - d =$ _____ **c** $ab + bc =$ _____

d $a^2 + b^2 + c^2 =$ _____ **e** $bc \div a =$ _____ **f** $abcd =$ _____

g $b^2 + c^2 - ad =$ _____ **h** $b^2 + 10 =$ _____ **i** $3ab + 2cd =$ _____

j $3a^2c - d =$ _____ **k** $5c^2 - 12 =$ _____ **l** $a^3 + b^3 =$ _____

Question 2 If $x = 5$, find the value of the following expressions.

a $3x + 2 =$ _____ **b** $65 - 4x =$ _____ **c** $4(x + 3) =$ _____

d $(2x - 7)^2 =$ _____ **e** $6x - x^2 =$ _____ **f** $2x\,(x - 3) =$ _____

g $(x + 2)^2 =$ _____ **h** $(x - 3)^2 =$ _____ **i** $x^3 =$ _____

j $(2x)^2 =$ _____ **k** $\sqrt{21 - x}$ _____ **l** $2x^2 =$ _____

m $(x - 3)^3 =$ _____ **n** $(x + 2)\,(x - 2) =$ _____ **o** $x^2 - 7 =$ _____

Question 3 If $x = 6.5$, $y = 2.4$ and $z = 5.8$, find correct to one decimal place the value of

a $x + y =$ _____ **b** $x + y + z =$ _____ **c** $x + y - z =$ _____

d $xy =$ _____ **e** $xyz =$ _____ **f** $x^2 =$ _____

g $x^2 + z^2 =$ _____ **h** $y^3 =$ _____ **i** $\sqrt{yz} =$ _____

j $(x - z) + 3 =$ _____ **k** $x \div y =$ _____ **l** $(x + y) \div z =$ _____

m $(x + y)^2 =$ _____ **n** $\sqrt{x + y + z} =$ _____ **o** $\sqrt[3]{x + y + z} =$ _____

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Topic 6: Common factors

QUESTION **1** Factorise the following by taking the highest common factor out.

a $5a + 5 =$ _____ **b** $8x - 8 =$ _____ **c** $3y - 3 =$ _____

d $2x + 2 =$ _____ **e** $6m + 6 =$ _____ **f** $7m + 7 =$ _____

g $3p + 6 =$ _____ **h** $4q + 8 =$ _____ **i** $6x - 9y =$ _____

j $4x - 16 =$ _____ **k** $9b - 18 =$ _____ **l** $5a + 20 =$ _____

m $2a + 6 =$ _____ **n** $3m + 12 =$ _____ **o** $6n - 24 =$ _____

p $8x - 32 =$ _____ **q** $3a + 15 =$ _____ **r** $2a + 14 =$ _____

QUESTION **2** Factorise by taking the common factor out.

a $3a + 3b =$ _____ **b** $5m + 5n =$ _____ **c** $6p - 6q =$ _____

d $7a + 14b =$ _____ **e** $3l - 9m =$ _____ **f** $m^2 + 7m =$ _____

g $y^2 + 6y =$ _____ **h** $9x - 18y =$ _____ **i** $3a - 24b =$ _____

j $4x + 4y =$ _____ **k** $mp - 3p =$ _____ **l** $8x - 32y =$ _____

m $6x - 36 =$ _____ **n** $3m + 12m^2 =$ _____ **o** $5y - y^2 =$ _____

p $9x - 6 =$ _____ **q** $8m - 8n =$ _____ **r** $6x - 3x^2 =$ _____

s $2x^2 - 4x =$ _____ **t** $6pq - 12p^2 =$ _____ **u** $10x - 10y =$ _____

QUESTION **3** Factorise the following.

a $-3x + 6 =$ _____ **b** $-5x + 10 =$ _____ **c** $-4x + 8 =$ _____

d $-6x + 18 =$ _____ **e** $-2x + x^2 =$ _____ **f** $-6a + 24 =$ _____

g $-3a + 12 =$ _____ **h** $-4a + 16 =$ _____ **i** $-6a - 12 =$ _____

j $-4y - 8 =$ _____ **k** $-2x - 10 =$ _____ **l** $-8y - 4x =$ _____

m $-3p - 9q =$ _____ **n** $-5x - 25 =$ _____ **o** $-x - 5 =$ _____

QUESTION **4** Factorise.

a $7a + 7b =$ _____ **b** $4a - 20 =$ _____ **c** $9x - 9y =$ _____

d $3m + 15 =$ _____ **e** $6 - 6t =$ _____ **f** $m^2 - 4m =$ _____

g $5ab - a^2 =$ _____ **h** $7m - 14n =$ _____ **i** $8ab - 6a^2b =$ _____

j $-4 - 12a =$ _____ **k** $-3 - 15p =$ _____ **l** $-3m - 6n =$ _____

m $9m - 36 =$ _____ **n** $-4a - 20a^2 =$ _____ **o** $-x - 7 =$ _____

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Topic 7: Addition and subtraction of algebraic fractions

Question 1 Find the sum of these algebraic fractions.

a $\frac{x}{5}+\frac{x}{5}=$ _____ **b** $\frac{x}{3}+\frac{x}{3}=$ _____ **c** $\frac{a}{7}+\frac{a}{7}=$ _____

d $\frac{x}{2}+\frac{x}{2}=$ _____ **e** $\frac{m}{4}+\frac{m}{4}=$ _____ **f** $\frac{x}{7}+\frac{3x}{7}=$ _____

g $\frac{5a}{8}+\frac{a}{8}=$ _____ **h** $\frac{y}{3}+\frac{y}{4}=$ _____ **i** $\frac{2a}{3}+\frac{a}{5}=$ _____

j $\frac{2x}{7}+\frac{3x}{14}=$ _____ **k** $\frac{5m}{6}+\frac{m}{3}=$ _____ **l** $\frac{7a}{6}+\frac{a}{8}=$ _____

Question 2 Subtract the following algebraic fractions.

a $\frac{2x}{7}-\frac{x}{7}=$ _____ **b** $\frac{5p}{9}-\frac{4p}{9}=$ _____ **c** $\frac{2b}{3}-\frac{b}{3}=$ _____

d $\frac{3m}{4}-\frac{m}{4}=$ _____ **e** $\frac{x}{2}-\frac{x}{5}=$ _____ **f** $\frac{5p}{7}-\frac{2p}{7}=$ _____

g $\frac{a}{6}-\frac{a}{12}=$ _____ **h** $\frac{p}{18}-\frac{2p}{12}=$ _____ **i** $\frac{3x}{10}-\frac{3}{5}=$ _____

j $\frac{a+1}{2}-\frac{2a}{3}=$ _____ **k** $\frac{2x}{3}-\frac{x+1}{4}=$ _____ **l** $\frac{y}{2}-\frac{3y+1}{3}=$ _____

Question 3 Find the answers to the following.

a $\frac{2x}{3}+\frac{x}{3}=$ _____ **b** $\frac{5x}{8}-\frac{3x}{8}=$ _____ **c** $\frac{7x}{9}-\frac{2}{9}=$ _____

d $\frac{5p}{7}-\frac{3p}{7}=$ _____ **e** $\frac{2m}{5}-\frac{m}{5}=$ _____ **f** $\frac{p}{6}+\frac{2p}{3}=$ _____

g $\frac{3x}{7}-\frac{2x}{14}=$ _____ **h** $\frac{2a}{5}+\frac{a}{5}=$ _____ **i** $\frac{2x}{3}+\frac{x}{4}=$ _____

j $\frac{2a}{15}-\frac{a}{15}=$ _____ **k** $\frac{5a}{3}+\frac{a}{5}=$ _____ **l** $\frac{a+3}{2}+\frac{a-2}{3}=$ _____

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Topic 8: Multiplication and division of algebraic fractions

QUESTION 1 Find the product of these algebraic fractions.

a $\frac{x}{3} \times \frac{6}{x} =$ _____ **b** $\frac{5}{a} \times \frac{a}{7} =$ _____ **c** $\frac{24}{y} \times \frac{y}{8} =$ _____

d $\frac{mn}{5} \times \frac{15}{m} =$ _____ **e** $\frac{4l}{3} \times \frac{6}{8} =$ _____ **f** $\frac{xy}{7} \times \frac{21}{x} =$ _____

g $\frac{9a^2}{5} \times \frac{15}{18a} =$ _____ **h** $\frac{ab}{3} \times \frac{a}{b} =$ _____ **i** $\frac{p}{3} \times \frac{6}{2p} =$ _____

QUESTION 2 Divide the following algebraic fractions.

a $\frac{x}{5} \div \frac{x}{10} =$ _____ **b** $\frac{x}{4} \div \frac{x}{3} =$ _____ **c** $\frac{y}{3} \div \frac{y}{7} =$ _____

d $\frac{m}{3} \div \frac{m}{12} =$ _____ **e** $\frac{5m}{12} \div \frac{6m}{8} =$ _____ **f** $\frac{x}{y} \div \frac{y}{x} =$ _____

g $\frac{ab}{2} \div \frac{ac}{3} =$ _____ **h** $\frac{ab}{5} \div \frac{a}{15} =$ _____ **i** $\frac{m}{n} \div \frac{p}{q} =$ _____

j $\frac{6p}{5} \div \frac{2p}{3} =$ _____ **k** $\frac{2a}{5} \div \frac{4a}{7} =$ _____ **l** $\frac{p}{q} \div \frac{p}{q} =$ _____

QUESTION 3 Find the answers to the following.

a $18p^2 \div 6p =$ _____ **b** $\frac{a}{12} \times \frac{18}{2a} =$ _____ **c** $\frac{7p}{18} \times \frac{5}{14p} =$ _____

d $\frac{mn}{9} \times \frac{27}{m^2} =$ _____ **e** $\frac{3p}{4} \times \frac{7}{12p} =$ _____ **f** $\frac{p}{3} \times \frac{15}{p} =$ _____

g $\frac{m}{2} \div \frac{m}{4} =$ _____ **h** $\frac{m}{6} \div \frac{m^2}{18} =$ _____ **i** $\frac{2xy}{7} \times \frac{14}{x^2y^2} =$ _____

j $\frac{a}{b} \times \frac{b^2}{a} =$ _____ **k** $\frac{mn^2}{5p^2} \div \frac{m^2n^2}{10p^2} =$ _____ **l** $\frac{abc}{7} \div \frac{ab}{14} =$ _____

m $\frac{9mn}{2p} \times \frac{8p}{12m} =$ _____ **n** $\frac{ab^2}{ac} \times \frac{c^2}{a^2} =$ _____ **o** $\frac{2x}{y} \div \frac{4x}{y^2} =$ _____

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Topic 9: Problem solving and algebra

1 Write the sum of $2x$ and $3y$. _____

2 Write the product of m and n. _____

3 Write the average of $2x$, y and $3z$. _____

4 Find the expression 3 more than $2x$. _____

5 If the first number is x, write the next consecutive integer. _____

6 Find the area of a square with side length x metres. _____

7 Write the perimeter of a rectangle of length 15 cm and width 7 cm. _____

8 Find the perimeter of a square with side length 8 cm. _____

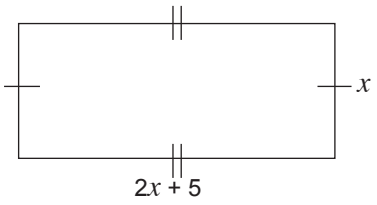
9 Find the volume of a cube with side length 5 cm. _____

10 Find the number x less than $3x + 4y$. _____

11 Increase $5x$ by 2. _____

12 Write the perimeter of the following shapes.

a



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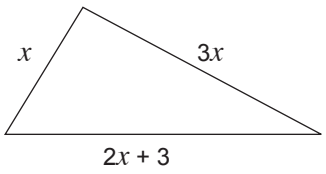
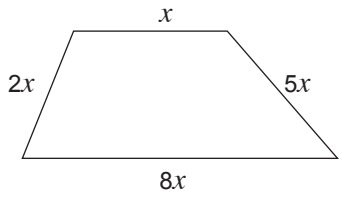
b



_____

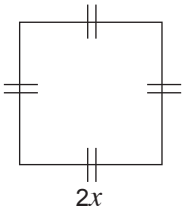
c



_____

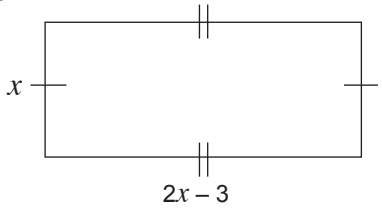
13 Find the area of the following shapes.

a



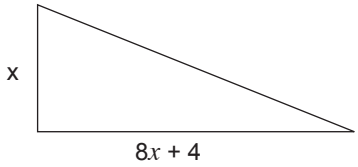
_____

b



_____

c



_____

14 Your pocket money is $\$x$ per week. How much do you earn in 7 weeks? _____

15 If I bought p pens and $3q$ pencils and my sister bought $5p$ pens and $2q$ pencils, how many pens and pencils do we have altogether? _____

16 Three different types of sweets cost $5y$, $3y$ and $2y$ cents each. If I buy 4 of each type, what would be the total cost? _____

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Topic Test — PART A

Instructions This part consists of 12 multiple-choice questions
Each question is worth 1 mark
Fill in only ONE CIRCLE for each question
Calculators are NOT allowed

Time allowed: 15 minutes **Total marks = 12**

					Marks
1	$8x - 3x - x$ equals				
	(A) $4x$	(B) $6x$	(C) $8x - 3$	(D) 5	1
2	$a^3 + a^3$ equals				
	(A) a^6	(B) a^9	(C) $2a^3$	(D) $2a^6$	1
3	$3ab^2$ equals				
	(A) $3 \times a \times b \times 2$	(B) $3 \times ab \times ab$	(C) $3ab \times 3ab$	(D) $3 \times a \times b \times b$	1
4	$12m^6 \div 4m^3$ equals				
	(A) $3m^3$	(B) $3m^2$	(C) $8m^3$	(D) $8m^2$	1
5	$2(x - 7) + x$ equals				
	(A) $3x - 7$	(B) $3x - 14$	(C) $x - 7$	(D) $x - 14$	1
6	The simplest fraction for $\frac{x}{2} + \frac{x}{3}$ is				
	(A) $\frac{x}{5}$	(B) $\frac{2x}{5}$	(C) $\frac{2x}{6}$	(D) $\frac{5x}{6}$	1
7	$4a^2 \times 5a^4$ equals				
	(A) $9a^6$	(B) $9a^8$	(C) $20a^6$	(D) $20a^8$	1
8	b is a factor of $ab + bc$. What is the other factor?				
	(A) a	(B) $a + bc$	(C) ac	(D) $a + c$	1
9	Simplify $\frac{a^6b}{a^2b^2}$				
	(A) $\frac{a^3}{b}$	(B) $\frac{a^4}{b}$	(C) a^3b	(D) a^4b	1
10	$x(x - 5)$ equals				
	(A) $x^2 - 5$	(B) $x^2 - 5x$	(C) $-4x$	(D) $-5x^2$	1
11	$k^4 \times (k^8 \div k^2)$ equals				
	(A) k^{16}	(B) k^{10}	(C) k^8	(D) k^6	1
12	If $a = 4$ and $b = 5$ then $3ab^2$ equals				
	(A) 120	(B) 300	(C) 1200	(D) 3600	1

Total marks achieved for PART A 12

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Topic Test — PART B

Instructions This part consists of 15 questions
Each question is worth 1 mark
Write answers in the answers-only column

Time allowed: 20 minutes **Total marks = 15**

Questions	Answers only	Marks
Simplify the following.		
1 $-5a+6a+3a$		1
2 $(3ab)^2$		1
3 $\frac{1}{2}ab \times 32b^2$		1
4 $\frac{a^2}{b} \div \frac{1}{b}$		1
5 Expand and simplify $5a+3(2-a)$.		1
6 Simplify $\frac{8}{a} - \frac{3}{a}$		1
7 Expand and simplify $x(2x-1)-2(x^2-x)$.		1
8 Factorise $2p^2q+4pq^2$.		1
9 Expand and simplify $3(x+5)+4(x+3)-6(3x-2)$.		1
10 Expand $(y-2)(y+4)$.		1
11 Simplify $\frac{6x+9}{6}$.		1
12 Simplify $a^2b^3 \times 2(ab)^3 \div 8a^3b^4$.		1
13 Simplify $\frac{5x}{2y} \times \frac{8x}{25y}$.		1
14 Simplify $\frac{a^3b}{3} \div \frac{a}{6b}$.		1
15 Simplify $\frac{3x}{10} - \frac{x}{10} + \frac{7x}{10}$.		1

Total marks achieved for PART B 15

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Student Book - Series I 2

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Author of The Topics and Topic Tests: AS Kalra

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Topic 1: Addition and subtraction of like terms

Question 1 Add the following expressions.

a $3x + 8x =$ _____ **b** $5x + 11x =$ _____

c $9x + 7x =$ _____ **d** $18x + 9x =$ _____

e $16x + 25x =$ _____ **f** $30x + 14x + x =$ _____

g $6xy + 8xy =$ _____ **h** $9mn + 11nm =$ _____

i $15a + 16a + 7a =$ _____ **j** $8x + 3x + 7x =$ _____

k $15a^2 + 26a^2 + a^2 =$ _____ **l** $7p + 6p + 5p + p =$ _____

Question 2 Subtract the following expressions.

a $6a - 2a =$ _____ **b** $15a - 7a =$ _____

c $8a - 3a =$ _____ **d** $17x - 2x =$ _____

e $14m - 6m - m =$ _____ **f** $8y - 3y - y =$ _____

g $15x - 7x - 2x =$ _____ **h** $6xy - 3xy - xy =$ _____

i $25x^2 + 7x^2 - 4x^2 - 6x^2 =$ _____ **j** $14y - 3y - y - 2y =$ _____

k $8x - 2x - x =$ _____ **l** $19p - 3p - 5p =$ _____

Question 3 Simplify the following expressions by adding or subtracting.

a $8a + 7a - 3a =$ _____ **b** $5x + 6x - x - 2x =$ _____

c $5a + 15a - 6a =$ _____ **d** $8a + 5a + 3a - 2a =$ _____

e $19xy + 2xy - xy =$ _____ **f** $7mn + 3nm - 2mn =$ _____

g $9x^2 + 8x^2 - 3x^2 - 5x^2 =$ _____ **h** $9a^2 + 7a^2 - a^2 - 2a^2 =$ _____

i $5x - 2x + 3x - x =$ _____ **j** $8t + 6t + 3t - t =$ _____

k $6m + 7m - 2m - m =$ _____ **l** $8a + 16a - 5a - 7a =$ _____

Question 4 Simplify the following.

a $9x + 3y - 6x + 2y =$ _____ **b** $20a + 3b + 8b - 11a =$ _____

c $6m + 3n - n - m =$ _____ **d** $6x^2 - 4x^2 - x^2 + 3x^2 =$ _____

e $8a + 3b + 2b - 6a =$ _____ **f** $10a + 4a - 5b - b =$ _____

g $7y + 8y - 3x - 4x =$ _____ **h** $6xy + 3yx - xy - 2yx =$ _____

Question 5 Simplify the following expressions.

a $15 - 8x + 7 - 2x =$ _____ **b** $8m + 3n - 5m =$ _____

c $18x - 3y + y + x =$ _____ **d** $2x^2 + 9x^2 - 7y^2 =$ _____

e $10m + 3n - 2m - n =$ _____ **f** $19xy + 6yz - 13yx =$ _____

g $12a + 6b - 3a =$ _____ **h** $6a + 9b - 3b - 3a =$ _____

i $9t + 18 - 3t - 15 =$ _____ **j** $6ab + 3ba + 9ab =$ _____

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Topic 2: Multiplication of pronumerals

Question 1 Multiply the following expressions.

a $2 \times 5a =$ _____ **b** $3 \times 6b =$ _____

c $8 \times 9y =$ _____ **d** $7 \times 3y =$ _____

e $(-6) \times ab =$ _____ **f** $(-3) \times (-2a) =$ _____

g $3a \times (-b) =$ _____ **h** $(-2a) \times (-3b) =$ _____

i $(-6x) \times (-3) =$ _____ **j** $(9ab) \times (-5a) =$ _____

k $(-2a) \times (-8a) =$ _____ **l** $(-6x) \times (-2x) =$ _____

Question 2 Find the products of the following.

a $6a \times 3b =$ _____ **b** $(-6x) \times (-x) =$ _____

c $5x \times 8y =$ _____ **d** $(-8y) \times (-y) \times 3 =$ _____

e $9a \times 3b =$ _____ **f** $6a \times (-a) \times 5 =$ _____

g $6y \times 8y =$ _____ **h** $t \times (-3t) \times (-2) =$ _____

i $9x \times 3y \times 2x =$ _____ **j** $5a \times (-6ab) =$ _____

Question 3 Work out the following products.

a $2a \times ab =$ _____ **b** $3 \times 6a \times 5 =$ _____

c $5a \times 6bc \times a =$ _____ **d** $ab \times bc \times ca =$ _____

e $9ab \times (-6bc) =$ _____ **f** $6a \times 7ap =$ _____

g $(-8x) \times 5 =$ _____ **h** $3x \times 2y \times y =$ _____

Question 4 Find the following products.

a $8a \times 5b =$ _____ **b** $(-7k) \times (-2k) =$ _____

c $9x \times (-8y) \times xy =$ _____ **d** $8ax \times a \times ax =$ _____

e $(-6m) \times (-6m) =$ _____ **f** $-6t \times 4m \times (-m) =$ _____

g $y \times -y \times -3y =$ _____ **h** $(-5x) \times (-2) \times (-3x) =$ _____

Question 5 Simplify the following expressions.

a $8ab \times (-ab) =$ _____ **b** $7 \times 3a \times (-4a) =$ _____

c $9x \times y \times (-2x) =$ _____ **d** $2a \times 3b \times 5c =$ _____

e $(-a) \times (-2a) \times (-2b) =$ _____ **f** $(-x) \times (-y) \times (-x) =$ _____

g $(-5p) \times (-5p) =$ _____ **h** $6a \times (-3a) \times 2 =$ _____

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Topic 3: Division of pronumerals

Question 1 Work out the following divisions.

a $\frac{18a}{6} =$ _____ **b** $\frac{9pq}{3} =$ _____ **c** $\frac{12m}{15m^2} =$ _____

d $\frac{15x}{5} =$ _____ **e** $\frac{21xy}{7x} =$ _____ **f** $\frac{18a^2}{3a} =$ _____

g $\frac{12a}{6} =$ _____ **h** $\frac{36x^2}{4x} =$ _____ **i** $\frac{30y}{10y^2} =$ _____

Question 2 Find the following divisions.

a $15x \div 5x =$ _____ **b** $-36xy \div -9x =$ _____

c $12mn \div 4m =$ _____ **d** $64m^2 \div 8m =$ _____

e $5x \div -5 =$ _____ **f** $(-48ab) \div (-6a) =$ _____

g $8x \div 2x =$ _____ **h** $72a^2 \div 9a =$ _____

i $32xy \div 8x =$ _____ **j** $15ab \div (-5a) =$ _____

k $27ab \div 9a =$ _____ **l** $16x^2y \div 4xy =$ _____

Question 3 Divide the following algebraic expressions.

a $(-24)x \div 8 =$ _____ **b** $(-6ab) \div 3a =$ _____

c $38x^2y \div 19x^2 =$ _____ **d** $(-15x^2) \div (-5x) =$ _____

e $27x^2y^2 \div 9x^2y =$ _____ **f** $(-16k) \div (-4k) =$ _____

g $(-52x^2) \div (-13) =$ _____ **h** $(-36y) \div (-3) =$ _____

i $20pq \div -4p =$ _____ **j** $50mn \div 5m =$ _____

Question 4 Simplify the following.

a $28x \div -7x =$ _____ **b** $68xy \div 4xy =$ _____

c $32x^2 \div (-4x) =$ _____ **d** $(-18x) \div 9x =$ _____

e $(-30x) \div (-15) =$ _____ **f** $(-48m^3) \div (-8m^2) =$ _____

g $(-25y^2) \div (-5y) =$ _____ **h** $(-64ab) \div (-8a) =$ _____

Question 5 Find the answers to the following.

a $24ab \div (-6a) =$ _____ **b** $(-24x^3y^2) \div (-6x^2y^2) =$ _____

c $15ab \div -15ab =$ _____ **d** $36xy \div 4x =$ _____

e $mn^2 \div mn \div n =$ _____ **f** $15a^2b^2 \div 15abc =$ _____

g $3abc \div bc \div ba =$ _____ **h** $(-16x^2y) \div (-8xy) =$ _____

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Topic 4: Multiplication and division of pronumerals

Question 1 Multiply the following.

a $8a \times 2a =$ _____

b $5a \times 4a \times 3c =$ _____

c $5a \times 3a =$ _____

d $24a^2 \times 4a \times 3a =$ _____

e $9x \times (-3x) =$ _____

f $6a \times 3a \times (-2a) =$ _____

g $15xy \times 3x^2 =$ _____

h $5y \times (-3y) \times (-y) =$ _____

i $8a \times 3b \times 4a =$ _____

j $8 \times 9a \times a^2 =$ _____

k $ab \times a^2 \times 3a =$ _____

l $3ab \times 3ab \times ab =$ _____

Question 2 Divide the following expressions.

a $15a \div 3a =$ _____

b $(-72a) \div (-8a) =$ _____

c $60p \div 10p =$ _____

d $50ab \div 2ab =$ _____

e $8pq \div (-4p) =$ _____

f $35x^2 \div -5x =$ _____

g $16ab \div (-4a) =$ _____

h $28a^2b \div (-7ab) =$ _____

i $20p \div 5 =$ _____

j $64x^2y^2z^2 \div 16x^2yz =$ _____

k $(-10x) \div (-2x) =$ _____

l $81mn \div (-9m) =$ _____

Question 3 Work out the following divisions.

a $(-27x^2) \div (3x^2) =$ _____

b $15ab \div (-3a^2) =$ _____

c $16xy \div (-16xy) =$ _____

d $35a^2b^2c^2 \div 5abc =$ _____

e $24ab \div 4a \div 2b =$ _____

f $56t^3 \div 8t^2 =$ _____

g $48x^2y^2 \div 4xy \div 3x =$ _____

h $10ab \div -2a =$ _____

i $15xy \div 6xy =$ _____

j $15abc \div -3bc =$ _____

Question 4 Simplify the following expressions.

a $5a \times -3a =$ _____

b $4a \times 5b \times 2c =$ _____

c $8x \times (-7x) =$ _____

d $-8a \times 3a \times -2a =$ _____

e $15a \times (-2ab) =$ _____

f $10x \times 2y \times (-2x) =$ _____

g $18a^2 \times 2ab^2 =$ _____

h $ab \times a^2b^2 \times -ab =$ _____

i $8x \times y \times y^2 =$ _____

j $-5x \times 3xy =$ _____

Question 5 Simplify the following.

a $\dfrac{8x \times 9y}{12xy} =$ _____

b $\dfrac{15a \times 8b}{10ab} =$ _____

c $\dfrac{8a \times 5b}{3a \times 4b} =$ _____

d $\dfrac{(6ab)^2 \times ab}{9a^3b} =$ _____

e $\dfrac{(3a)^2 \times (4b)^2}{24ab} =$ _____

f $\dfrac{(-2x) \times (-3) \times (-5x)}{-6x \times -5} =$ _____

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Topic 5: Indices

Question 1 Simplify the following products.

a $a^2 \times a^3 =$ _____ **b** $6p^2 \times p^3 =$ _____ **c** $y^3 \times y^8 =$ _____

d $m^3 \times m^4 =$ _____ **e** $8a^3 \times 4a^5 =$ _____ **f** $x^7 \times x^5 \times x^3 =$ _____

g $x^5 \times x^7 =$ _____ **h** $9a^2 \times 8a^7 =$ _____ **i** $10p^5 \times 8p^6 =$ _____

j $x^8 \times x^{12} =$ _____ **k** $a^4b^4 \times a^3b^3 =$ _____ **l** $9x^2 \times 4x^5y^5 =$ _____

Question 2 Simplify these divisions.

a $a^{12} \div a^8 =$ _____ **b** $36m^6 \div 9m^4 =$ _____ **c** $20a^8b^7 \div 5a^7b^6 =$ _____

d $a^{15} \div a^7 =$ _____ **e** $k^{15} \div k^{10} =$ _____ **f** $12a^6b^9 \div 6a^4b^4 =$ _____

g $a^{48} \div a^{36} =$ _____ **h** $48a^7 \div 12a^5 =$ _____ **i** $36x^{12}y^8 \div \left(-4x^2y^7\right) =$ _____

j $m^{16} \div m^9 =$ _____ **k** $m^6n^8 \div m^4n^6 =$ _____ **l** $64a^8b^9 \div 8a^6b^7 =$ _____

Question 3 Simplify these expressions.

a $\left(a^2\right)^3 =$ _____ **b** $\left(y^5\right)^4 =$ _____ **c** $\left(8x^2y^3\right)^2 =$ _____

d $\left(m^5\right)^2 =$ _____ **e** $\left(x^3\right)^7 =$ _____ **f** $\left(9ab^2\right)^3 =$ _____

g $\left(x^6\right)^4 =$ _____ **h** $\left(4a^2\right)^3 =$ _____ **i** $\left(5m^4\right)^3 =$ _____

j $\left(a^7\right)^6 =$ _____ **k** $\left(9p^2\right)^2 =$ _____ **l** $\left(10a^3b^3\right)^3 =$ _____

Question 4 Use index laws to simplify the following.

a $a^0 =$ _____ **b** $(2x)^0 =$ _____ **c** $9x^0 =$ _____

d $m^0 =$ _____ **e** $\left(3x^2\right)^0 =$ _____ **f** $2a^0 =$ _____

g $x^0 =$ _____ **h** $(4mn)^0 =$ _____ **i** $(5a)^0 =$ _____

Question 5 Simplify the following.

a $x^{10} \div x^3 =$ _____ **b** $p^6q^3 \div p^2q^2 =$ _____ **c** $a^2 \times \left(a^3\right)^4 =$ _____

d $m^5 \times m^4 =$ _____ **e** $\left(8p^2\right)^2 =$ _____ **f** $x^{12} \div \left(x^2\right)^3 =$ _____

g $6x^2 \times 5x^3 =$ _____ **h** $9m^4 \times m^2n =$ _____ **i** $\left(3x^2\right)^3 \div 9x^3 =$ _____

Question 6 Use index laws to simplify the following.

a $3\left(a^4\right)^3 \times 4a^0 =$ _____ **b** $\left(2ab^2\right)^3 \div 4(ab)^2 =$ _____ **c** $a^{12} \div a^8 \div a^2 =$ _____

d $\left(6a^2\right)^2 \div 4a^3 =$ _____ **e** $(8a)^2 \div (4b)^2 =$ _____ **f** $15ab \times 3a \times b =$ _____

g $\left(x^5\right)^2 \div x^7 =$ _____ **h** $a^3b \times a^2b \times ab =$ _____ **i** $28x^2y \div 7x =$ _____

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Topic 6: Grouping symbols

QUESTION **1** Expand the following expressions.

a $3(x+y) =$ _____ **b** $5(2a+3b) =$ _____

c $4(2a+3) =$ _____ **d** $6(8a-7b) =$ _____

e $8(m+3p) =$ _____ **f** $3(5a-4m) =$ _____

g $5x(x+8) =$ _____ **h** $7(x-5) =$ _____

i $9a(a-2b) =$ _____ **j** $12(2x-3) =$ _____

k $6m(2a+n) =$ _____ **l** $15(3x-7) =$ _____

QUESTION **2** Write these expressions without grouping symbols.

a $-3(x+2) =$ _____ **b** $-5x(2x+1) =$ _____

c $-2(2x-7) =$ _____ **d** $-2x(8x-3y) =$ _____

e $-3(4x-5) =$ _____ **f** $-y(x+y^2) =$ _____

g $-8(8x-9) =$ _____ **h** $-m(3m+8) =$ _____

i $-2x(x+1) =$ _____ **j** $-2n(8-5m) =$ _____

k $-3x(2x+5) =$ _____ **l** $-6t(2t-3) =$ _____

QUESTION **3** Expand the following expressions.

a $5(2x+7) =$ _____ **b** $7(3x-11) =$ _____

c $-3(4x-9) =$ _____ **d** $-4(2x+5) =$ _____

e $8(6y+3) =$ _____ **f** $-3a(5a+5) =$ _____

g $-x(2x+7) =$ _____ **h** $-m(8m-5) =$ _____

i $-2t(3t+5) =$ _____ **j** $8a(2a+3b) =$ _____

k $-8x(3x-5) =$ _____ **l** $6p(2p-3m) =$ _____

QUESTION **4** Expand and simplify.

a $2(x+3)+5x =$ _____ **b** $4(y+3)+7y+5 =$ _____

c $5(xy-7)-3xy =$ _____ **d** $9(p-7)-8p-7 =$ _____

e $4y(y+3)-2y^2 =$ _____ **f** $8x-3(x-2) =$ _____

g $9p-3(8-p) =$ _____ **h** $5m+4(m-4) =$ _____

i $9m(2m+1)-10m^2 =$ _____ **j** $7(x-5)-3x+9 =$ _____

k $8(t-3)-3t =$ _____ **l** $6(x+8)-3(x-2) =$ _____

QUESTION **5** Expand and simplify.

a $4(m+3)+2(m+1) =$ _____ **b** $5(x+3)-3(x-1) =$ _____

c $8(2x+7)+3(x+2) =$ _____ **d** $8(2x+7)-4(2x-5) =$ _____

e $5(y+7)-2(y-1) =$ _____ **f** $9(3x+1)-5(2x-3) =$ _____

g $7(n-4)-2(n+2) =$ _____ **h** $x(2x+3)-3(x+1) =$ _____

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Topic 7: Substitution

Question 1 If $m = 7$, $n = 4$ and $p = 12$, evaluate the following.

a $mn =$ _____ **b** $mnp =$ _____

c $mn \div p =$ _____ **d** $m^2n^2 =$ _____

e $mnp^2 =$ _____ **f** $m^2 + n^2 + p^2 =$ _____

g $m + n + p =$ _____ **h** $7m - p =$ _____

i $m^2 - 5p =$ _____ **j** $m^2 + 10 + p =$ _____

k $mn^2p - mn =$ _____ **l** $8m^2 - 12 =$ _____

Question 2 If $a = 4$, find the value of the following expressions.

a $5a + 7 =$ _____ **b** $(a - 5)^2 =$ _____

c $a^2 - 9 =$ _____ **d** $85 - 4a =$ _____

e $3a(a + 4) =$ _____ **f** $5a^2 + 8 =$ _____

g $5(a + 6) =$ _____ **h** $a^3 =$ _____

i $\sqrt{25 - a^2} =$ _____ **j** $3(2a + 7) =$ _____

k $3a^2 =$ _____ **l** $(a + 7)(a - 7) =$ _____

Question 3 If $x = 7.2$, $y = 3.5$ and $z = 6.4$, evaluate each expression correct to 1 decimal place.

a $x + y =$ _____ **b** $x + y + z =$ _____

c $2x + 2y + 2z =$ _____ **d** $x^2 + y^2 - z^2 =$ _____

e $(x + y)^2 =$ _____ **f** $3xyz =$ _____

g $x^3 + x^2 =$ _____ **h** $\sqrt{xy} =$ _____

i $(x - z) \div y =$ _____ **j** $\sqrt{x + y + z} =$ _____

k $(x - z) + 8 =$ _____ **l** $\frac{xy}{z} =$ _____

Question 4 If $a = 3$, $b = 4$, $c = 5$ and $d = 6$, find the value of each expression.

a $6c^2 - ab =$ _____ **b** $a^2 + b^2 + c^2 =$ _____

c $abcd =$ _____ **d** $ab - cd =$ _____

e $b^2 + c^2 - a^2 =$ _____ **f** $b^2 - 5 =$ _____

g $6ab + 7bc =$ _____ **h** $a^2 + b^2 - cd =$ _____

i $3abc \div d =$ _____

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Topic 8: Common factors

Question 1 Factorise the following by taking out the highest common factor.

a $7x + 7 =$ _____ **b** $10a - 2 =$ _____ **c** $7y + 14 =$ _____

d $8x - 4 =$ _____ **e** $3a + 15 =$ _____ **f** $4x - 12y =$ _____

g $3y + 3 =$ _____ **h** $5m + 30 =$ _____ **i** $32x - 28 =$ _____

j $5a - 5 =$ _____ **k** $6a - 2b =$ _____ **l** $5a + 35 =$ _____

Question 2 Factorise the following.

a $y^2 + 3y =$ _____ **b** $6y^3 - 3y^2 =$ _____ **c** $6x^3 - 3x^2 =$ _____

d $2m^2 + 6m =$ _____ **e** $8a^2 - 4a =$ _____ **f** $m^2 - 9m =$ _____

g $8a^2 + 24a =$ _____ **h** $15y^2 - 6y =$ _____ **i** $16a^2 - 8a =$ _____

j $x^2 + 9x =$ _____ **k** $9a^3 - 6a^2 =$ _____ **l** $28x^2 - 7x =$ _____

Question 3 Factorise the following by taking out the highest common factor.

a $-3x - 3 =$ _____ **b** $-4y^2 + 16 =$ _____ **c** $-6n - 3 =$ _____

d $-5x - 40 =$ _____ **e** $-3x + 27 =$ _____ **f** $-7t - 14 =$ _____

g $-2m^2 - 4 =$ _____ **h** $-5m^2 + 35 =$ _____ **i** $-11x^2 - 22 =$ _____

j $-6a^2 + 12 =$ _____ **k** $-8a^2 - 32 =$ _____ **l** $-13y + 39 =$ _____

Question 4 Factorise.

a $-6x^2 - 12x =$ _____ **b** $-16x^2 - 4x =$ _____ **c** $-6x - 9 =$ _____

d $-8xy - 4y =$ _____ **e** $-9x^3 + 27x^2 =$ _____ **f** $-15x^2 - 5xy =$ _____

g $-6mn - 3 =$ _____ **h** $-5x^2y^2 + 25xy =$ _____ **i** $-6mn + 15m^2 =$ _____

j $-8xyz + 4xy =$ _____ **k** $-9x^2 - 15x =$ _____ **l** $-x - 3yx =$ _____

Question 5 Factorise the following.

a $8a + 16b =$ _____ **b** $5a - 25 =$ _____ **c** $8x - 4y =$ _____

d $9a - 9b =$ _____ **e** $8 - 8t =$ _____ **f** $m^3 - 4m^2 =$ _____

g $16ab - a^2 =$ _____ **h** $14m - 7 =$ _____ **i** $16ab - 8a^2b =$ _____

j $15x^2y^2 - 5xy =$ _____ **k** $-6m - 36 =$ _____ **l** $-4m - 12n =$ _____

Question 6 Factorise the following.

a $3a + 3b + 3c =$ _____ **b** $16pq - 7p =$ _____ **c** $-x^2 - 7x =$ _____

d $8x + 8y - 16z =$ _____ **e** $tx - x =$ _____ **f** $15a + 5b - 10c =$ _____

g $4x - 8y =$ _____ **h** $y^3 - y^2 =$ _____ **i** $18x - 9y + 6 =$ _____

j $16x - 32y =$ _____ **k** $15mn - 3n =$ _____ **l** $6a^2 + 3a + 9 =$ _____

m $m^2 - 2mn =$ _____ **n** $8pq - q^2 =$ _____ **o** $-6x - 6xy - 12 =$ _____

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Basic algebra

Topic 9: Addition and subtraction of algebraic fractions

Question 1 Find the sum of these algebraic fractions.

a $\frac{x}{8}+\frac{x}{8}=$ _____ **b** $\frac{3x}{5}+\frac{2x}{5}=$ _____ **c** $\frac{9x}{15}+\frac{8x}{15}=$ _____

d $\frac{a}{9}+\frac{a}{9}=$ _____ **e** $\frac{x}{7}+\frac{x}{7}=$ _____ **f** $\frac{y}{6}+\frac{y}{6}=$ _____

g $\frac{x}{3}+\frac{x}{4}=$ _____ **h** $\frac{a}{9}+\frac{2a}{7}=$ _____ **i** $\frac{3a}{7}+\frac{a}{2}=$ _____

j $\frac{3x}{5}+\frac{5x}{7}=$ _____ **k** $\frac{2m}{3}+\frac{5m}{9}=$ _____ **l** $\frac{2a}{5}+\frac{3a}{7}=$ _____

Question 2 Subtract the following algebraic fractions.

a $\frac{2a}{3}-\frac{a}{3}=$ _____ **b** $\frac{5x}{7}-\frac{3x}{7}=$ _____ **c** $\frac{15y}{11}-\frac{5y}{11}=$ _____

d $\frac{6m}{13}-\frac{2m}{13}=$ _____ **e** $\frac{5p}{24}-\frac{p}{8}=$ _____ **f** $\frac{8x}{15}-\frac{3x}{15}=$ _____

g $\frac{x}{3}-\frac{x}{7}=$ _____ **h** $\frac{x}{8}-\frac{x}{12}=$ _____ **i** $\frac{y}{12}-\frac{y}{18}=$ _____

j $\frac{3x}{20}-\frac{x}{10}=$ _____ **k** $\frac{2a+1}{7}-\frac{a}{14}=$ _____ **l** $\frac{5x+1}{4}-\frac{x}{12}=$ _____

Question 3 Simplify the following.

a $\frac{3x}{2}+\frac{5x}{3}=$ _____ **b** $\frac{x}{4}-\frac{x}{5}=$ _____ **c** $\frac{x}{2}+\frac{x}{4}=$ _____

d $\frac{x}{8}-\frac{x}{4}=$ _____ **e** $\frac{x}{2}+\frac{5x}{6}=$ _____ **f** $\frac{3x}{4}-\frac{x}{12}=$ _____

g $\frac{2x}{9}+\frac{x}{3}=$ _____ **h** $\frac{7x}{8}-\frac{x}{12}=$ _____ **i** $\frac{7x}{10}+\frac{x}{25}=$ _____

j $\frac{5x}{24}-\frac{x}{36}=$ _____ **k** $\frac{5x}{8}-\frac{x}{4}+\frac{x}{16}=$ _____ **l** $\frac{m}{10}+\frac{7m}{5}-\frac{2m}{25}=$ _____

Question 4 Find answers to the following.

a $\frac{8p}{9}-\frac{p}{3}=$ _____ **b** $\frac{8y}{2}+\frac{7y}{4}-\frac{y}{8}=$ _____

c $\frac{8a}{15}+\frac{a}{30}=$ _____ **d** $\frac{7x}{10}-\frac{x}{5}+\frac{2x}{15}=$ _____

e $\frac{8a}{7}+\frac{3a}{14}=$ _____ **f** $\frac{6m}{7}+\frac{m}{14}-\frac{2m}{21}=$ _____

g $\frac{8x}{9}-\frac{x}{3}+\frac{2x}{15}=$ _____ **h** $\frac{9m}{2}+\frac{6m}{4}-\frac{m}{16}=$ _____

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Basic algebra

Topic 10: Multiplication and division of algebraic fractions

Question 1 Find the products of these algebraic fractions.

a $\frac{a}{3} \times \frac{a}{4} =$ _____

b $\frac{x}{5} \times \frac{y}{6} =$ _____

c $\frac{m}{2} \times \frac{m}{3} =$ _____

d $\frac{p}{4} \times \frac{p}{8} =$ _____

e $\frac{a}{6} \times \frac{3}{x} =$ _____

f $\frac{15}{m} \times \frac{n}{5} =$ _____

g $\frac{5x}{3} \times \frac{15}{2x} =$ _____

h $\frac{x}{5} \times \frac{25}{x^2} =$ _____

i $\frac{8}{x^2} \times \frac{x}{16} =$ _____

j $\frac{2x}{y} \times \frac{y^2}{3x} =$ _____

k $\frac{ab}{4} \times \frac{16}{a^2b} =$ _____

l $\frac{5}{xy} \times \frac{y}{25} =$ _____

Question 2 Divide the following algebraic fractions.

a $\frac{m}{2} \div \frac{m}{5} =$ _____

b $\frac{y}{7} \div \frac{3y}{14} =$ _____

c $\frac{p}{8} \div \frac{8p}{15} =$ _____

d $\frac{x}{3} \div \frac{2x}{5} =$ _____

e $\frac{5}{n} \div \frac{16}{n} =$ _____

f $\frac{2a}{5} \div \frac{4}{a} =$ _____

g $\frac{ab}{6} \div \frac{a^2}{12} =$ _____

h $\frac{x^2y^2}{9} \div \frac{xy}{27} =$ _____

i $\frac{3x}{4y} \div \frac{9x}{24y} =$ _____

j $\frac{5a}{7} \div \frac{16a}{8} =$ _____

k $\frac{6a}{11} \div \frac{5a}{3} =$ _____

l $\frac{ab}{5} \div \frac{ac}{15} =$ _____

Question 3 Simplify the following.

a $\frac{2x}{5} \times \frac{7x}{8} =$ _____

b $\frac{8x}{13} \div \frac{16x}{26} =$ _____

c $\frac{a}{b} \div \frac{b}{a} =$ _____

d $\frac{3a}{5} \div \frac{4a}{9} =$ _____

e $\frac{9a}{10} \div \frac{27a}{20} =$ _____

f $\frac{m}{n} \div \frac{m}{l} =$ _____

g $\frac{15m}{17} \div \frac{16m}{34} =$ _____

h $\frac{5a}{8} \div \frac{6a^2}{10} =$ _____

i $\frac{x}{y} \div \frac{x}{y} =$ _____

j $\frac{7y^2}{8} \div \frac{14y}{12} =$ _____

k $\frac{a^2b}{10} \div \frac{ab}{20} =$ _____

l $\frac{x^3}{y^3} \div \frac{x^2}{y^2} =$ _____

Question 4 Find answers to the following.

a $\frac{6mn}{15} \div \frac{m^2}{20} =$ _____

b $\frac{m}{8} \div \frac{m^3}{32} =$ _____

c $\frac{abc}{14} \div \frac{ab}{7} =$ _____

d $\frac{3m}{4} \div \frac{27m}{16} =$ _____

e $\frac{mn^2}{6p^2} \div \frac{m^2n^2}{12p} =$ _____

f $\frac{3x}{y} \div \frac{4x}{y^2} =$ _____

g $\frac{a^2}{b^2} \times \frac{b^3}{a^3} =$ _____

h $\frac{ab^2}{c} \times \frac{c^2}{a^3b^3} =$ _____

i $\frac{3xy}{5} \times \frac{20}{x^2y^2} =$ _____

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Topic 11: Problem solving and algebra

QUESTION **1** Add the following expressions.

a $3x + 8x =$ _____ **b** $5x + 11x =$ _____

c $9x + 7x =$ _____ **d** $18x + 9x =$ _____

e $16x + 25x =$ _____ **f** $30x + 14x + x =$ _____

g $6xy + 8xy =$ _____ **h** $9mn + 11nm =$ _____

i $15a + 16a + 7a =$ _____ **j** $8x + 3x + 7x =$ _____

k $15a^2 + 26a^2 + a^2 =$ _____ **l** $7p + 6p + 5p + p =$ _____

QUESTION **2** Subtract the following expressions.

a $6a - 2a =$ _____ **b** $15a - 7a =$ _____

c $8a - 3a =$ _____ **d** $17x - 2x =$ _____

e $14m - 6m - m =$ _____ **f** $8y - 3y - y =$ _____

g $15x - 7x - 2x =$ _____ **h** $6xy - 3xy - xy =$ _____

i $25x^2 + 7x^2 - 4x^2 - 6x^2 =$ _____ **j** $14y - 3y - y - 2y =$ _____

k $8x - 2x - x =$ _____ **l** $19p - 3p - 5p =$ _____

QUESTION **3** Simplify the following expressions by adding or subtracting.

a $8a + 7a - 3a =$ _____ **b** $5x + 6x - x - 2x =$ _____

c $5a + 15a - 6a =$ _____ **d** $8a + 5a + 3a - 2a =$ _____

e $19xy + 2xy - xy =$ _____ **f** $7mn + 3nm - 2mn =$ _____

g $9x^2 + 8x^2 - 3x^2 - 5x^2 =$ _____ **h** $9a^2 + 7a^2 - a^2 - 2a^2 =$ _____

i $5x - 2x + 3x - x =$ _____ **j** $8t + 6t + 3t - t =$ _____

k $6m + 7m - 2m - m =$ _____ **l** $8a + 16a - 5a - 7a =$ _____

QUESTION **4** Simplify the following.

a $9x + 3y - 6x + 2y =$ _____ **b** $20a + 3b + 8b - 11a =$ _____

c $6m + 3n - n - m =$ _____ **d** $6x^2 - 4x^2 - x^2 + 3x^2 =$ _____

e $8a + 3b + 2b - 6a =$ _____ **f** $10a + 4a - 5b - b =$ _____

g $7y + 8y - 3x - 4x =$ _____ **h** $6xy + 3yx - xy - 2yx =$ _____

QUESTION **5** Simplify the following expressions.

a $15 - 8x + 7 - 2x =$ _____ **b** $8m + 3n - 5m =$ _____

c $18x - 3y + y + x =$ _____ **d** $2x^2 + 9x^2 - 7y^2 =$ _____

e $10m + 3n - 2m - n =$ _____ **f** $19xy + 6yz - 13yx =$ _____

g $12a + 6b - 3a =$ _____ **h** $6a + 9b - 3b - 3a =$ _____

i $9t + 18 - 3t - 15 =$ _____ **j** $6ab + 3ba + 9ab =$ _____

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Basic algebra

Topic Test — PART A

Instructions This part consists of 12 multiple-choice questions
Each question is worth 1 mark
Fill in only ONE CIRCLE for each question
Calculators are NOT allowed

Time allowed: 15 minutes **Total marks = 12**

Marks

1 If $a = -4$ and $b = 3$ the value of a^2b is

Ⓐ 48 Ⓑ 144 Ⓒ −24 Ⓓ −48 **1**

2 $a^3 + a^3 =$

Ⓐ a^6 Ⓑ a^3 Ⓒ $2a^6$ Ⓓ $2a^3$ **1**

3 $15x^8 \div 5x^4 =$

Ⓐ $3x^4$ Ⓑ $3x^2$ Ⓒ $10x^4$ Ⓓ $10x^2$ **1**

4 $2a \times 3a \times 4a =$

Ⓐ $9a$ Ⓑ $9a^3$ Ⓒ $24a$ Ⓓ $24a^3$ **1**

5 $\frac{1}{x} \div \frac{1}{y} =$

Ⓐ $\frac{1}{xy}$ Ⓑ $\frac{y}{x}$ Ⓒ $\frac{x}{y}$ Ⓓ xy **1**

6 $3x - (-x) =$

Ⓐ 3 Ⓑ $3x$ Ⓒ $3x^2$ Ⓓ $4x$ **1**

7 $3y^2 - 2y + 5y + 4y^2 =$

Ⓐ $7y^2 + 3y$ Ⓑ $7y^2 - 7y$ Ⓒ $7y^3 + 3y$ Ⓓ $7y^4 - 7y$ **1**

8 $7t^3 \times (-4t^2) =$

Ⓐ $3t^5$ Ⓑ $3t^6$ Ⓒ $-28t^5$ Ⓓ $-28t^6$ **1**

9 $3(x + 4) - x =$

Ⓐ 12 Ⓑ 15 Ⓒ $2x + 4$ Ⓓ $2x + 12$ **1**

10 $\left(4x^3\right)^2 =$

Ⓐ $4x^5$ Ⓑ $4x^6$ Ⓒ $16x^5$ Ⓓ $16x^6$ **1**

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Marks

11 $\frac{6a^2}{2ab} =$

Ⓐ $3ab$ Ⓑ $\frac{3a}{b}$ Ⓒ $6b$ Ⓓ $\frac{6}{b}$ **1**

12 $3ab - b + ab - 2b =$

Ⓐ $2ab - b$ Ⓑ $2ab - 3b$ Ⓒ $4ab - b$ Ⓓ $4ab - 3b$ **1**

13 $\frac{x^4 \times x^6}{x^2} =$

Ⓐ x^5 Ⓑ x^8 Ⓒ x^{12} Ⓓ x^{22} **1**

14 $\left(y^6 \div y^2\right)^2 =$

Ⓐ y^5 Ⓑ y^6 Ⓒ y^8 Ⓓ y^9 **1**

15 The correct factorisation of $2ab - a$ is

Ⓐ $2a(b - 1)$ Ⓑ $2a(b - a)$ Ⓒ $a(2b - 1)$ Ⓓ $a(2b - a)$ **1**

Total marks achieved for PART A **/15**

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Basic algebra

Topic Test — PART B

Instructions This part consists of 15 questions
Each question is worth 1 mark
Write answers in the answers-only column

Time allowed: 20 minutes **Total marks = 15**

Questions	Answers only	Marks
1 Simplify $3y - 4y - y$	_____	1
2 Simplify $6a^2 \times a$	_____	1
3 Factorise $7x + 14y$	_____	1
4 If $\frac{x}{4} = 11$ find x	_____	1
5 Expand $3x(2x - 5y)$	_____	1
6 If $a = 3$, $b = -2$ and $c = 0$, find the value of $3a + 2b - c$	_____	1
Simplify the following.		
7 $\frac{6x^3}{x^2}$	_____	1
8 $\left(3a^2b\right)^2$	_____	1
9 $\sqrt{49x^2}$	_____	1
10 $36m^3 - 12m^3$	_____	1
11 $\frac{8a}{9} - \frac{3a}{9}$	_____	1
12 $\frac{3x+5}{4} + \frac{x}{4}$	_____	1
13 $\frac{xy}{3} \times \frac{9}{xy}$	_____	1
14 $\frac{4a}{5} \div \frac{a}{10}$	_____	1
15 $3(a-4) + 4(a+2b)$	_____	1

Total marks achieved for PART B 15

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Basic algebra

Topic Test — PART C

Instructions This part consists of 4 questions
Each question is worth 5 marks
Show all necessary

Time allowed: 20 minutes **Total marks = 20**

Questions **Marks**

1 If $a = 2$, $b = -4$ and $c = -6$, find the value of each expression.

a abc _____ **b** $5(a + b + c)$ _____

c $5ab^2$ _____ **d** $3ab + 2c$ _____

e $a^2 + b^2 - c^2$ _____ **5**

2 Simplify.

a $-7a + 6a + 4a$ _____ **b** $6a + 5(3 - a)$ _____

c $-8(2a + 3b) + a$ _____ **d** $\frac{9}{a} - \frac{5}{a}$ _____

e $\frac{3x}{5} + \frac{2x}{17}$ _____ **5**

3 Expand and simplify.

a $9x - 3(x + 5)$ _____

b $x(3x - 2) - 3(x^2 - x)$ _____

c $25 - (x + 17)$ _____

d $-9(x - y) + 3(2x - y)$ _____

e $-6(a + 2b) - 2(b - a)$ _____ **5**

4 Factorise.

a $3x - x^2$ _____ **b** $3p^2q + 12pq^2$ _____

c Solve $3(x - 1) = 6$ _____

Simplify the following.

d $5p^2 \times q^5 \times pq$ _____

e $\frac{15a^3b^2}{8ac^2} \div \frac{25ab}{(2c)^2}$ _____ **5**

Total marks achieved for PART C 20

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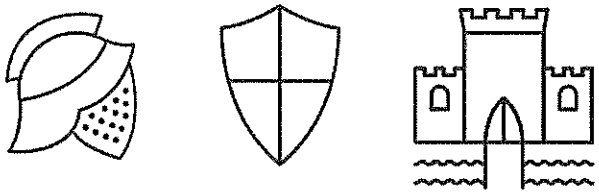


Year 8 History
Medieval Europe

This booklet contains:

- A copy of your History Assessment task + a scaffold sheet to help with the task
- A 'Medieval Europe Extension Grid'. This has a selection of activities you can complete to enhance your understanding of our Medieval Europe topic.
- Reading and activities to complete on the Crusades.
- Reading and activities to complete on Heraldry.
- A revision and literacy activity.

HSIE Faculty

Year 8 Assessment Task 1

Term 1 2020

STUDENT NAME	CLASS

DETAILS	
Topic: Medieval Europe	
Date of issue: Term 1, Week 7 Thursday 12 March o Period 3 (8A, 8D, 8E and 8G)	**Due date: Term 1, Week 11** Monday 6 April – must be received by 3pm
Type of task: Microsoft Powerpoint presentation (upload file to Microsoft Teams to submit)	

TASK DESCRIPTION

This term in History, you have been studying the topic *Medieval Europe*.

In this unit you have been learning about the key features of the medieval world and how significant people, groups and ideas from this period have influenced the world today.

For your assessment task, you are required to investigate and assess the role of a significant medieval individual and submit a Powerpoint presentation on your chosen individual.

You will be given time during lessons in Week 8 to complete your research, however, some time will need to be spent at home completing your work.

You will select ONE of the medieval individuals from the list below:

- Charlemagne
- Eleanor of Aquitaine
- William Wallace
- Richard the Lionheart
- Johann Gutenberg
- Joan of Arc
- Saladin
- Hildegard of Bingen
- Kublai Khan
- Leif Erikson
- Geoffrey Chaucer
- Isabella of France
- Marco Polo

In your Powerpoint presentation you are required to:

- Provide detailed information about your chosen individual.
- Make an assessment of your chosen individual:
  - What were their achievements?
  - How did they influence the medieval world?
  - How have they influenced the world today?

Your Powerpoint presentation must include the following parts:

- 10-12 slides that contain detailed information in your own words (not 'copy & pasted'), relevant images and/or maps.
- Each slide will contain 60-80 words.
- Information from a range of sources. These can include websites, books, articles, documentaries you have viewed.
- A Bibliography - list of **all** sources used (including images).

NESA TERMINOLOGY

Assess -make a judgement of value, quality, outcomes, results or size

Describe - provide characteristics and features

Explain - relate cause and effect; make the relationships between things evident; provide why and/or how

Investigate – plan, inquire into and draw conclusions about

MARKING CRITERIA

You will be assessed on how well you:

- describe and assess your chosen medieval individual
- demonstrate your use of a range of sources
- present a logical and cohesive Powerpoint presentation using appropriate historical terms and concepts

OUTCOMES TO BE ASSESSED

HT4-3 describes and assesses the motives and actions of past individuals and groups in the context of past societies

HT4-8 locates, selects and organises information from sources to develop an historical inquiry

HT4-9 uses a range of historical terms and concepts when communicating an understanding of the past

HT4-10 selects and uses appropriate oral, written, visual and digital forms to communicate about the past

SUBMISSION INSTRUCTIONS

You are to submit your assessment task by uploading it to your teacher by due date that relates to your class. Any submissions after this time will be considered to be late.

You are required to submit your assessment task in Microsoft Teams. You will be taught how to use the software to upload the task in Microsoft Powerpoint format.

What do I do if I am absent?

If you are absent the day of an assessment task or examination, you MUST:

- report to the teacher or head teacher of the faculty on the first day of return to school
- supply a suitable explanation e.g. letter, doctor's certificate

The Head Teacher will decide and advise you whether:

- you will sit for a substitute task, OR
- can submit the task late, OR
- be given an estimate, OR
- the task will be recorded as a Non-Attempt

Outcomes	Historical Knowledge and Understanding/Skills				
	A	B	C	D	E
HT4-3 describes and assesses the motives and actions of past individuals and groups in the context of past societies	• Sophisticated and detailed description of motives and actions of the chosen medieval individual • Makes a reasoned assessment of the motives and actions of individual	• Detailed description and assessment of motives and actions of the chosen medieval individual • Makes an assessment of the motives and actions of individual	• Sound description of motives and actions of the chosen medieval individual • Attempts to assess motives and actions of individual	• Basic description of motives and actions of the chosen medieval individual	• Simple comments about chosen individual
HT4-8 locates, selects and organises information from sources to develop an historical inquiry	• Demonstrates the use of several sources in a formatted bibliography	• Demonstrates the use of more than one source in a formatted bibliography	• Demonstrates the use of more than one source in a bibliography	• Demonstrates limited use of sources	• No bibliography/reference to sources used
HT4-9 uses a range of historical terms and concepts when communicating an understanding of the past	• Demonstrates an outstanding use of a range of historical terms and concepts	• Demonstrates a high use of a range of historical terms and concepts	• Demonstrates a sound use of some historical terms and concepts	• Demonstrates the use of some of historical terms and concepts	• Demonstrates a limited use of historical terms and concepts

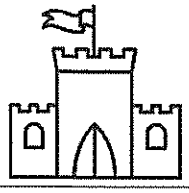
	A	B	C	D	E
HT4-10 selects and uses appropriate oral, written, visual and digital forms to communicate about the past	• Demonstrates outstanding presentation of historical information in appropriate digital form • Detailed, relevant information and images and for inquiry	• Demonstrates high level of presentation of historical information in appropriate digital form • Relevant information and images and graphs for inquiry	• Demonstrates sound presentation of historical information in appropriate digital form • Some relevant information and images for inquiry	• Demonstrates basic presentation of historical information in appropriate digital form • Basic information and images used	• Demonstrates limited presentation of historical information in digital form • Limited information and images used.

Comments:

Overall grade:

FEEDBACK
Areas where you have performed well: • • •
Areas where you need to improve: • • •
Strategies to help you improve: • • •

History Task 1 Scaffold



1. Select a medieval individual from the Assessment Task sheet.
2. Find some websites that contain relevant information about your individual.
3. Use the table below to record the details of the websites you have used.

URL (website address)	Date viewed	What this website is most useful for

Use the scaffold below as a guide to help order your thoughts and create structure in your Powerpoint presentation.

Slide 1: Title & image/s	Slide 2: Between which years did your individual live? Introduce them.	Slide 3: What was medieval society like at the time they lived?
Slide 4: Map/images of medieval society.	Slide 5: What is your individual known for/ what did they do?	Slide 6: What is your individual known for/ what did they do? (include some images, or a reference to a source)
Slide 7: What is your individual known for/ what did they do?	Slide 8: How did your individual influence the medieval world?	Slide 9: How did your individual influence the medieval world?
Slide 10: How has your individual influenced the world today? (Why do we remember them?)	Slide 11: How has your individual influenced the world today? (Why do we remember them?)	Slide 12: Bibliography

What does a bibliography look like?

When you publish your research, it is important to include a bibliography. A bibliography tells your reader what sources you have used. It lists all the books, websites and other references you used to inform your work.

Websites

Include the author's name, the complete date, the title of the web page, and the words "retrieved from" followed by the web address. The format is as follows: Author, A. A. (Year, Month day). Title of web page/document. Retrieved from http://URL to specific page.

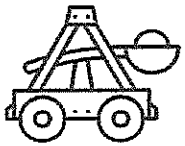
- For example, a cited website might look like this: Quarry, R. R. (May 23, 2010). *Medieval World.* Retrieved from http://medievalworld.com.
- If no author is available, just start with the title. If no date is available, write "n.d."

Books

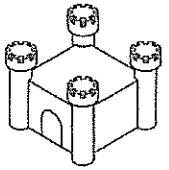
Start with the author's name, followed by the publication year, the title of the book in italics, the location of the publisher, and finally the name of the publisher. The format is as follows: Author, A. A. (Year). *Title of book.* Location: Publisher.

- Example: Worden, B. L. (1999). *Medieval History*. New York, New York: One Two Press.

You are required to create a detailed bibliography on the final slide of your presentation.



Medieval Europe Extension Grid



Crusaders Create an annotated timeline of the Crusades	**Modern code of chivalry** Conduct research on the medieval code of chivalry, then devise a modern code of chivalry.	**Medieval mindfulness** Design a 'Medieval Europe' colouring page	**How to become a knight** Write a procedure that describes how to become a knight in the Middle Ages
What's in a name? Medieval surnames had an important meaning attached to them. Make a list of some common medieval surnames and explain their meaning	**1066** Write the script for a documentary that describes what happened at the Battle of Hastings	**@WilliamtheConqueror** Design a social media profile for William of Normandy	**Medieval jobs** Find out what the following medieval occupations were: Thatcher, reeve, miller, steward, swineherd, hayward, bailiff, parish priest
Medieval Food Prepare the menu for a medieval banquet	**The Dome of the Rock, Jerusalem** Write a newspaper article that explains why Christians, Muslims and Jews continue to regard the Dome of the Rock as a sacred place	**Medieval vocabulary** Create an A-Z vocabulary list for the Medieval Europe topic	**Castle builder** Design your own medieval castle. You could sketch and label it on paper, or create a model using recycled materials
It could always be worse! Find out about medieval school life. Use a venn diagram to show the similarities and differences between a medieval school day and your own	**Medieval art** Create a collage of medieval art, and give details for each of the images	**The Domesday Book (pron "Doomsday")** Find out what the Domesday book was. What information did it contain? Explain how it could be useful to historians?	Conduct an internet search using the term 'medieval chant' and listen to some recordings of the types of chants sung in churches and monasteries in the middle ages. What did this style of chanting come to be known as and why?
Make it comical Study an image of the Bayeux tapestry and turn it into a comic strip	**Tournament** Research the public spectacle of the tournament. Describe what happened at this event	**Minecraft** Create your own medieval village using Minecraft	**FREE CHOICE**

Achieve!

What were the Crusades?

The Crusades were attempts by **Christians** from Western Europe to reclaim the **Holy Land** from the **Muslims**. Muslims are people who practise the religion of Islam. In total, there were eight crusades. The Crusades began in 1096 CE.

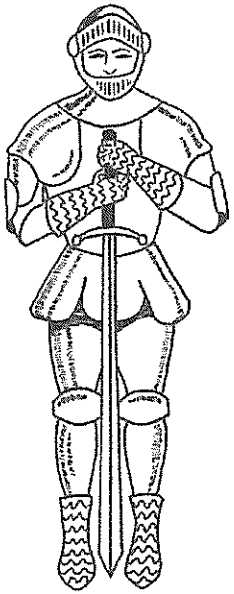
The Holy Land is centred on the city of **Jerusalem**. Jerusalem is an important place for both Christians and Muslims. For Christians, it is the place where Jesus Christ was crucified and resurrected. For Muslims, it is where the prophet Mohammed went on a spiritual journey to heaven.

For centuries, Jerusalem had been conquered, destroyed, rebuilt and settled by many different nations. In the 7th century CE, it was claimed by Muslim armies.

The Muslims allowed Christians to visit the Holy Land, mainly because it was good for trade. However, the Muslim armies did not always treat the Christian **pilgrims** (travellers) well.

The Catholic Church became angry that the Holy Land was not in their control. They did not like the Muslim religion. Also, they were worried that Muslim power would spread.

In 1095 CE, Pope Urban II encouraged Christians to take back the Holy City. The following year, tens of thousands of Christians set off from Western Europe towards Jerusalem. There were many knights, as well as many peasants. During this first crusade, the Christians took back the city of Jerusalem, but they could not capture all of the Holy Land around it.



Some time later, the Christians again lost Jerusalem to the Muslims. A second crusade was ordered. There were many battles and millions of people died, but the Christians never again regained control of the Holy Land. The last crusade ended in 1291.

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Achieve!

The Crusades

☞ Read the Resource sheet 'What were the Crusades?'. Then complete the activities below.

1 Match the sentence starter with the correct ending, by drawing a line between the two.

a) The Crusades were	a series of wars between England and France.
	a celebration of medieval bravery.
	a series of wars started by Christians, aimed at reclaiming the Holy Land.
b) The first crusade	began in 1189.
	began in 1096.
	ended in 1202.
	ended in 1192.
c) The most important part of the Holy Land was the city of	Paris.
	London.
	Jerusalem.
	Egypt.
d) The Crusaders were	Christian.
	Muslim.
	English.

2 Give one reason why the Christians embarked on the Crusades.

_____

3 Would you say that the Crusades were successful or not? Why?

_____

_____

_____

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Achieve!

Famous crusading orders

☞ 1 Fill in the blanks with the correct words from the word bank.

	Word bank
An 'order' was a group of Christian knights. These knights were not only trained in military skills, but they were also members of the Catholic Church. The knights protected Christian _____ travelling to the _____ Land. They also fought to reclaim the area. Knightly orders started with the _____.	Crusades Holy pilgrims
Before _____ set off for the Holy Land, they were given a cross made from red cloth. The _____ was sewn onto their tunics. It showed that they were working on behalf of the Catholic Church and _____.	God knights cross
There were _____ important _____ that took part in the Crusades: • the Knights Templar • the _____ Hospitaller • the Teutonic Knights.	Knights orders three
The Knights Templar was the largest and most famous of the _____ orders. These knights were both soldiers and monks. They were known to be fierce fighters, but they had also chosen to live a poor and simple life and to obey the _____ Church. Their mission was to regain control of the Holy Land and protect all _____ pilgrims.	Christian knightly Catholic
The Knights Hospitaller was another important knightly order. This order was originally created to care for the wounded knights during the first _____. The Knights _____ joined forces with the Knights Templar to form the backbone of the Crusading _____. The Knights Hospitaller fought hard against Muslim advancement through the Mediterranean.	Army Hospitaller crusade
The Teutonic Knights was a _____ knightly order. It was originally a part of the Knights Hospitaller, but some knights left to form their own _____.	order German

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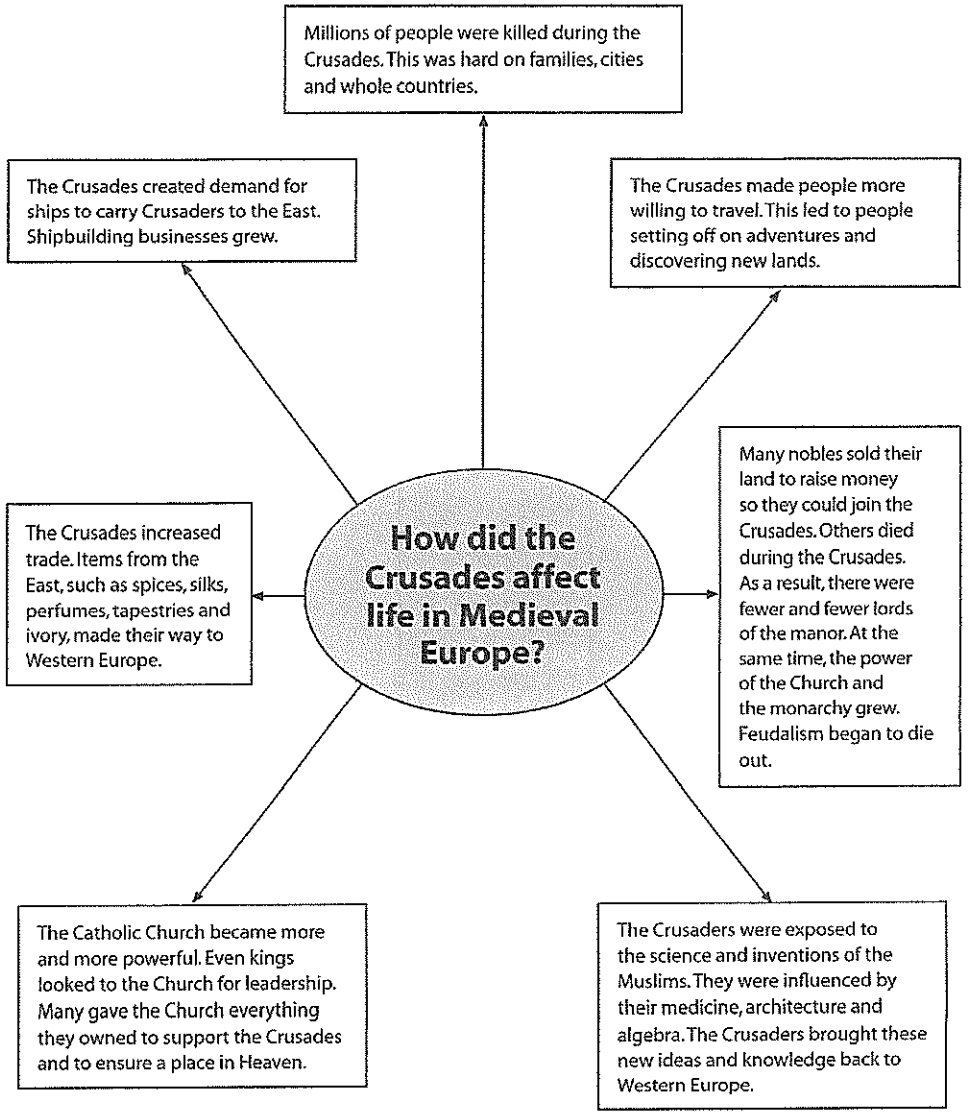
Achieve!

Effects of the Crusades

The Crusades had both negative and positive effects on life in Medieval Europe.



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The Crusades – a legacy

☞ The Resource sheet 'Effects of the Crusades' shows seven main effects of the Crusades. Each of these effects had its good points and its bad points.

1 With a partner, fill in the table below.

Effect	One positive thing about this was ...	One negative thing about this was ...
Millions of people died		
People began to set off on adventures and discovered new lands		
Feudalism began to die out		
The power of the Catholic Church increased		
The science and inventions of the Muslim world made their way to the West		
The Crusades increased trade with Eastern countries		
The shipbuilding industry grew		

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Achieve!

Heraldry

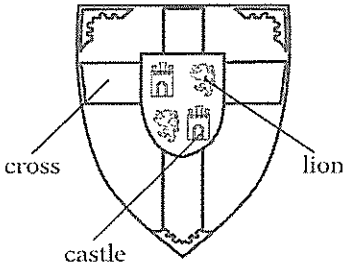
During the Middle Ages, shields, flags and banners were decorated according to **heraldry**. Heraldry included things such as a **coat of arms** or a **family motto**.

At first, shields and banners were painted using simple shapes and bold colours. This made it easy to identify other knights on the battlefield.

Over time, heraldry became more popular. It stopped being something that was only seen in battle and started to also appear at tournaments and on other occasions. Wealthy families liked the idea of creating a coat of arms to express something about themselves and their family. Heraldry became more detailed and colourful. People started including pictures of animals and other **symbols** such as castles, ships and the sun. Each picture carried a special meaning.

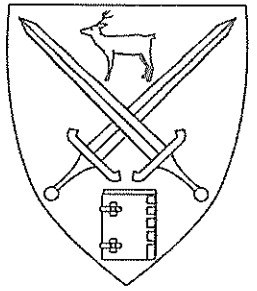
Here are some heraldic symbols and what they represent.

Symbol	Meaning
Deer	Someone who will not fight unless provoked
Castle	Home and safety
Fish	A generous and kind person. Fish are also symbolic of the Christian God.
Horseshoe	Good luck
Peacock	Knowledge and beauty
Pen	Writing and education
Sun	Plentiful harvest and happiness
Swan	Grace, love and poetry
Sword or dagger	Honour and military service
Unicorn	Courage and strength
Vine	A long-lasting friendship



Achieve!

A family coat of arms



☞ Read the Resource sheet 'Heraldry'. Here is an example of a coat of arms. The deer is a symbol of harmony and tolerance, the swords represent honour and the book symbolises learning. Your school logo is like a coat of arms. It uses images to say something special about your school.

1 Design a coat of arms for your family. Draw your design in the box below.

2 What images did you include in your coat of arms? Why did you include them?

3 What does your coat of arms reveal about your family?

Revision & Literacy

i. Find the 20 spelling or grammar mistakes in this information.

ii. Use the information to list as many reasons/events as possible why the world transitioned from an ancient to a modern one.

iii. Who were the 'Anglo-Saxons' and what influence did they have on the English language? (this question requires inference, that is, working out the answer using the information and logic).....

.....

.....

.....

Iv. What contribution/role did the Vikings make towards changing the world?

.....

.....

.....

.....

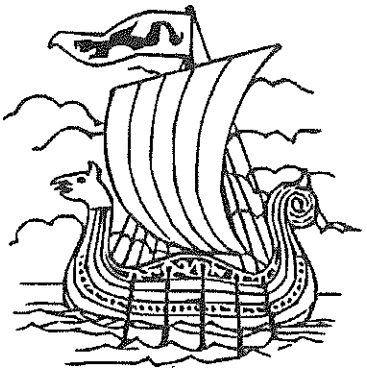
How and when the ancient world transitioned to a modern one.

The ancent world officially ended with the fall of Rome in AD 476. This was an important turning point cause the long-standing control and organisation of Rome across a wide part of the world dissolved and was the beginning of a series of changes that helped the world develop towards a more modern one. In the first few centuries after the fall of Rome, many groups battled for land and power in a period that is sometimes called the 'Dark Ages'. The Angles, Saxons and Jutes took advantage of Rome's decline and invaded and settled in Britain from about AD 410. Later, from AD 793 onwards, the Vikings began invading britain and, like the Anglo-Saxons, had an impact upon Britain influencing it's language, customs and culture (not to mention there genetic influences).

With the centralised control of Rome gone, more localised rulers fought for control- this was feudalism, a style of ruler that began in about the 8th Century AD but had firmly taken hold by about the 10th Century AD. The Frankish king Charlemagne ('Charles the Great) was a notable feudal king who controlled a vast empire across Europe in the 8th Century. Feudalism refers to a style of rule where local chiefs, kings and nobles ruled an area through military strength and land ownership and often had to go to war to protect their lands or gain more. Nobles would pledge allegiance to the local king and be granted lands in return for their loyalty and service as knights in the king's army. Ordinary pepes (peasants) would bee permitted to live on and farm these lands in return for their loyalty and paying a large portion off their produce as tax to the feudal lord. This feudal style of rule dominated during the medieval period circa but there were gradual changes within this time (nothing ever stays the same).

one such change was the Black Death in the 1300s While it was certainly a tragedy, this Great Plague significantly helped to transform society because it created a shortage of workers that made ordinary people more valuable and therefore allowed them to gradually demand betta living and working conditions and shook up the social order that held firm for so long . The shortage of farm labourers also led to changes inn farming methods to cope with the shortage of workers and a decided move towards modernisation.

The geographically wyde spread of Christianity and Islam also significantly changed the way people though (and changing the way people think, changes the way they act)- this was another important step that helped transition the world towards modernistion. Also, the doctrine of these religions and the leaders of these faiths were extremely powerful. Religion was even used to reinforce the right of kings to rule as in the case of Charlemagne mentioned above (he became the first 'Holy Roman Emperor'). Similarly, Suliman the Magnificent of the Islamic Ottoman Empire also closely associated religion with his rule over a vast empire. The Islamic world was also much more scientifically and mathematically advanced then Europe in the medieval period and the spread of Islam (along with European contact during the Crusades) led to spread of these ideas to Europe. This surge in knowledge lead to the Renaissance in the 1500s- a time in which art, architecture and knowledge flourished and the world yet again moved forward as superstitious beliefs gradually gave way too more logical and scientific thinking and the Age of Reason began. In fact, the Renaissance was the official beginning of the modern world. medical and scientific knowledge continued to develop and eventually led to the Scientific Revolution and Industrial Revolutions and a truly modern world. this evolution and development is continuing to this day.



What a joke!

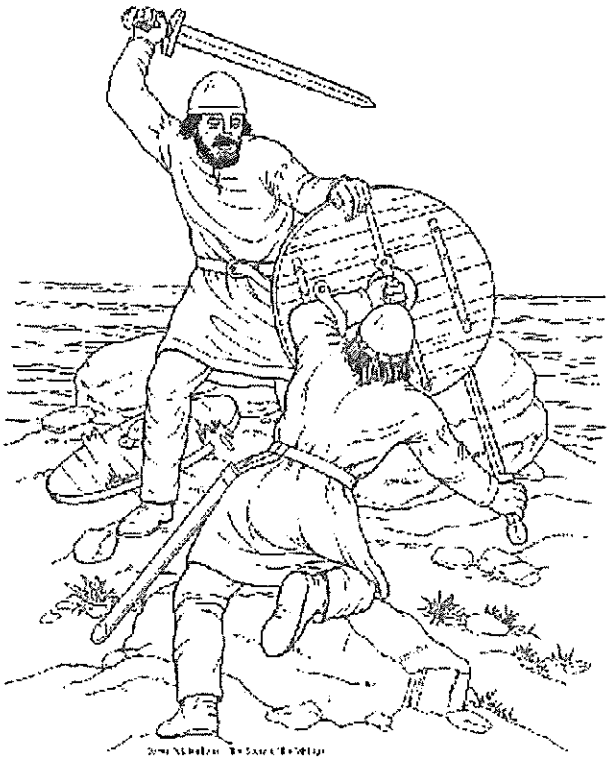
a.Why did ancient Romans find algebra repetitive?

b. Where do zombie Vikings like to sail?

c.What do you call a volunteer jouster?

d.I went to a restaurant that offers breakfast at any time and...

a) X is always 10
b) The Dead Sea
c) A free lancer
d) Ordered French toast in the Renaissance.



Year 8 – Technology Mandatory

Students are currently using Arduino microprocessors and will start using data from sensors on these boards.

Students can access Microsoft Excel through their Microsoft Office 365 account and their student portal. The students are to complete the Excel Spreadsheet activities and save them in their OneDrive account, in a Technology Mandatory folder.

Technology Mandatory

Digital Technologies

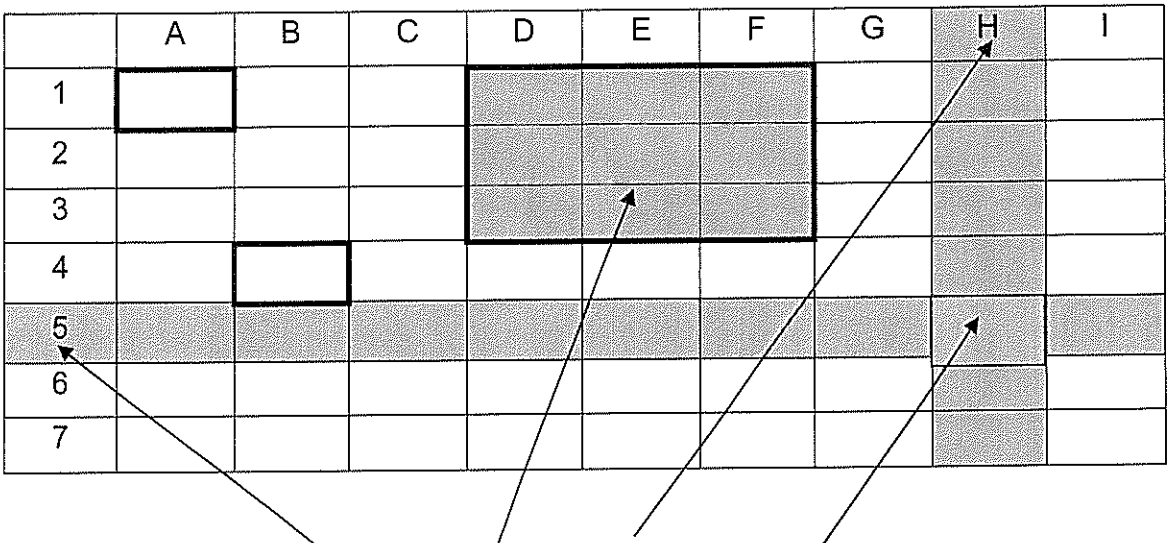
Focus Area: DATA

Data Analysis

Spreadsheets Theory

- Spreadsheets have replaced the pen, calculator and paper ledger for keeping track of sales, wages, marks etc. They can be used to analyse data, automatically calculate and recalculate numbers, display data in the form of charts.

- Essentially a table structure made up of rows and columns.



The intersection point of a **row** (row5) and a **column (H)** is a **cell (H5)**
They are each individually addressed with a letter and number. The position of a cell is called its **cell reference or cell address**.

e.g. A1, B4, H5

A **Range** of cells is labelled as (D1:F3)

A **workbook** is made up of several worksheets (spreadsheets) containing related information.

The three main types of data in a spreadsheet are:

1. **Label - text** enter into a cell to explain part of the spreadsheet.
   Text a-z, A-Z, 0-9, ?"{ }[ ]( )@#$%^&< >!

2. **Values** - numbers stored in a spreadsheet
   - **Numbers** 0-9

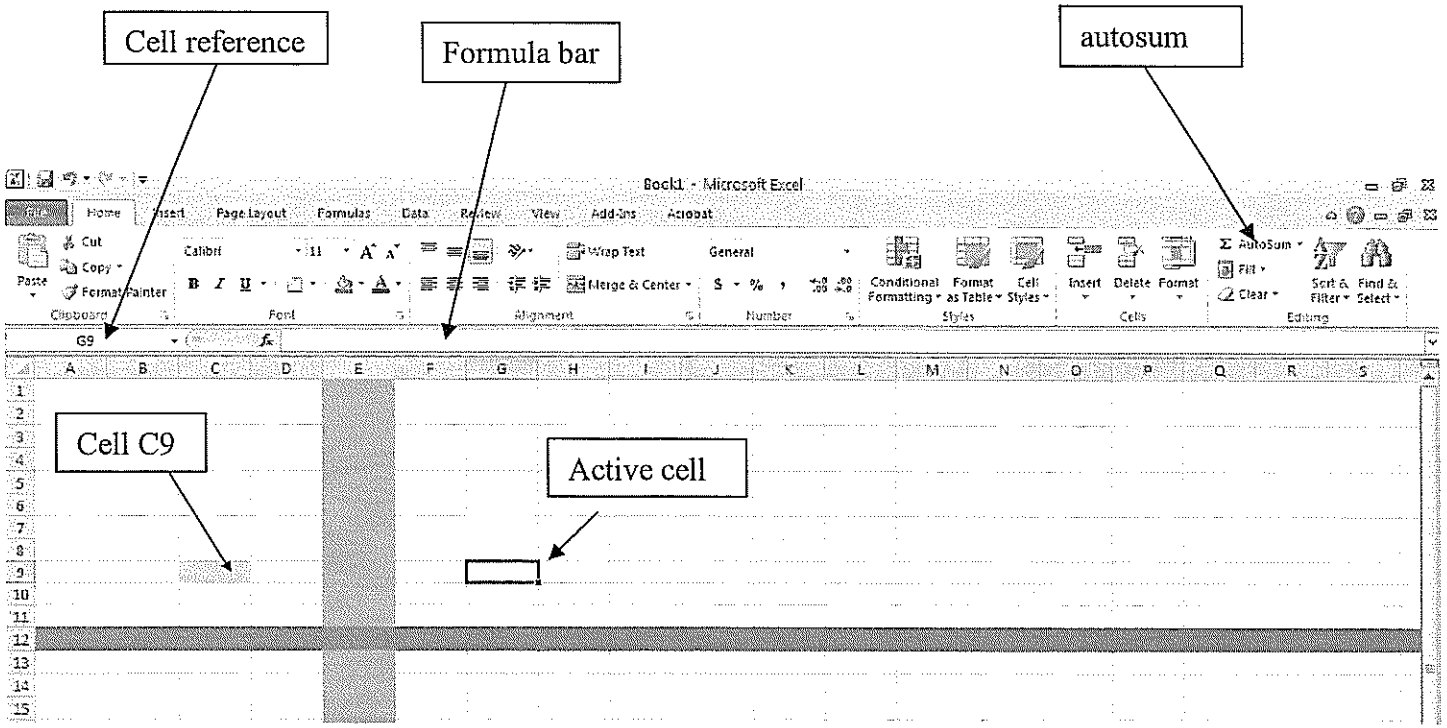
3. **Formulae -** Instructions to perform a calculation
   All start with an = sign.
   e.g. =A1+A2, =SUM(B2:F5)

The layout of a spreadsheet:

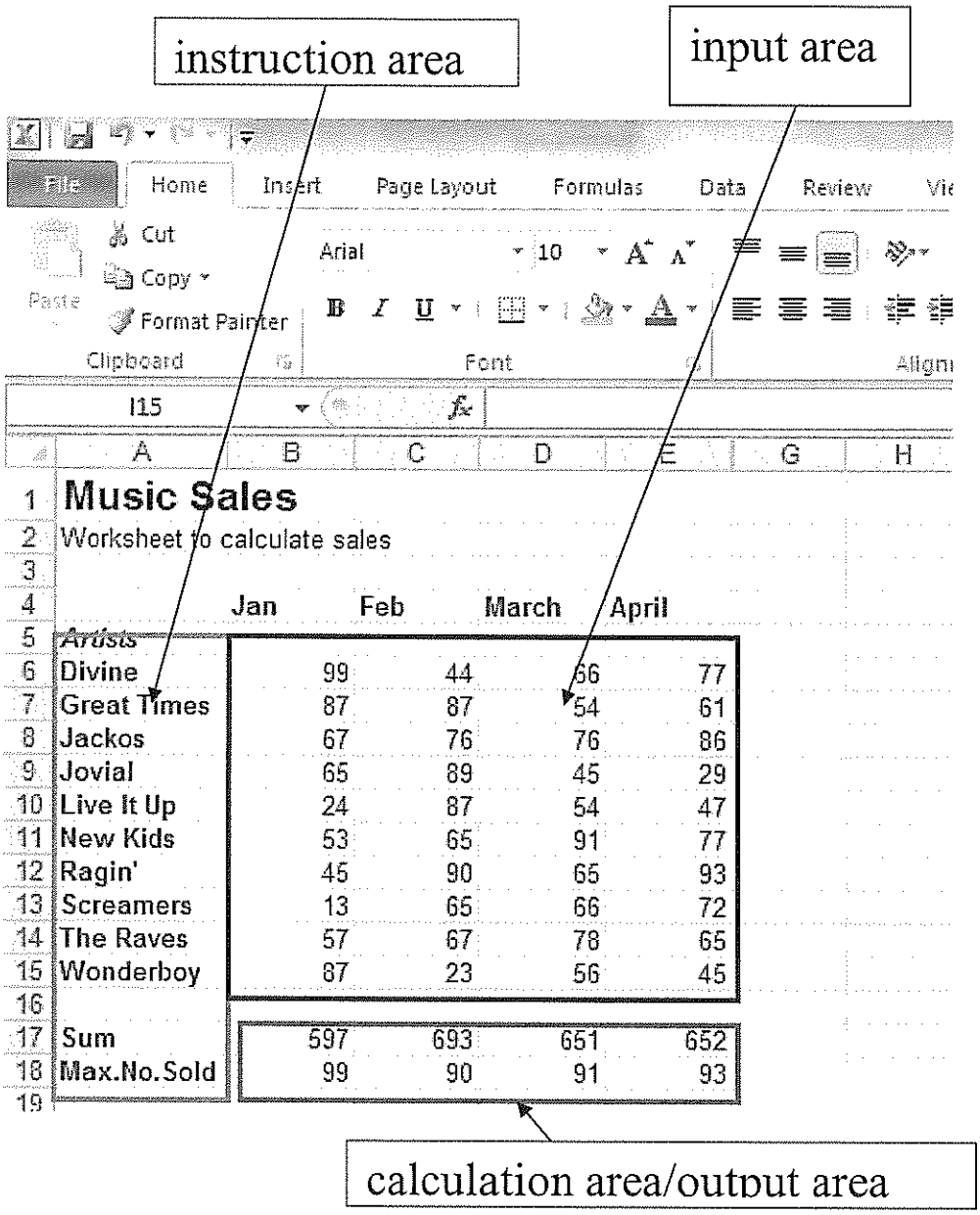
- **Instruction area** – contains information about the spreadsheet or directions for using the spreadsheet
- **Input area** – contains labels and values
- **Calculation area** – contains formulas and functions
- **Output area** – displays result of the spreadsheet, in many cases is the same as the calculation area

MAKING CONNECTIONS

The Excel window:



The layout of a spreadsheet



Formulae and Functions

- **A formula includes one or more mathematical operators.**

Common mathematical operators are:

Mathematics	Computers
Addition	+
Subtraction	-
Multiplication	*
Division	/
Power	^

- **A function is a built-in calculation in a spreadsheet.**

Function	Explanation	Example
SUM	Calculates the sum of the argument values	=SUM (1,3,5) returns_____
MAX	Returns the largest value in the argument	=MAX (1,7,5) returns _____
MIN	Returns the smallest value in the argument	=MIN (1,7,5) returns _____
AVERAGE	Calculates the average of the argument values	=AVERAGE (1,2,3,4) returns _____
COUNT	Count the number of values in the argument	=COUNT (A3:A9) returns _____

Formatting a spreadsheet

- Changing column widths and row heights
  -to show full content of the cell.

- Formatting cells
  -Cells can be formatted with different fonts, styles such as bold, italics, underlined and colour for the cell content.

  -Numeric values can be formatted in a variety of ways:

Command	Features
General	Display the number as precise as possible
Fixed	Display specific number of decimal places
Currency	Insert a $ sign in front of the number
Percent	Display the number as %
Comma	Insert a comma at every third place

Sorting

- Enables a spreadsheet to be displayed in alphabetical and numerical order.
- Ascending order means from lowest to highest.
- Descending order means from highest to lowest.

Filtering

- Used to show required data only.

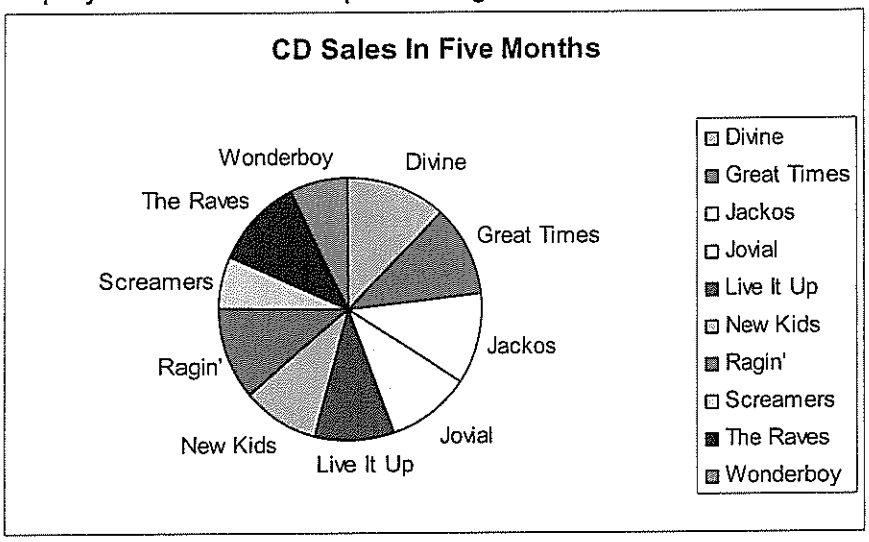
Find

- Used to find a specific piece of data based on criteria.

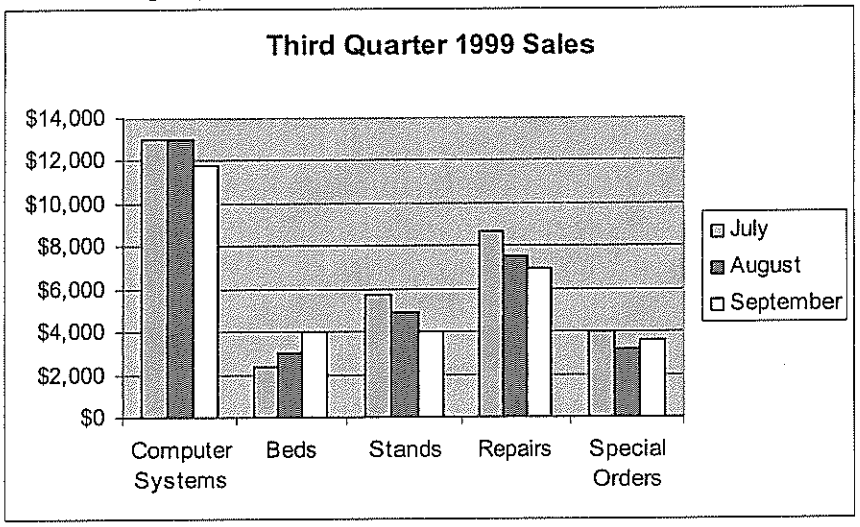
Graphs

Three main types:

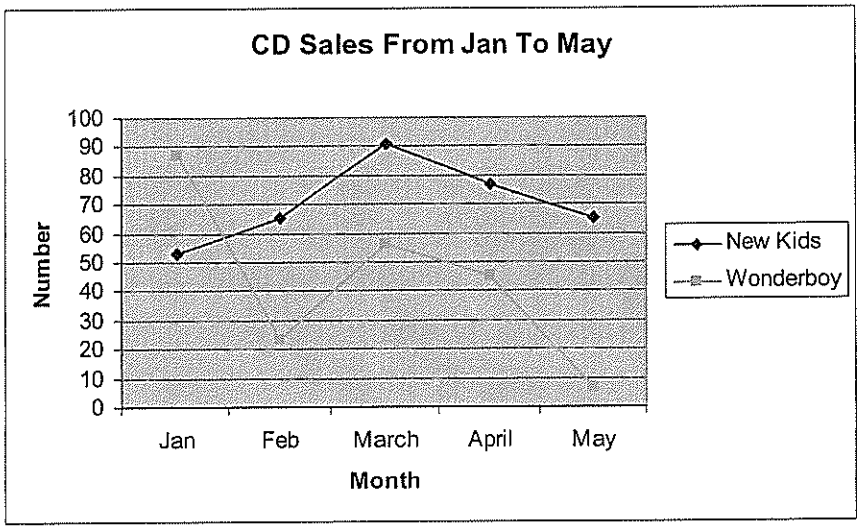
1. **Pie graphs** – display each value as a percentage of the whole.



2. **Bar Graphs or column graphs** – for comparing data.



3. **Line graphs** – show trends or changes over time.



Technology Mandatory

Digital Technologies

Focus Area: DATA

Data Analysis

Spreadsheets Practicals

Practical Exercise 1 – Gravity Markbook

1. Open a new spreadsheet.
2. Save as Markbook
3. Enter the following data into the worksheet:

Gravity High School					
7 IST Markbook					
Last name	First name	Unit 1	Unit 2	Unit 3	Unit 4
Jones	Matthew	34	12	46	52
Smith	Nancy	45	11	56	55
Jenkins	Jim	76	64	75	88
Amie	Lily	23	19	30	29
Lee	David	64	54	65	63
Hayes	Danny	34	56	57	52
Gray	Laura	74	73	65	78
Mitchell	Tony	55	47	65	78

4. Format the cells: labels as text, marks as number with no decimal place.
5. Insert a column called Total and calculate the total marks for each student using formula. Fill down to copy the formula.
6. Insert a column called Average and use the AVRERAGE function to calculate the average mark for each student. Fill down to copy the formula.
7. Add a row called Class Total and use the SUM function to calculate the class total for the Unit 1. Fill across to calculate for the other units.
8. Find the highest mark and the lowest mark for each unit.
9. Save your worksheet.
10. File - Print – preview your document – Home -**note** the dotted line that indicates the page border.
11. Use TNR size 16 bold for the title. Highlight the row - merge cell –centre the title.
12. Format cell borders.
13. Bold the column and row labels.
14. Centre all the labels.
15. Draw a graph to compare Unit1 marks for all students.
16. Plot a graph to identify the trend of Laura Gray's progress through the 4 units.

Practical Exercise 2

1. Create a Spreadsheet with the title **Living Expenses**.
2. Set up your spreadsheet similar to the example below, but based on your personal experience:

Living Expenses				
from 4 Feb to 10 Feb				
Income			**Expenditure**	
pocket money	$100.00		5 x A4 exercise book	$4.00
house work	$8.00		stickers	$1.00
			food and drink	$42.00
Total weekly income			**Total expenditure**	
Money left over for saving				

3. Format the cells accordingly – currency, text etc.
4. Format the spreadsheets to make it easy to read.
5. Draw a graph to show the items you've spent on by percentage.

Practical Exercise 3 - Collecting and analysing

- As a class, work out how students travel to school (public transport, car etc.), and what are percentages for each type of transport.
- Create a spreadsheet to present and data collected and analyse the result by plotting a graph.
- From your analysis, what is the most popular transport type among the class?

Practical Exercise 4 – Right or Wrong Quiz

	A	B	C	D	E
1					
2					
3	Number1		Number2		Answer
4		1 +		3 =	
5		4 +		3 =	
6		8 -		3 =	
7		6 -		2 =	
8		2 +		4 =	

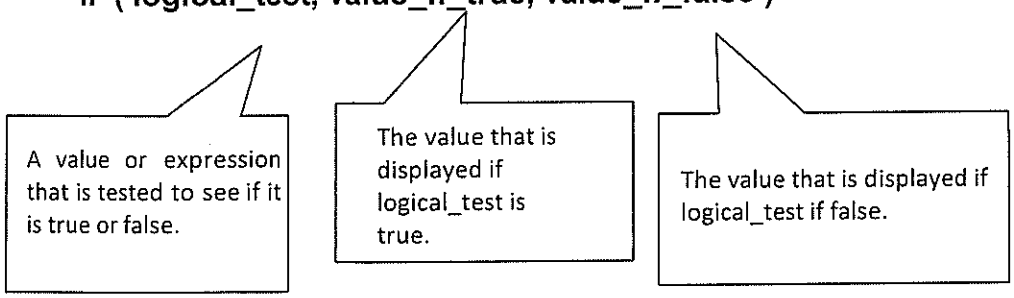
Steps:

1. Select the cell Range A4:E8
2. Format the background colour for these cells
3. Format the cells for the columns B and D, with calculation symbols (+, -, =) as text. Format column A and C as numbers.
4. Enter the values as shown above or use your own values.

5. Format the fonts by changing the colour and bolding the numbers.
6. In column **F**, called **right/wrong.**
7. The IF function is one of Excel's logical functions, and is used to test a certain condition in a spreadsheet is true or false.

8. The Syntax for the IF function is:

=IF (logical_test, value_if_true, value_if_false)



9. Select Cell F4 and use the IF function as given in this example:

Note: It is very important you use quotation marks when your true and false values are text types.

10. Fill down to copy formula to all cells in the same column.
11. Name column **G – Correct Answer**, fill in the correct answers
12. Name column **H – No. of corrects**, and column **I – No. of wrongs**.
13. The **COUNTIF** function counts the number of cells within a range that meet a single criterion that you specify. For example, you can count all the cells that start with a certain letter, or you can count all the cells that contain a number that is larger or smaller than a number you specify.

14. Enter the formula for COUNTIF in H4 to count number of correct answers.

15. Do the same for column I, counting the number of wrongs.
16. Select column G, H and I, right click – hide.
17. Draw a column graph to show the number of right and wrong answers.
18. Format the worksheet to make it look nice.

Practical Exercise 5 - Accessing and evaluating data from public places

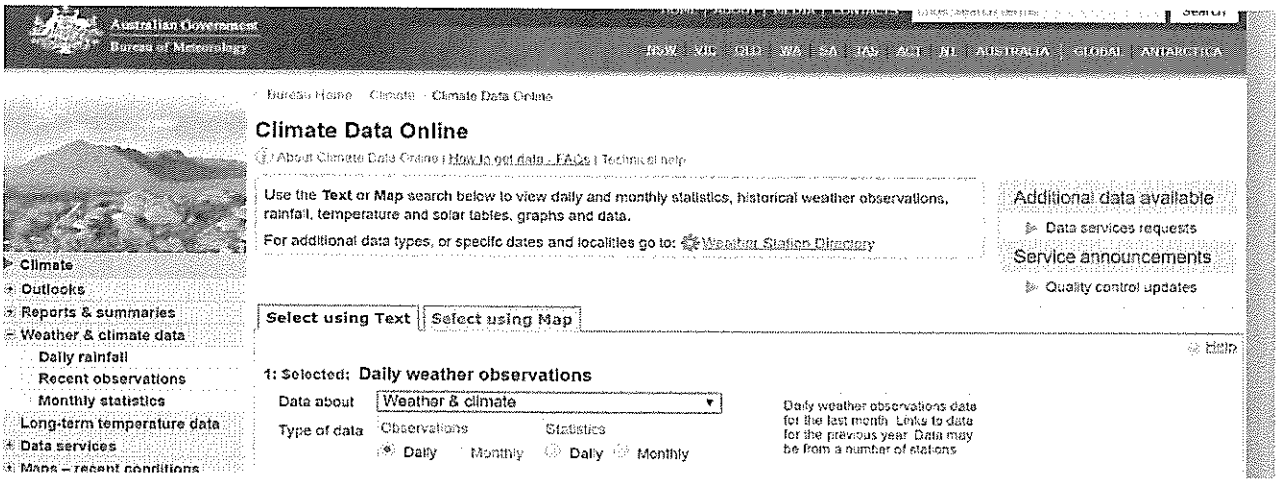
- Download data from Bureau of Meteorology website
- Evaluate data downloaded for authenticity, accuracy and timeliness

Accessing Bureau of Meteorology Data

Use this documentation to select data from the Bureau of Meteorology website.

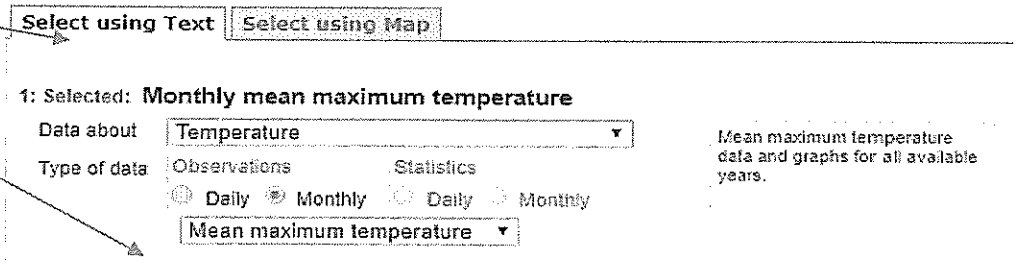
Steps:

Click on this link to go to: BOM climate data

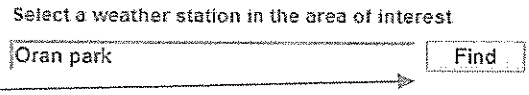


Click on using text

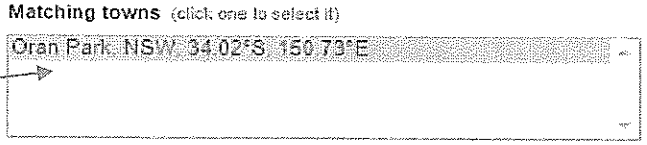
Select temperature, Monthly, Mean maximum temperature

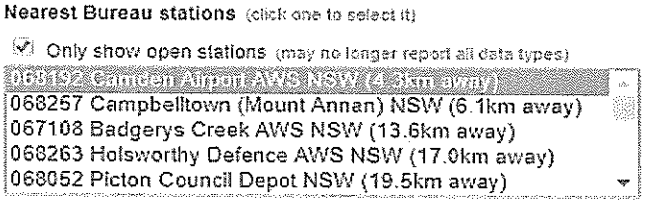


Type in Oran Park, **click** Find

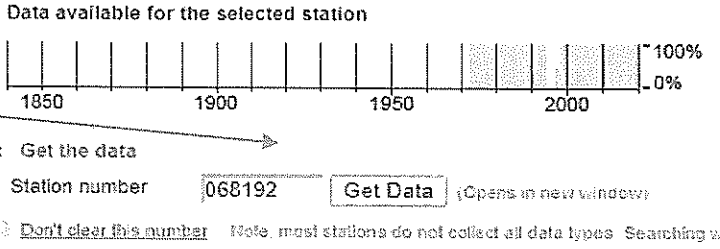


Select Matching towns, and Camden NSW station

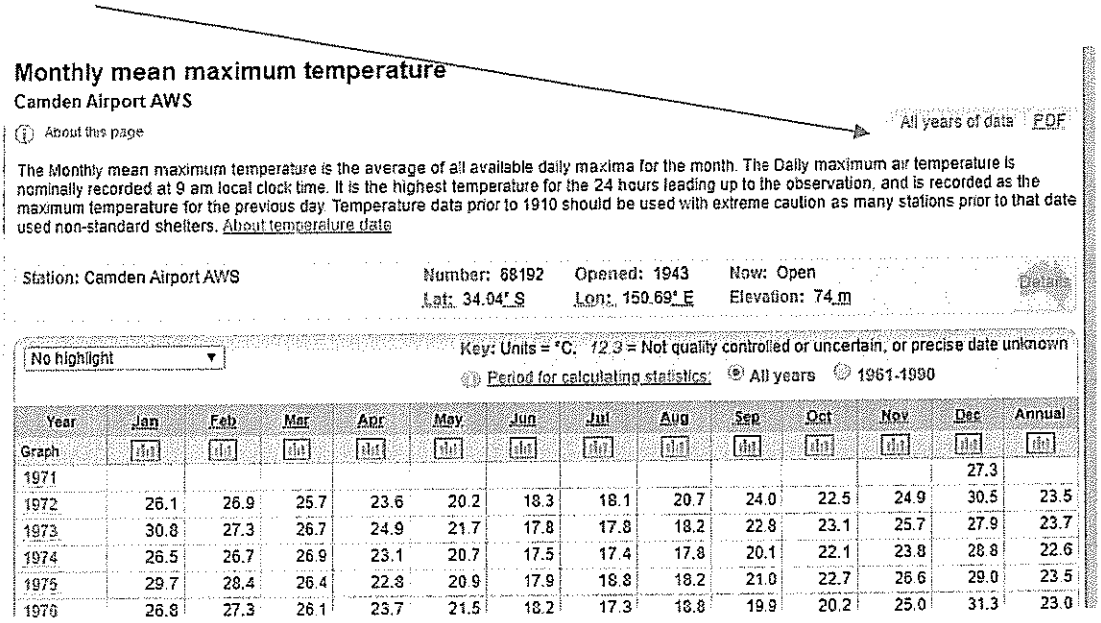




Click Get Data



Click on All years of data, save the zip file.



Monthly mean maximum temperature
Camden Airport AWS

About this page

All years of data PDF

The Monthly mean maximum temperature is the average of all available daily maxima for the month. The Daily maximum air temperature is nominally recorded at 9 am local clock time. It is the highest temperature for the 24 hours leading up to the observation, and is recorded as the maximum temperature for the previous day. Temperature data prior to 1910 should be used with extreme caution as many stations prior to that date used non-standard shelters. About temperature data

Station: Camden Airport AWS | Number: 68192 | Opened: 1943 | Now: Open
Lat: 34.04° S | Lon: 150.69° E | Elevation: 74 m

No highlight

Key: Units = °C, 12.3 = Not quality controlled or uncertain, or precise date unknown

Period for calculating statistics: All years 1961-1990

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Graph													
1971												27.3	
1972	26.1	26.9	25.7	23.6	20.2	18.3	18.1	20.7	24.0	22.5	24.9	30.5	23.5
1973	30.8	27.3	26.7	24.9	21.7	17.8	17.8	18.2	22.8	23.1	25.7	27.9	23.7
1974	26.5	26.7	26.9	23.1	20.7	17.5	17.4	17.8	20.1	22.1	23.8	28.8	22.6
1975	29.7	28.4	26.4	22.8	20.9	17.9	16.8	18.2	21.0	22.7	26.6	29.0	23.5
1976	26.8	27.3	26.1	23.7	21.5	18.2	17.3	18.8	19.9	20.2	25.0	31.3	23.0

Unzip the file and open the Data.....12.csv file and answer the following questions:

1. Sort temperatures from highest to lowest using the Annual column, which year has the highest mean maximum temperature?
2. Filter the data to show the 2018 data only, what is the mean highest mean temperature in July?
3. How do you know the data authentic?
4. How does BOM makes sure the accuracy and timeliness of the data?

Practical Exercise 6 - evaluate the authenticity, accuracy and timeliness of data

Go to Australian Bureau of Statistics Census page, answer the following questions:

1. What is the purpose of a census?
2. How many census results are listed on the website?
3. Which census will give you the most current data?
4. How is the data collected? See Overview.
5. Is the data reliable?
6. How does the bureau handle the privacy issues? See confidentiality.
7. Write a summary of the community profile in 2171 Postcode area using community profiles link.

Mini project – the percentage of year8 students who play sports outside school and what sports they play.

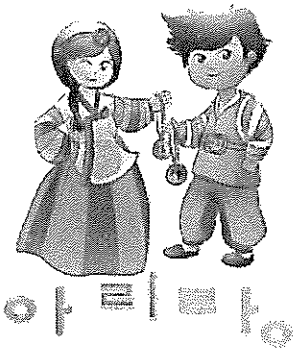
1. Decide the sample size - how many year8 students are you surveying
2. Collect your data and present them in an Excel spreadsheet.
3. Analyse and present the data by plotting graphs.
4. Upload your Excel file to Moodle.

NSW GOVERNMENT | Education & Communities

Let's learn Hangeul

한글

Workbook



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Illustrations: Ga Hee Lee & Joanne Lee-Jung

KING SEJONG, THE GREAT

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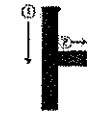
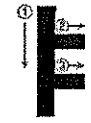
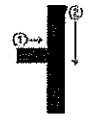
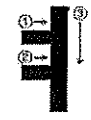
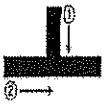
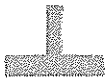
Simple vowels

Writing

1. Write the following Korean basic vowels. When you write the vowels, write from top to bottom, and left to right and use the correct stroke order every time.

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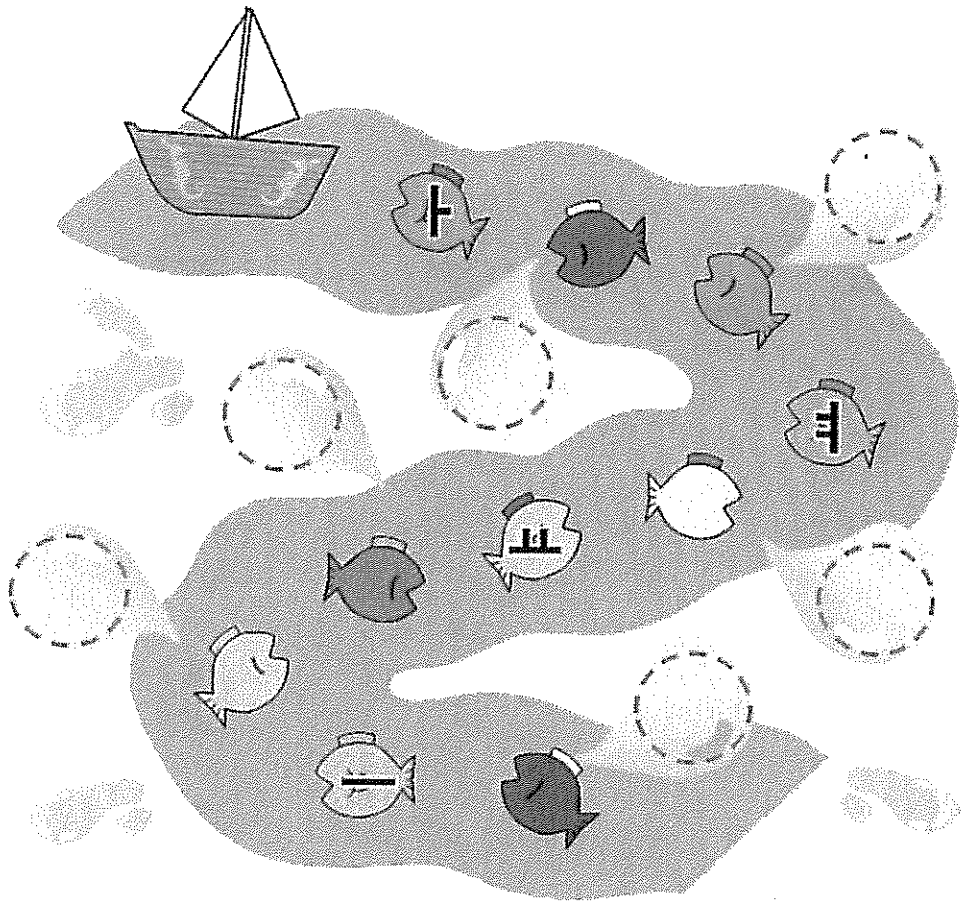
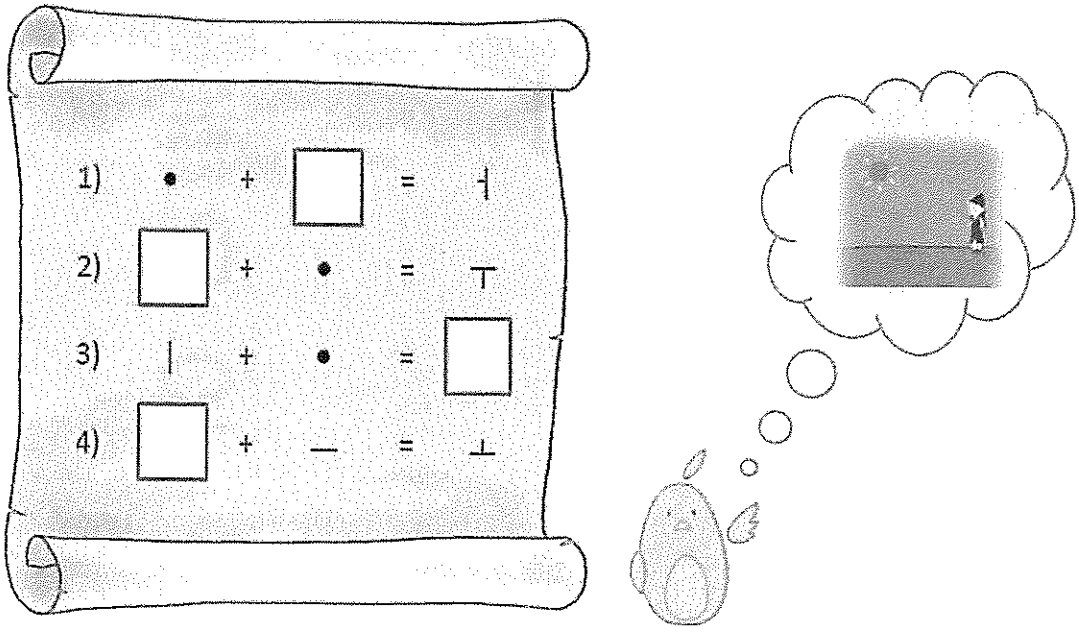
2. The vowels should be in order. Write the missing vowels in the bubbles.



3. Complete the following equations.



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4. Draw lines to match the letters which have the same sounds.

ㅏ	오
ㅛ	우
ㅣ	야
ㅜ	어
ㅋ	아
ㅗ	요
ㅡ	여
ㅑ	유
ㅓ	이
ㅠ	으

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Writing

5. Write the following vowels with the silent consonant ㅇ. Be sure to use the correct stroke order.

아	아					
야	야					
어	어					
여	여					
오	오					
요	요					
우	우					
유	유					
으	으					
이	이					

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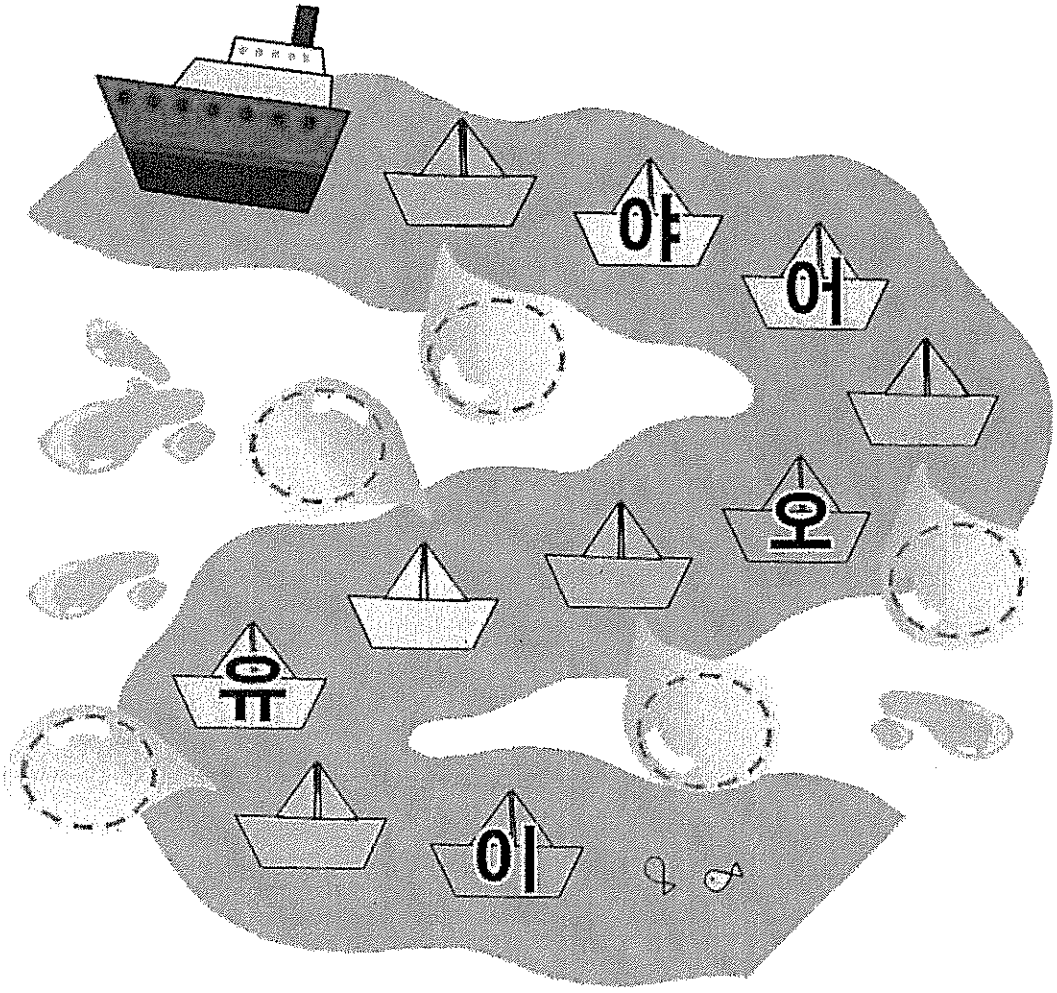
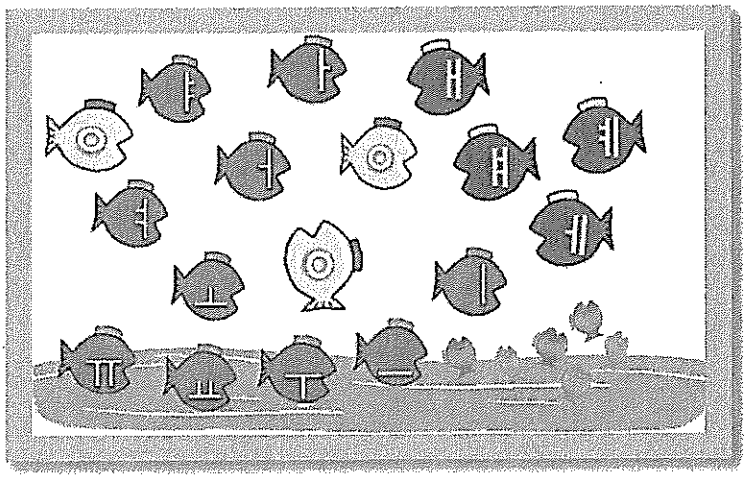
6. Write the missing vowels with the silent consonant ㅇ in the bubbles. The vowels should be in the correct order.





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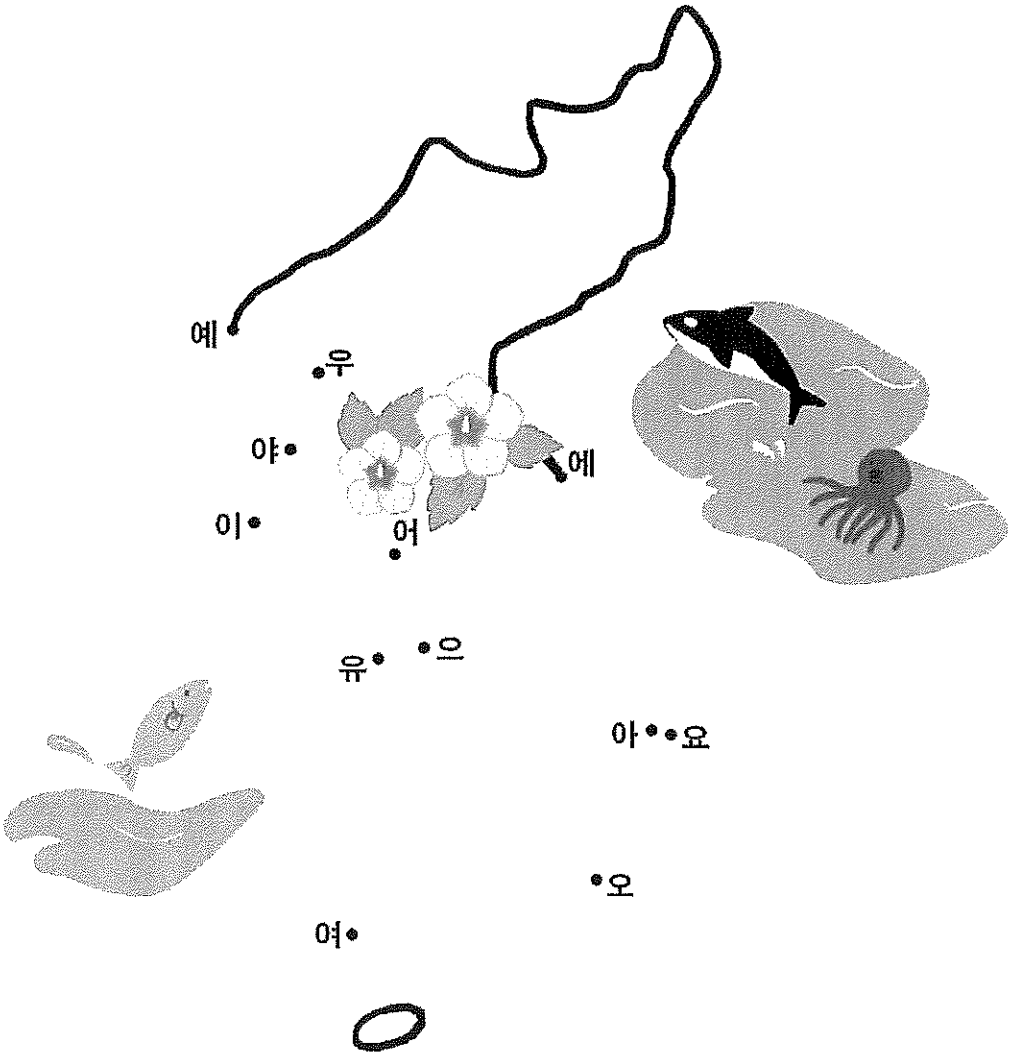
Listening

7. Draw a line joining the letters that you hear to complete the picture below.

   Start with 예. Track 2



8. Circle the vowels that you hear. Track 3

1)	아	어	2)	오	요	3)	우	오
4)	유	으	5)	여	어	6)	요	이
7)	요	유	8)	우	유	9)	오	으

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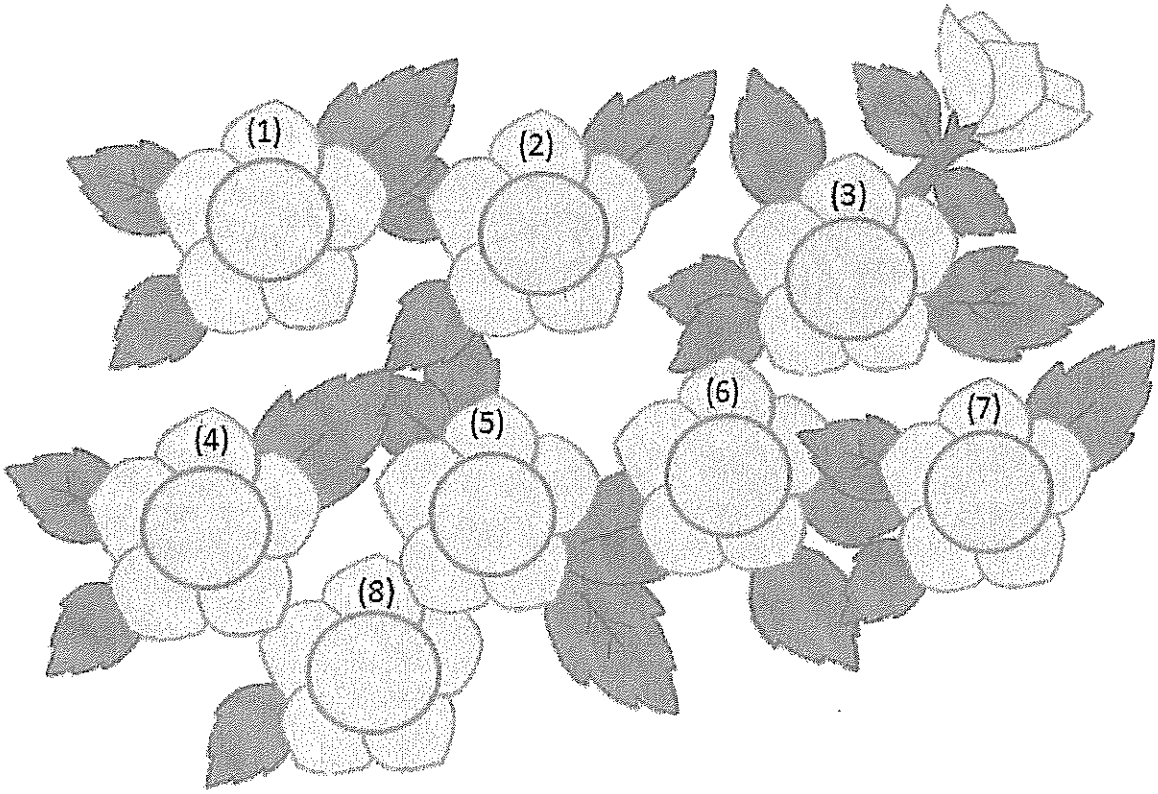
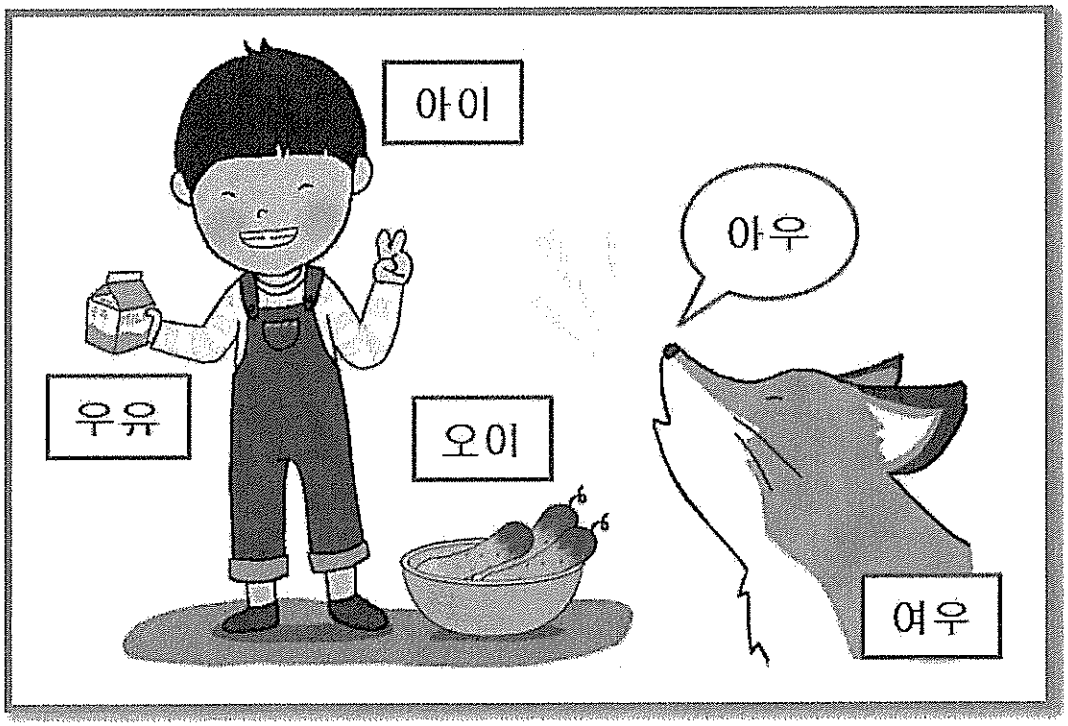
Listening and writing

9. Write down the vowels that you hear. Track 4





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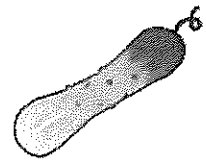
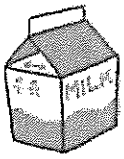
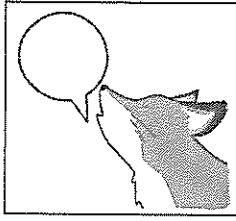
Reading and writing

10. Write the word for each image.

	오			
	오이			
	이			
	이			
	아이			
	우유			
	여우			
	아우			

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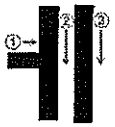
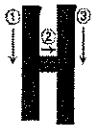
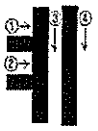
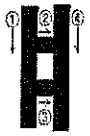
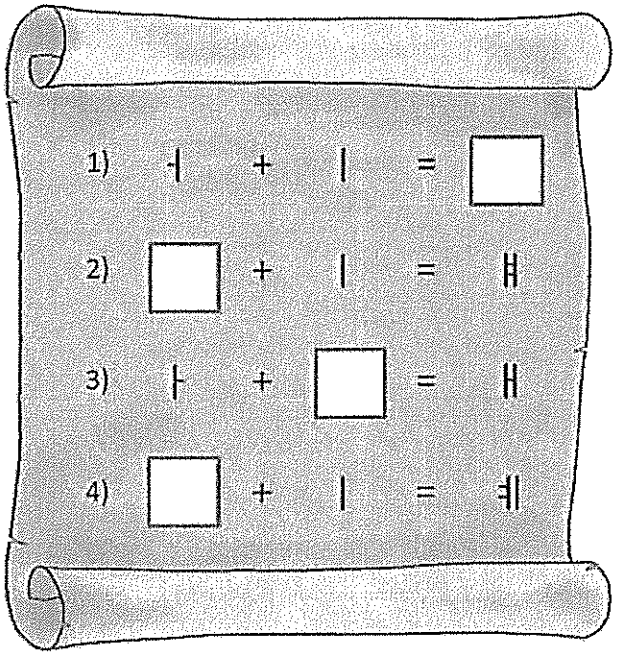
Vowel combinations 1

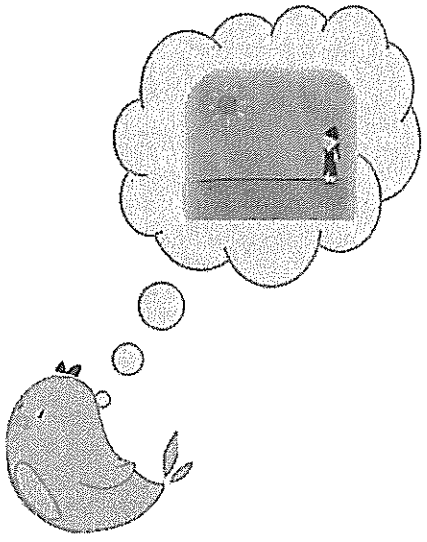
Writing

11. Write the following vowels in the correct stroke order.

12. Complete the following equations.





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13. Draw lines to match the letters to the ones with the same sounds.

ㅔ	아
ㅒ	예
ㅖ	에
ㅐ	야

14. Write the following vowels with the silent consonant ㅇ.

에	에					
아	아					
예	예					
야	야					

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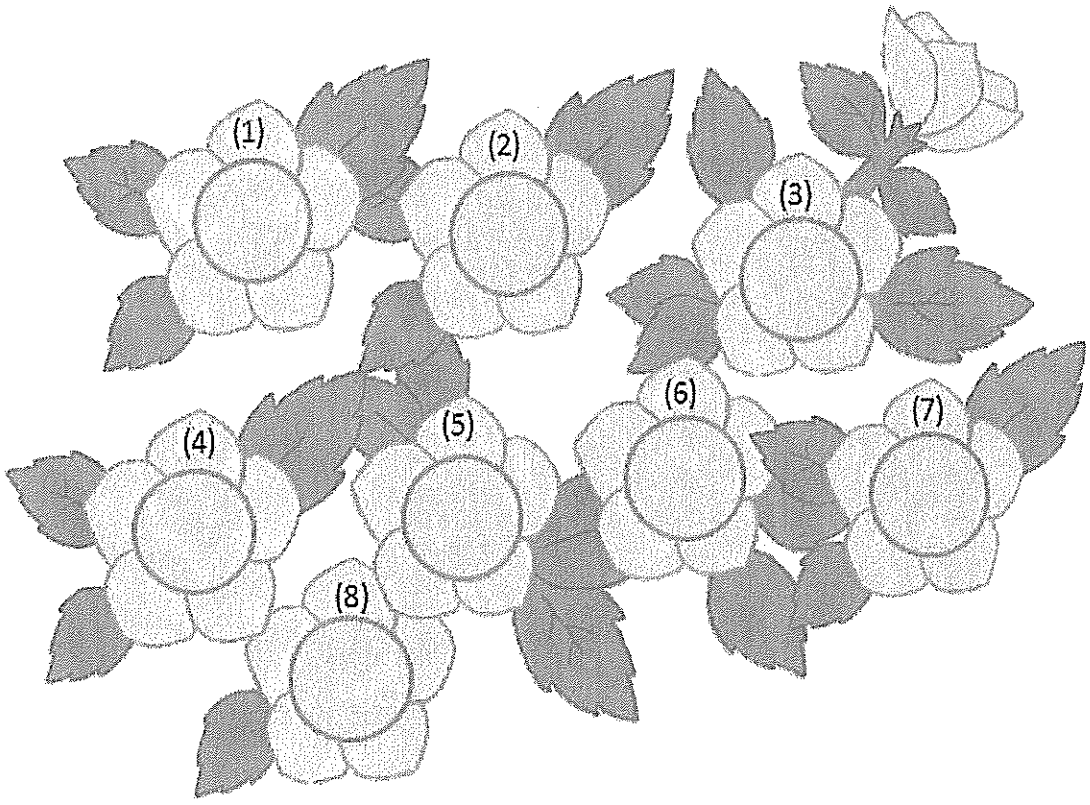
Listening

15. Circle the vowels that you hear. Track 5

1)	애	예	2)	야	애
3)	어	에	4)	아	애
5)	에이	예이	6)	애애	얘애
7)	오에	오예	8)	으애	으얘
9)	예에	에이	10)	애애	에예

Listening and writing

16. Write down the vowels that you hear. Track 6



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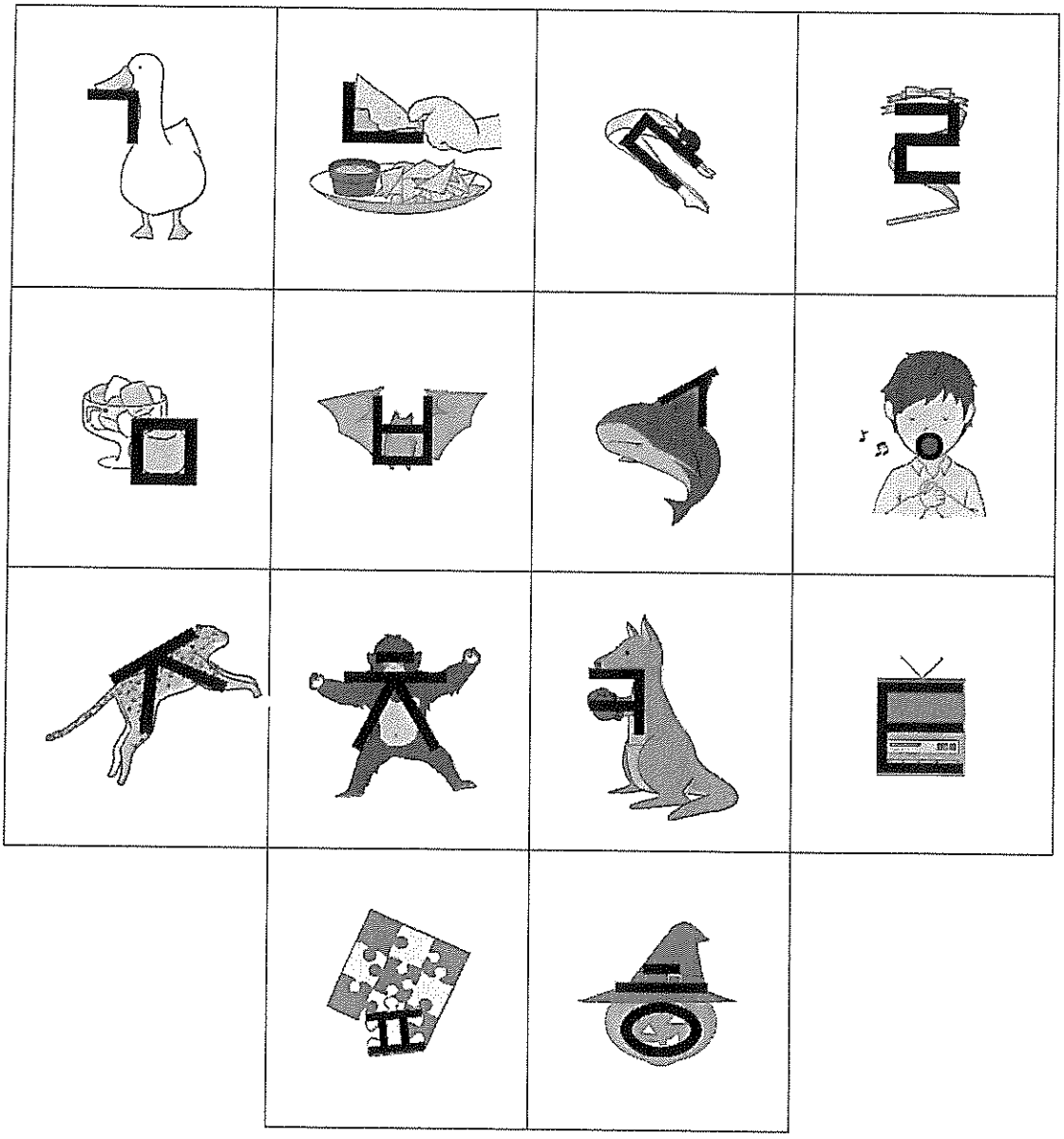
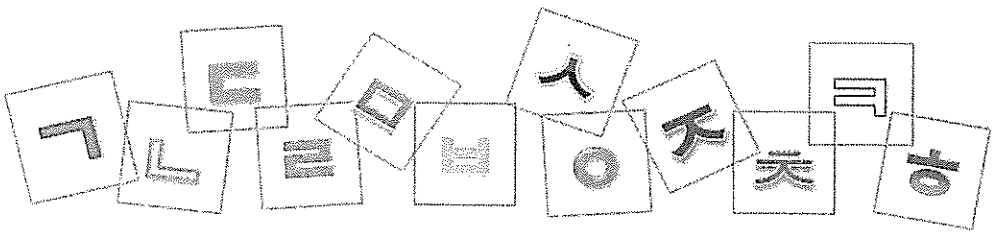
Consonants





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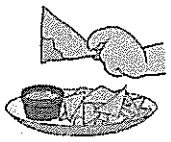
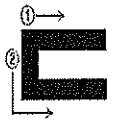
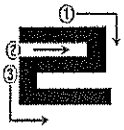
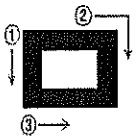
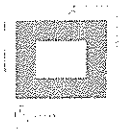
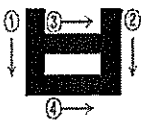
Writing

17. Write the following consonants using the correct stroke order.

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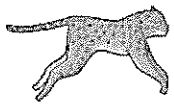
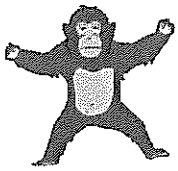
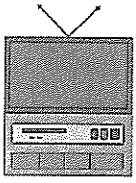
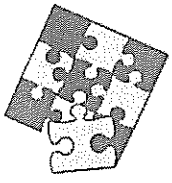
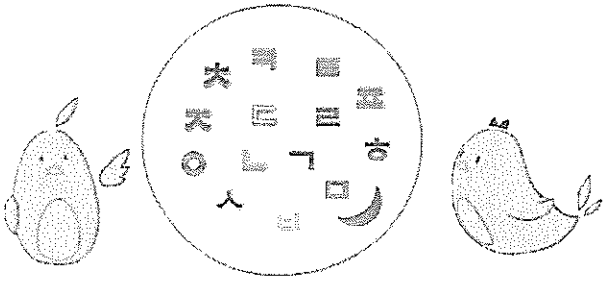
	ㅇ	ㅇ				
	ㅈ	ㅈ				
	ㅊ	ㅊ				
	ㅋ	ㅋ				
	ㅌ	ㅌ				
	ㅍ	ㅍ				
	ㅎ	ㅎ				



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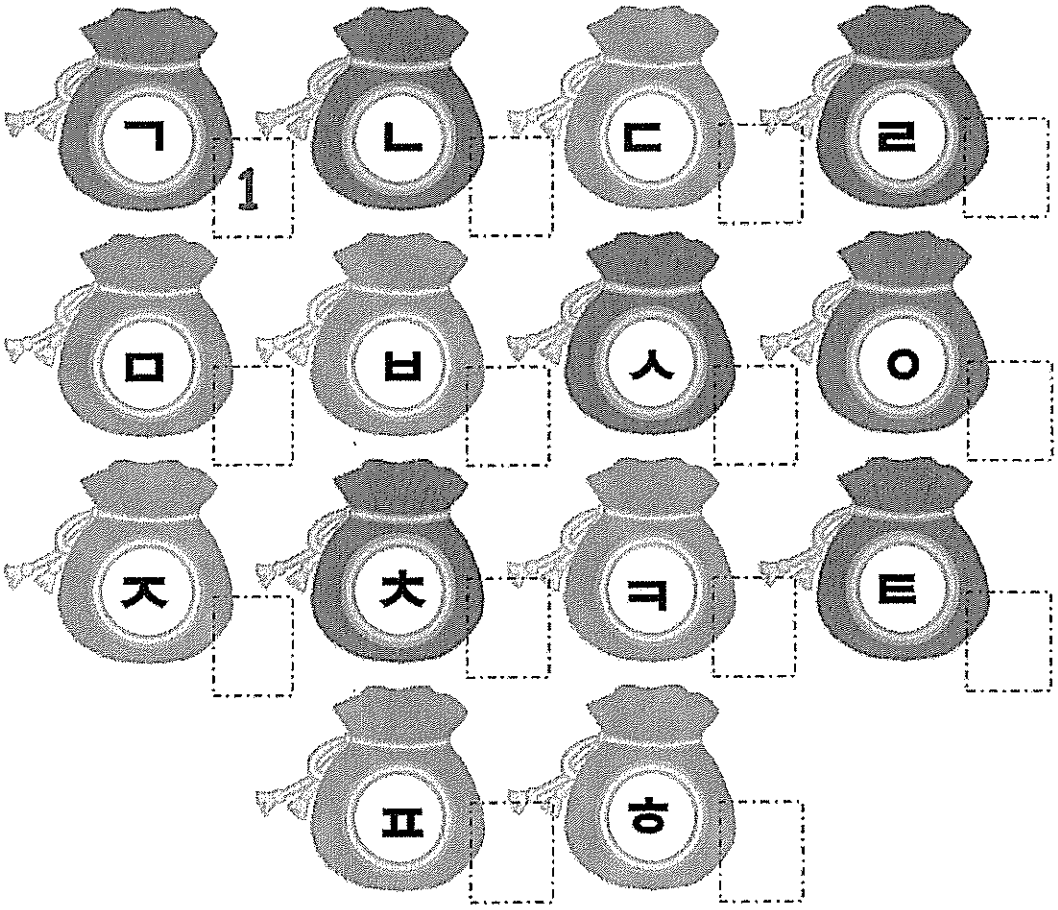
Listening

18. Circle the consonants that you hear. Track 7

1)	ㅁ	ㄹ	2)	ㅂ	ㅍ
3)	ㅈ	ㅊ	4)	ㄷ	ㅌ
5)	ㅅ	ㅊ	6)	ㄹ	ㅎ
7)	ㄴ	ㅁ	8)	ㄱ	ㅋ

19. Listen and write the number next to the consonant that you hear. The first one has been done for you. Track 8



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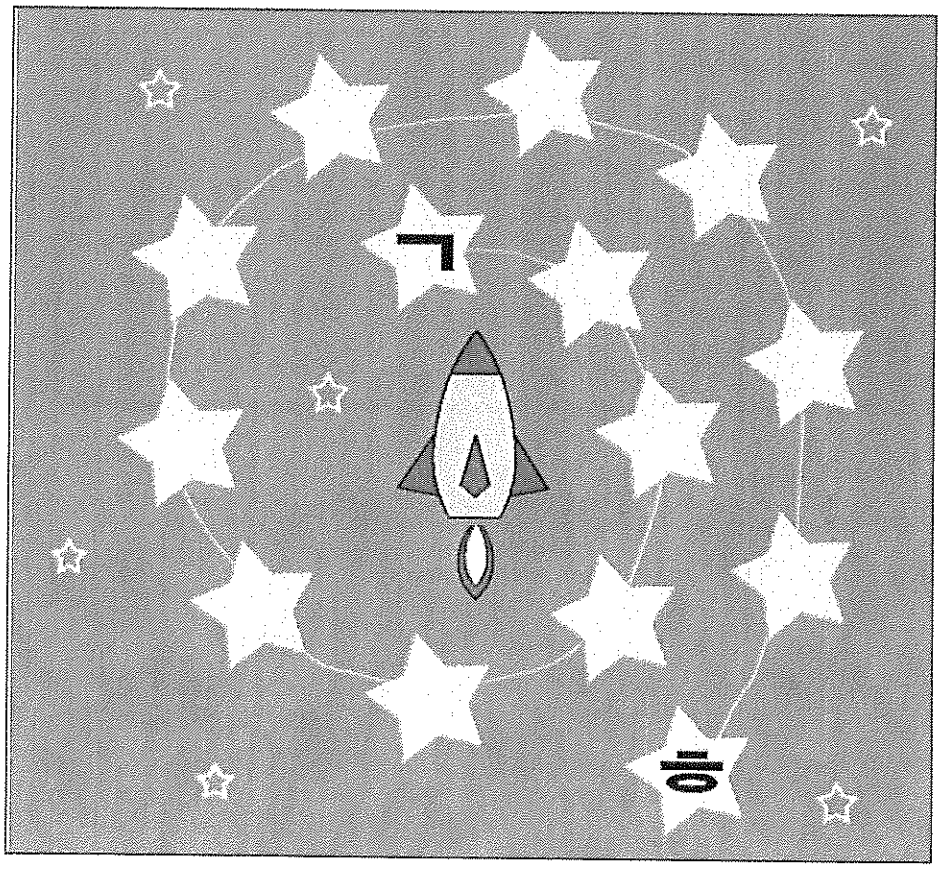
Writing

20. Write the correct consonant next to the equivalent English sound.

d		j		t	
r/l		ch		p	
b		s		h	
k		n		m	

21. Fill in the consonants in order in the picture below. Start with ㄱ, and finish with ㅎ.



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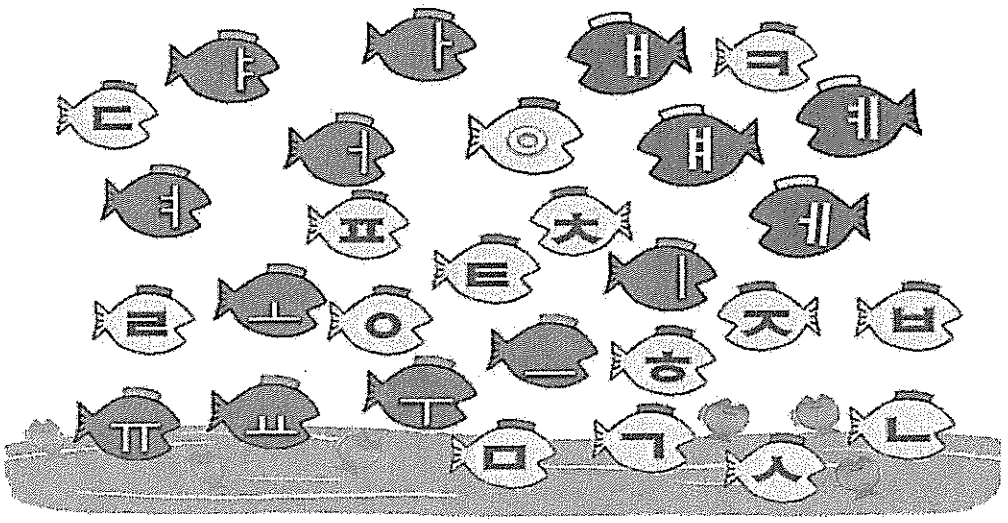
Writing and speaking

22. Form a group of four or five. Fill in each square below with a Korean consonant. You will need to use some consonants twice to fill the box. Take turns in your group to call out one of the consonants. Cross out the consonants you hear. The first person to cross out all of the boxes around the outside says "Bingo!".

Did you notice you have made the consonant ㅁ?



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Syllabic construction 1

Writing

23. Combine the consonants and vowels to complete the following charts.

	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
ㄱ										
ㄴ										
ㄷ										
ㄹ										
ㅁ										
ㅂ										
ㅅ										
ㅇ										
ㅈ										
ㅊ										
ㅋ										
ㅌ										
ㅍ										
ㅎ										

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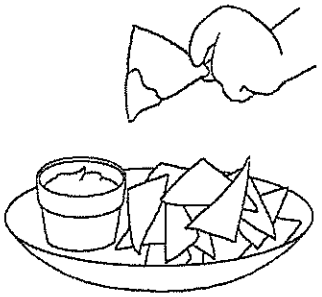
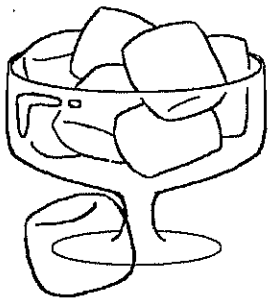
	ㅐ	ㅒ	ㅖ	ㅙ
ㄱ				
ㄴ				
ㄷ				
ㄹ				
ㅁ				
ㅂ				
ㅅ				
ㅇ				
ㅈ				
ㅊ				
ㅋ				
ㅌ				
ㅍ				
ㅎ				





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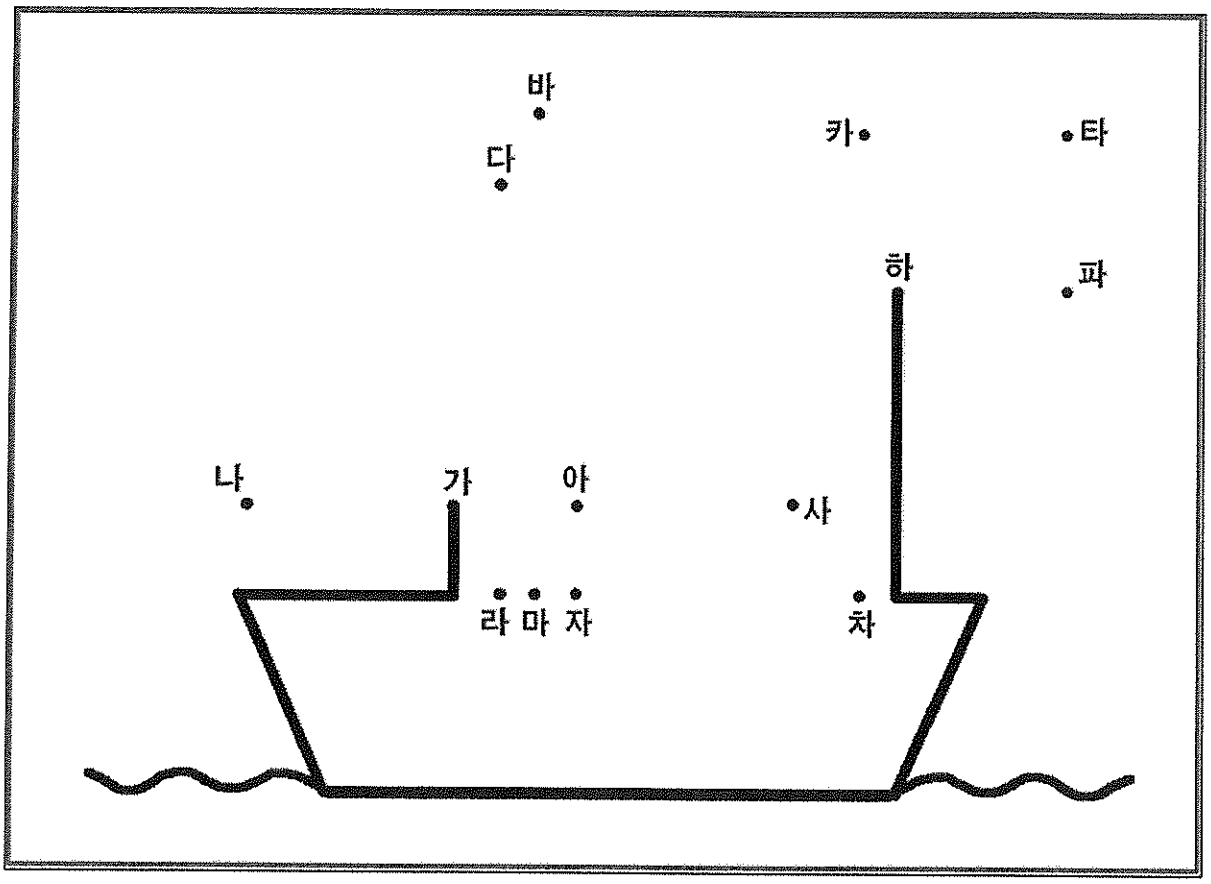
Listening

24. Draw a line joining the letters that you hear to complete the picture below.

Start with 가. Track 9



25. Listen to the sounds and fill in the missing consonants. Track 10

1) ㅏ 2) ㅏ 3) ㅏ 4) ㅏ

5) ㅗ 6) ㅣ 7) ㅛ 8) ㅜ

9) ㅖ 10) ㅜ 11) ㅓ 12) ㅡ

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26. Listen to the sounds and fill in the missing vowels. Track 11

1) ㄱ 2) ㄴ 3) ㄷ 4) ㄹ

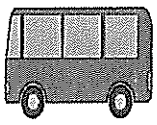
5) ㅁ 6) ㅂ 7) ㅅ 8) ㅇ

9) ㅈ 10) ㅊ 11) ㅋ 12) ㅌ

Listening and reading

27. Listen and circle the words that you hear. Track 12

1)

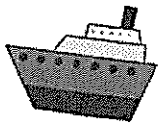


a) 버스
b) 머스
c) 퍼스

2)

a) 토니스
b) 터니스
c) 테니스

3)

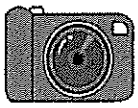


a) 바트
b) 보트
c) 베트

4)

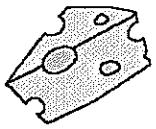
a) 크피
b) 커피
c) 커비

5)



a) 카미라
b) 크메리
c) 카메라

6)

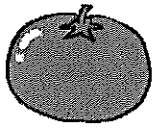


a) 치즈
b) 치지
c) 츠지

7)

a) 비아노
b) 포아노
c) 피아노

8)



a) 도마도
b) 토마토
c) 토마도

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Reading and writing

28. Circle the odd syllable that is written wrongly in each word and rewrite the word correctly in the space provided. The first one has been done for you.

바	도	나	바나나
ㅣㅍ	아	노	
러	디	오	
ㅠ	보	드	
카	ㅐㅁ	라	
테	ㄷ	스	
ㅣㅛ	드	니	
오	페	모	
하	ㅓㅇ	스	
토	ㅓㅁ	토	

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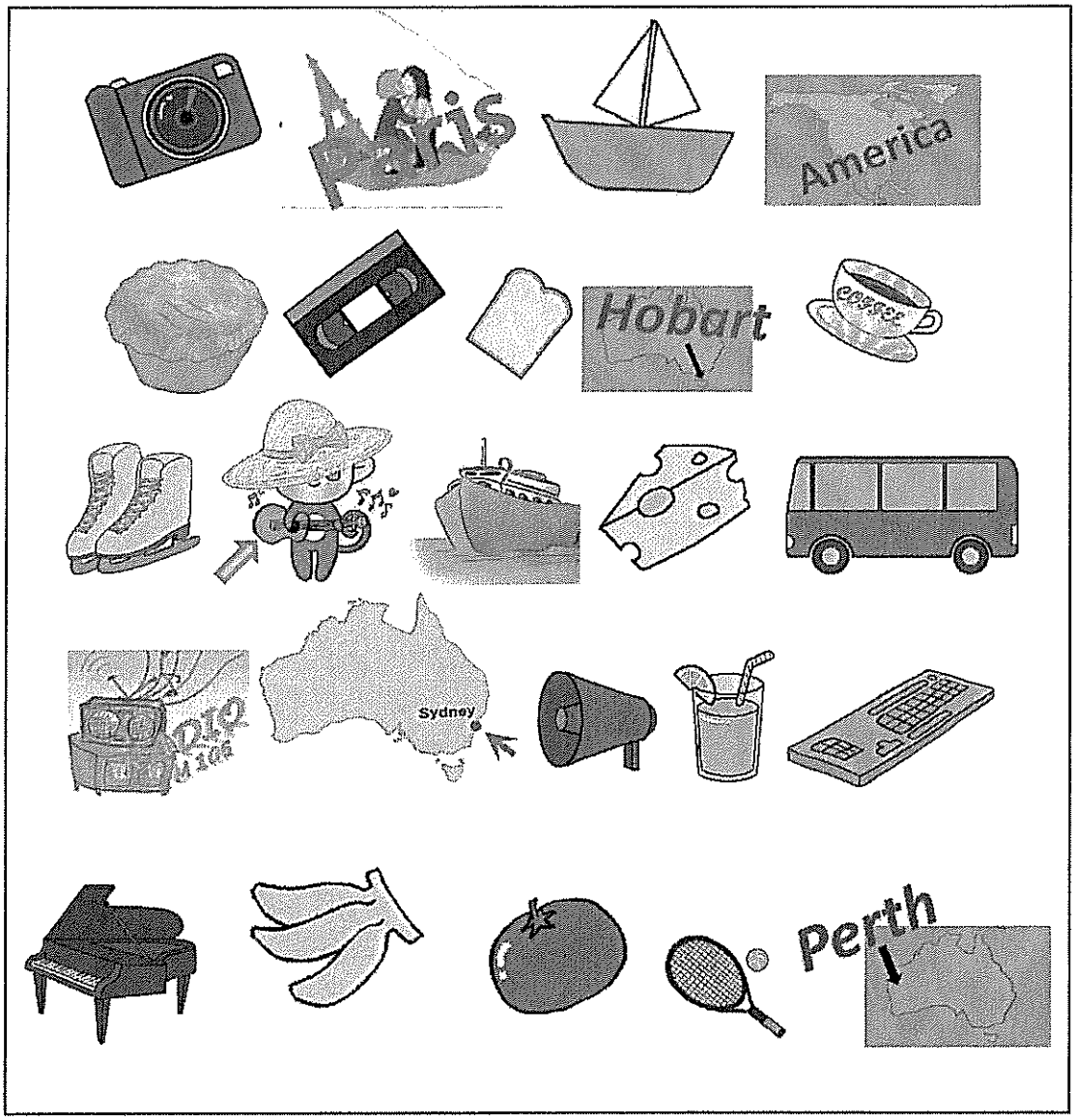
29. Read the following loan words and work out their meanings. Place them in the appropriate categories on the next page.

바나나	버스	테니스	피아노
시드니	비디오	토마토	라디오
치즈	주스	스피커	키보드
커피	보트	카메라	토스트
기타	파리	스케이트	파이
호바트	퍼스	페리	아메리카



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Categories	
Food & drink	
Transportation	
Sports	
Places	
Office supplies	
Instrument	

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30. Create your own picture puzzle. Choose five loan words to hide in a picture. Draw the most suitable background to hide the five words. Write the words you have hidden in the picture in the second row of the table below. When you have finished, challenge your partner to find the words.

Draw your own picture puzzle.
Write the hidden words in Korean.

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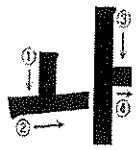
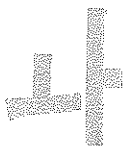
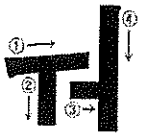
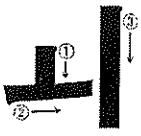
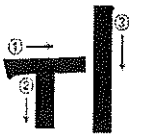
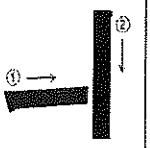
Vowel combinations 2

Writing

31. Write the following vowels using the correct stroke order.

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32. Complete the following equations.

1) ㅗ + ☐ = ㅘ

2) ☐ + ㅐ = ㅙ

3) ㅜ + ☐ = ㅞ

4) ☐ + ㅣ = ㅟ

5) ☐ + ㅣ = ㅢ

6) ㅜ + ㅓ = ☐

7) ☐ + ㅣ = ㅚ

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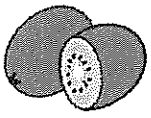
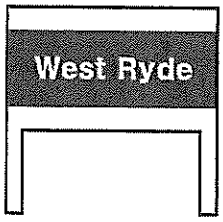
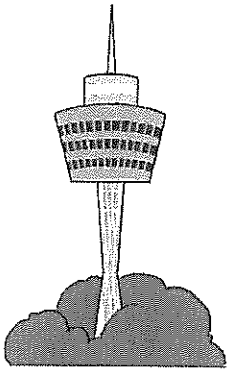
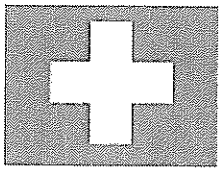
33. Write the following vowels with the silent consonant ㅇ.

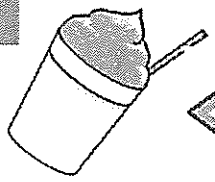
와	와					
워	워					
왜	왜					
웨	웨					
외	외					
위	위					
의	의					











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Writing

34. Combine the consonants and vowels to complete the chart.

	ㄱ	ㄴ	ㄷ	ㄹ	ㅁ	ㅂ	ㅅ	ㅇ	ㅈ	ㅊ	ㅋ	ㅌ	ㅍ	ㅎ
ㅏ	과													화
ㅓ		눠											풔	
ㅐ			돼									퇘		
ㅔ				뤠							퀘			
ㅚ					뫼					최				
ㅟ						뷔			쥐					
ㅢ							싀	의						

Listening

35. Circle the vowels that you hear. Track 13

1) 와 워 2) 왜 의

3) 외 위 4) 위 웨

5) 워 외 6) 의 와

7) 웨 위 8) 외 워

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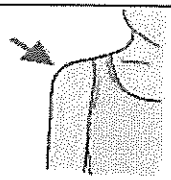
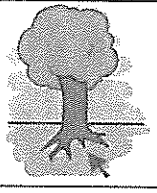
Double consonants

Writing

36. Write the word for each image.

	어깨			
	토끼			
	찌개			
	머리띠			
	싸요			
	비싸요			
	짜요			
	뿌리			

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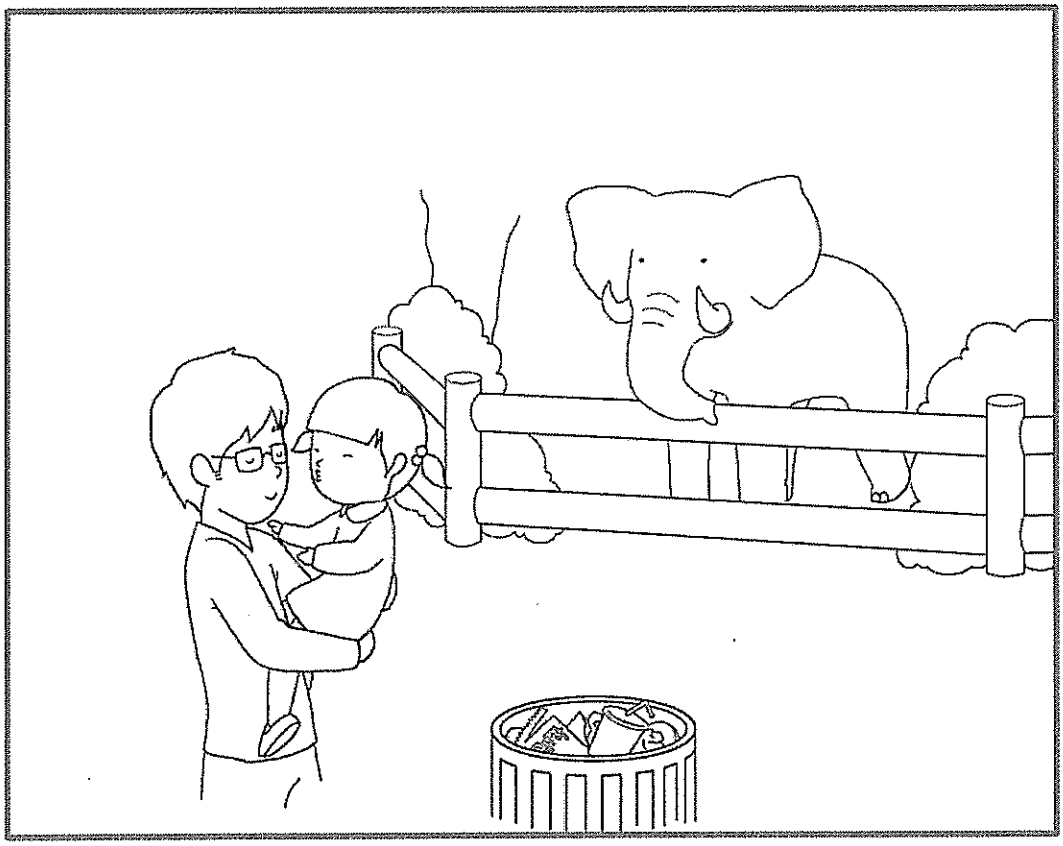
Label the images in the picture below.

Colour the picture below. Find the differences between two pictures.



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Listening

37. Listen and circle the words that you hear. Track 14

1)
a) 꼬마
b) 뚜마
c) 짜마

2)
a) 뿌리
b) 부리
c) 뽀리

3)
a) 꼬끼리
b) 꼬키리
c) 코끼리

4)
a) 머리띠
b) 머리떼
c) 머리디

5)
a) 씨요
b) 싸요
c) 싸여

6)
a) 쩌요
b) 짜오
c) 짜요

7)
a) 아뻐
b) 아바
c) 아빠

8)
a) 토기
b) 토끼
c) 또키

9)
a) 어끼
b) 아깨
c) 어깨

10)
a) 뽀보
b) 뽀뽀
c) 포뽀

11)
a) 뽀빠이
b) 포파이
c) 뽀파이

12)
a) 빠라마타
b) 파라마따
c) 파라마타

13)
a) 스나미
b) 쓰나미
c) 쯔나미

14)
a) 와이바이
b) 와리파이
c) 와이파이

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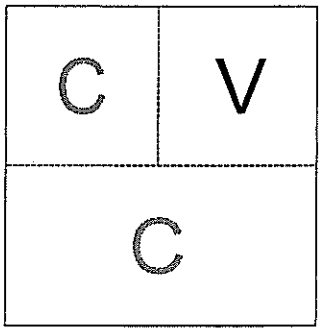
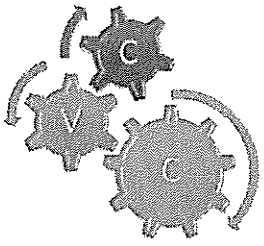
Syllabic construction 2

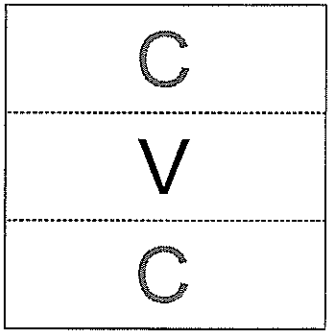
Writing

38. Combine the consonants, vowels and *batchim* (final consonants) to complete the chart.

	ㄱ	ㄴ	ㄷ	ㄹ	ㅁ	ㅂ	ㅅ	ㅇ
ㅏ	광							앞
ㅓ		널						
ㅗ			돕				손	
ㅜ				룩				
ㅣ					믿			
ㅐ						뱃		
	ㅇ	ㄹ	ㅂ	ㄱ	ㄷ	ㅅ	ㄴ	ㅍ







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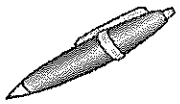
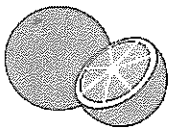
39. Write the word for each image below.

	펜			
	페인트			
	색소폰			
	택시			
	오렌지			
	넥타이			
	핸드백			
	치킨			
	드럼			

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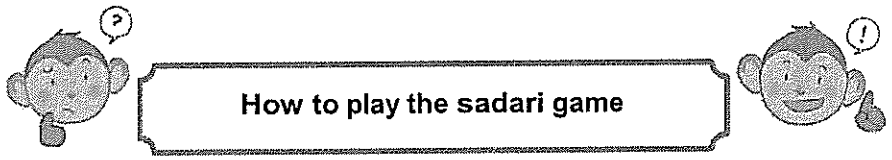
40. Using the 사다리 게임 *sadari* game, find eight letters hidden in the picture below.

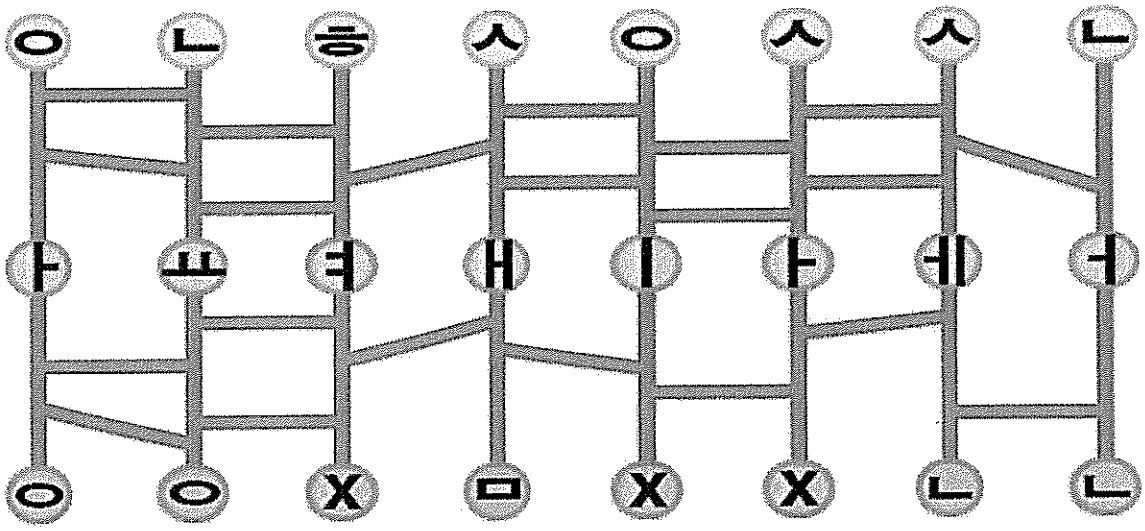
Combine consonants and vowels to make each letter.



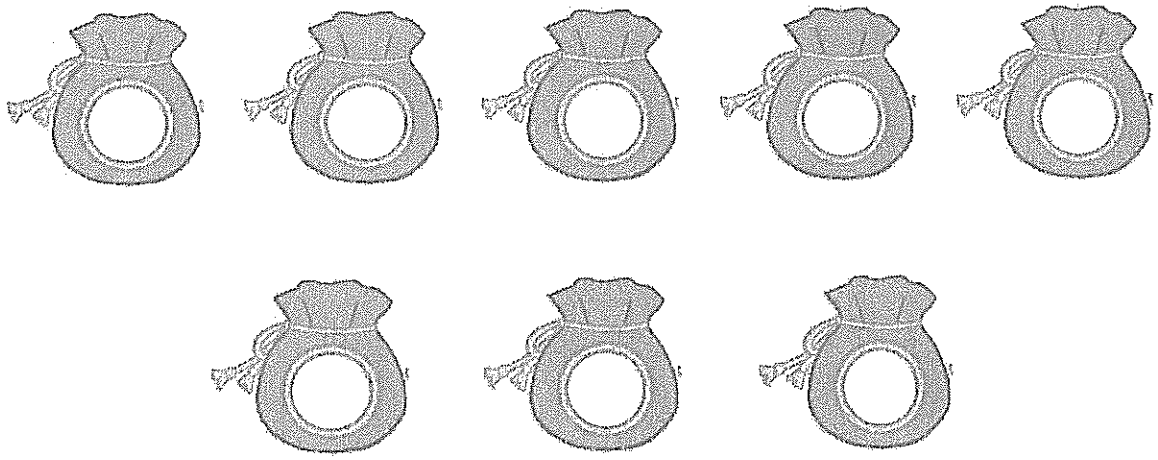
How to play the sadari game

Choose the top end of the line under each consonant. Follow it down and turn each time when you meet a horizontal line. You may need to turn right or left. Keep moving down until you reach a final consonant.

Start at the top of the next vertical line until you have found each complete syllable.



Now, write down the eight syllables that you found. Read the expression aloud. Do you know what this means?



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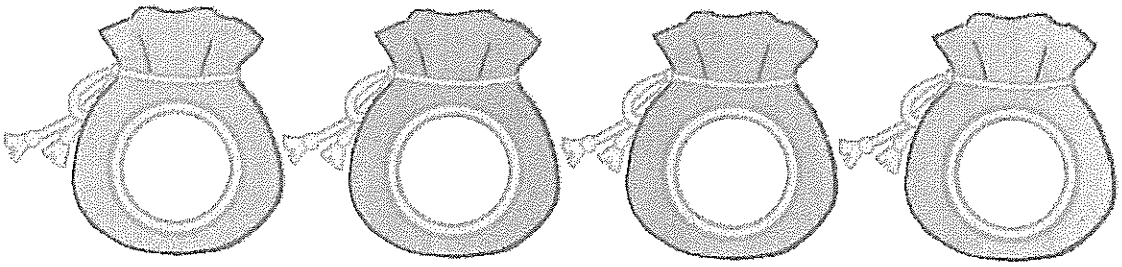
Listening

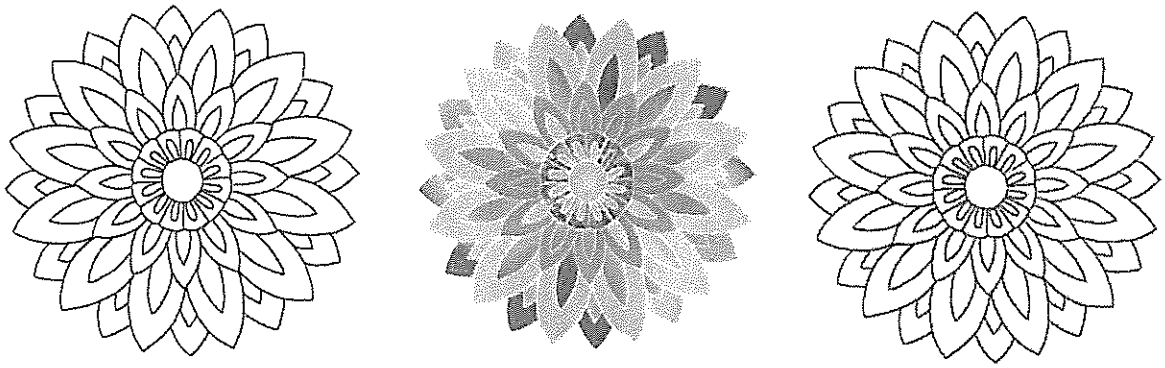
41. Listen carefully and circle the sounds that you hear. Track 15

1)	강	김	2)	빈	빛
3)	박	백	4)	권	훤
5)	황	훙	6)	송	숭
7)	인	잉	8)	진	정

42. There are several common Korean surnames. Do you know which ones are the most common? Write down your guesses.



Now listen and check the answers. Track 16



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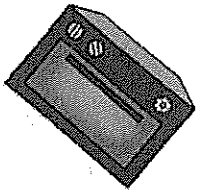
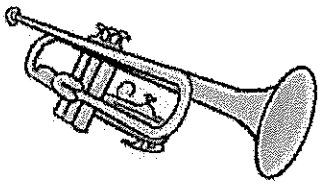
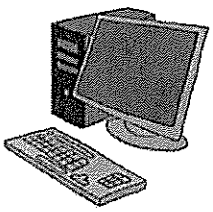
Listening and writing

43. Listen carefully and fill in each box to complete a word. Track 17

1)	공		2)	숟		
3)		마	4)		터
5)		원	6)		꽃
7)		트	8)	국	
9)	오		10)	트	
11)	드		12)	크	







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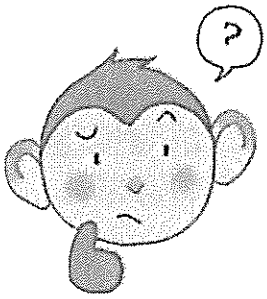
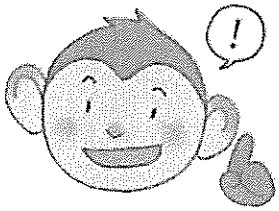
Reading and writing

44. Read the words in the box below. Find the words that have the final *batchim* sound 't' and write them in the space provided.

국	부엌	밖	눈	문	숱	가락	옷	낮
꽃	밑	까맣다	있다	집	물	불	별
엄마	감	잎	공	빛	빗	빚	닭	값



Batchim	Sound value
ㄱ ㅋ ㄲ	k
ㄴ	n
ㄷ ㅅ ㅈ ㅊ ㅌ ㅎ ㅆ	t
ㄹ	l
ㅁ	m
ㅂ ㅍ	p
ㅇ	ng



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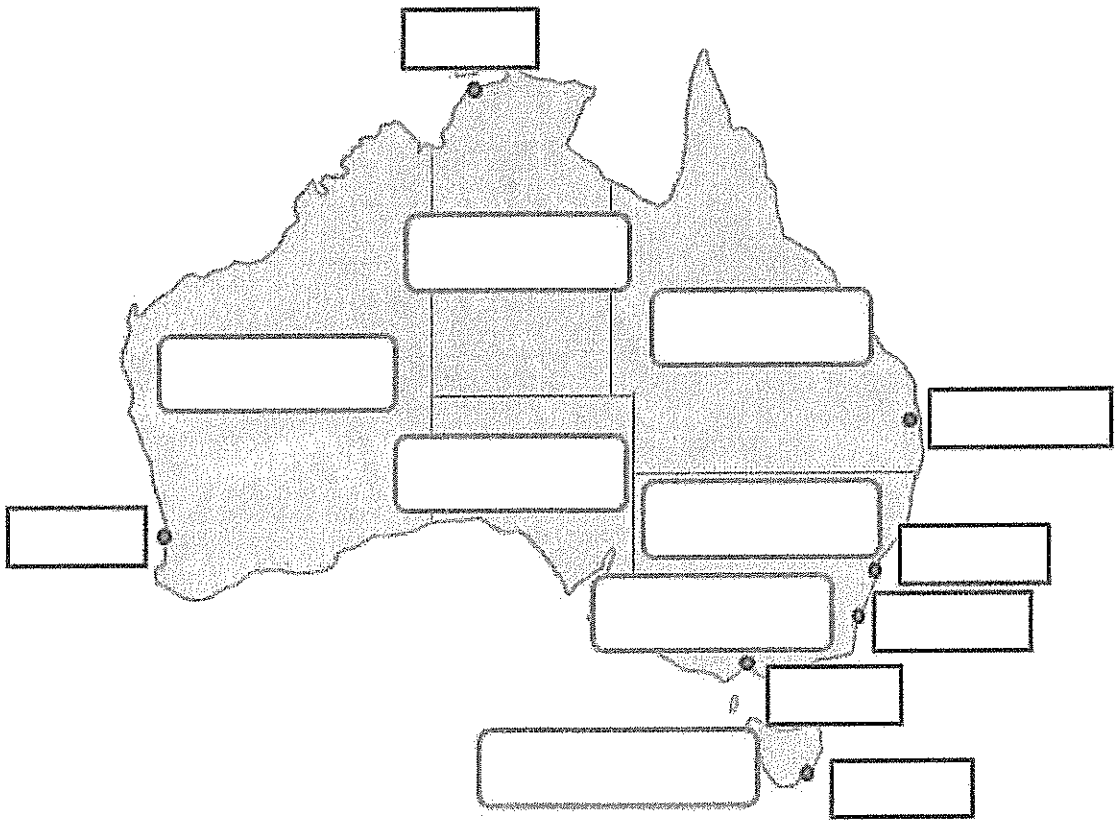
45. Label the names of the cities and states on the map below.



Capital: 캔버라

Cities:
다윈, 시드니, 브리즈베인, 호바트, 멜버른, 퍼스

States:
빅토리아, 뉴사우스웨일즈, 태즈메이니아, 퀸즐랜드,
웨스턴 오스트레일리아, 사우스 오스트레일리아,
노던 테리토리

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46. With your partner, read the following loan wards and work out the meaning of each word.

	Loan words	Meanings
1)	컴퓨터	
2)	초콜릿	
3)	쁄트	
4)	아이스크림	
5)	트럼펫	
6)	텔레비젼	
7)	샌드위치	
8)	베이컨	
9)	핸드백	
10)	오렌지	

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	Loan words	Meanings
11)	미트파이	
12)	슈퍼마켓	
13)	디즈니랜드	
14)	피자	
15)	멜론	
16)	미키마우스	
17)	민트	
18)	키위	
19)	시드니	
20)	커피	

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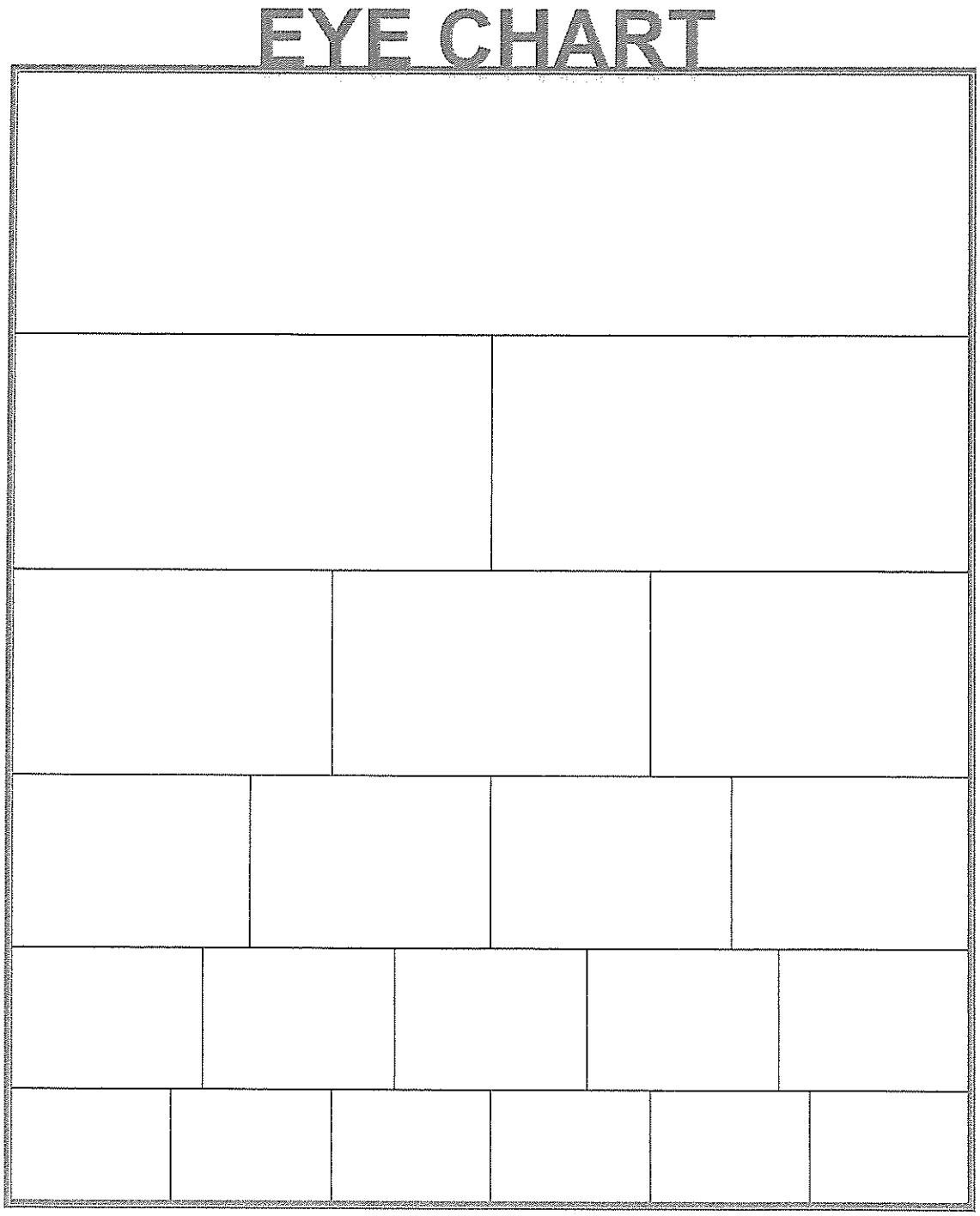
47. Imagine you are asked to create an eye chart for the optometrist. Fill out the eye chart with Korean letters in the table below.



Now, with your partner take turns being the optometrist. Ask your patient to read aloud each line of your chart.

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Review: Hangeul chart 1

	ㅏ	ㅑ	ㅓ	ㅕ	ㅗ	ㅛ	ㅜ	ㅠ	ㅡ	ㅣ
ㄱ										
ㄴ										
ㄷ										
ㄹ										
ㅁ										
ㅂ										
ㅅ										
ㅇ										
ㅈ										
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ㅋ										
ㅌ										
ㅍ										
ㅎ										

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Review: Hangeul chart 2

	ㅔ	ㅐ	ㅖ	ㅒ	ㅘ	ㅝ	ㅙ	ㅞ	ㅚ	ㅟ	ㅢ
ㄱ											
ㄴ											
ㄷ											
ㄹ											
ㅁ											
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ㅍ											
ㅎ											

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Year 8

Absence Work

PDHPE

Week 8 and 9

You will need to do the following:

- Social Media Roles Worksheet (see attached) – assess the screenshots to identify the people doing the bullying behaviour, the bystanders and the defenders in each scenario.
- Formative Task: Responding to cyberbullying worksheet (see attached) – look at the facebook post by Jane Doe and respond to the comment made by one of her facebook friends. Your response needs assertive and advocate for Jane Doe who is your friend.
  - See the criteria below as to how this will be marked

A	Appropriately responds to the cyberbullying post with assertiveness and positively advocates for the friend
B	Appropriately responds to the cyberbullying post with assertiveness
C	Appropriately responds to the cyberbullying post
D	Response to the post is not appropriate or lacks assertiveness
E	Only provides one relevant point OR insufficient attempt at the task

- View Megan's Story https://www.youtube.com/watch?v=bStezpLKxLc
- Complete the worksheet 'Megan's Story'.
- You now need to write a positive ending to the Megan's Story video.

Social Media Roles

In the following examples, indicate who is exhibiting bullying behaviour. Who is a 'bystander'? Who is responding appropriately? For those who are communicating inappropriately, how could they have contributed differently? Re-write those comments that could make a more positive contribution.

Example 1 – Social Networking Party

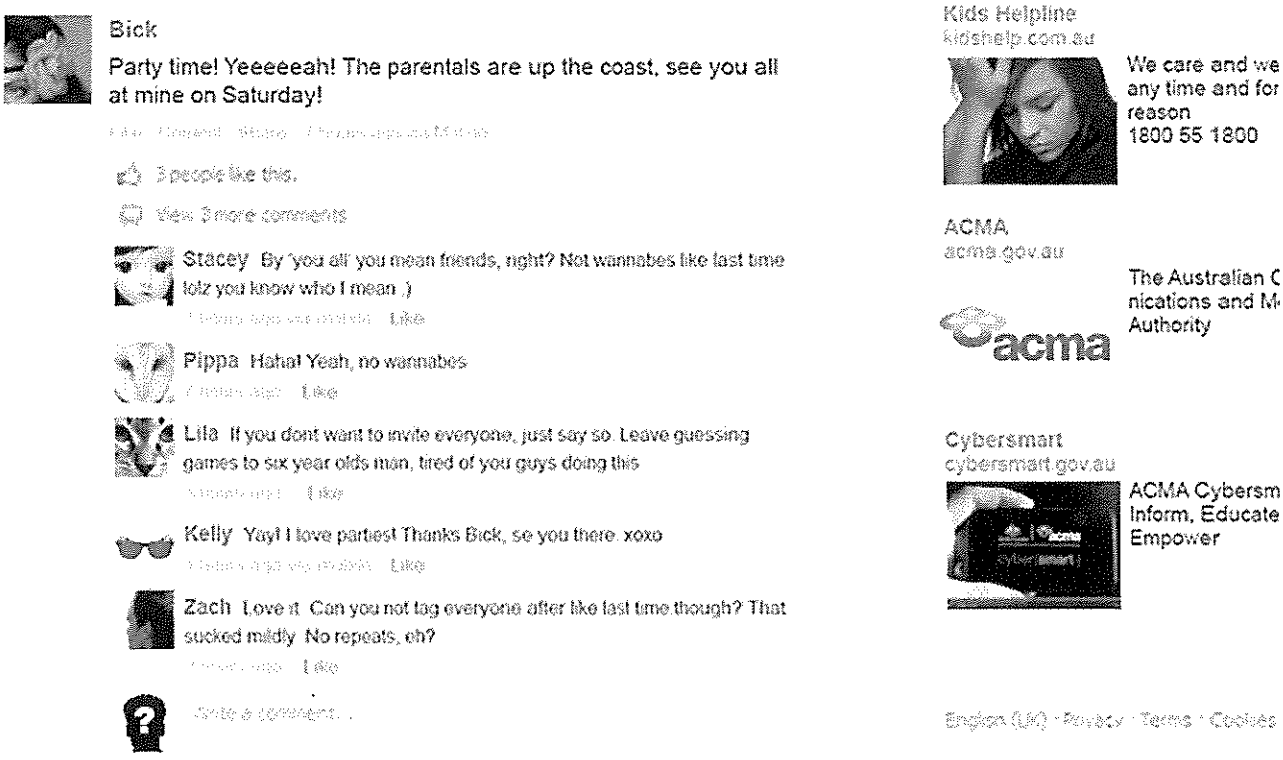


Figure 1 - This image shows an exchange on a social networking site. The original post refers to a party, some comments suggest that not everyone should be invited, like the 'wannabes' and there is a request that photos of the party not be 'tagged' online.

Example 2 – Social Networking Dress

Figure 2 - This image shows comments from a social networking site regarding a post about a dress which someone is considering wearing to a formal event. Some comments are supportive, while others are insulting.

Example 3 – Video Site Fight

Figure 3 - This image shows an online video site and comments concerning a video titled "Ethan v Jackson at Middle Park West". The image of the video shows two boys who appear to be having a physical confrontation. Some comments are inflammatory, while some suggest that the video should be removed, and that reputations may be damaged.

RESPONDING TO CYBERBULLYING

Look at the following post by Jane Doe and respond to the comment made by one of her Facebook friends. Your response needs to be assertive and advocate for Jane Doe who is your friend.

Jane Doe

OMG, my crush winked at me. Should I say 'hi' to him.

Like · Comment · 4 minutes ago · 🌍

4 people like this.

No way he was winking at you, you fat pig...

Megan's Story

Megan's Story - Think You Know

1. Why do you think Megan took that photo and sent it on her mobile phone?

_____

_____

2. What should her boyfriend have done with Megan's photo?

_____

_____

3. How did Megan's classmates contribute to the problem?

_____

_____

4. How will Megan's actions, and those of her classmates, affect her in the future?

_____

_____

5. Would things have been different if a boy had sent an image of himself?

_____

_____

Week 10 and 11

You will need to do the following:

- Define what the term 'sexting' means in your book
- Watch the following clip https://www.youtube.com/watch?v=jdiTd1Xfuj0
- Answer the following questions in your book:
    - Do you know of anyone that has received a sexting image or video?
    - What would you think if you saw a naked or sexual image of a friend/young relative? Would it change the way you view them or is this normal behaviour now?
    - What do you think about sharing naked or sexual images in a relationship if both parties agree they won't share the pics?
    - Is sexting covered by any law in Australia?
    - What do you think about celebrities complaining about their sexting images being leaked online?
    - Name three risks in sending sexting images
- Formative Task - Read the two scenarios (see attached) and answer the questions about them
    - See the criteria below as to how this will be marked

A	Thoroughly describes what they would do and provides a range reason(s) why for each scenario
B	Describes what they would do and provides reason(s) why for each scenario
C	Outlines what they would do and provides a reason why for the scenarios
D	Outlines what they would do with no reasoning
E	Insufficient attempt to answer the worksheet

- Complete the What Would You Do worksheet (see attached).

SEXTING SCENARIOS

Scenario 1 – Chelsea

A girl in Chelsea's friendship group at school, but not a close friend, is sexting her boyfriend. Everyone knows about it and is talking about the girl's actions. The image has been sent to many people in the school. The girl doesn't seem to know everyone is aware of what she is doing.

Group Discussion:

What should Chelsea do?

Should we get involved in other people's issues? Do we have a moral responsibility?

What are the pros and cons of getting involved?

Is Chelsea part of the problem if she doesn't get involved and speak up?

Write down your answers and reasons.

Scenario 2 – Alex

Alex sent a sexy pic to Sam but then they had a fight and broke up. Sam is now threatening to send the photo around the school if Alex doesn't agree to go out again.

Group Discussion:

If you were Alex's friend what would you advise him/her to do?

To what extent is Alex responsible for what is happening?

Do you think Sam's threat is cyberbullying behaviour?

What would be the best way of managing this for Alex? Think of supports he/she can lean on, who might help.

Write down your answers and reasons.

WHAT WOULD YOU DO

Behaviour	Action
a. What advice would you give a friend who was worried about a sext they had sent?	
b. What advice would you give a friend who was worried about a sext they had received?	
c. Who would you seek advice from if a sext message had gone wrong (e.g. been shared with others, uploaded to the internet).	
d. Who could you report it to?	
e. What might happen to you if you have been reported for sexting?	

Year 8 work for English

- Students have an assessment task to work on. (See attached.)
- There is a scaffold booklet to help them with each section of this assessment task. The can choose to use the scaffold booklet or they can work independently on each section of their assessment. There are samples in this to help guide them.
- If they finish the task there are some literacy exercises for them to work on.
- If they finish the literacy exercises we would suggest reading a book or articles of their choice.

English Faculty

Year 8 Assessment Task 1

Term 1 2020

STUDENT NAME	CLASS

DETAILS	
Topic: *Through My Eyes – Poetry and Identity*	
Due date: Friday 27th March, 2020	**Date of issue:** Friday 13th March, 2020
Type of task: Portfolio of work (reading and writing)	

TASK DESCRIPTION

This term in English, you have been studying the topic *Through My Eyes – Poetry and Identity.*

In this unit you have been learning about different ways that identity can be represented in texts. You have been using this knowledge to respond to and compose different types of texts.

For your assessment task, you are required to submit a portfolio of **four texts:**

- Letter
- Descriptive Passage
- Poem – My Memory
- Poem – How to Make a 13-Year-Old

You will be given time during lessons to complete your texts, however, some time may need to be spent at home polishing your work.

Text One: Letter

You are to write a letter to your future self. You are to describe your hopes and wishes for the future. You are to write as if you are talking to yourself and predict what the future may bring. You will be given time in class to compose your letter.

Tips:

- Ask yourself questions
- Use the words "I hope"
- Write in the first person using the words "I and me"

Text Two: Descriptive passage

You are to compose a passage that describes one physical place in the school. You will be given time in class to explore this place and to compose your piece. Your passage should be written so that the reader can imagine actually being there.

Tips:

- Use descriptive language, such as adjectives
- Appeal to all five senses
- Choose a place that you enjoy spending time

Text Three: Poem – My Memory

You are to compose a poem about a special memory in your life. This memory is to be an important positive event that you have experienced. You will be given time in class to compose your piece.

Tips:

- Use at least three stanzas in your poem
- Include at least **three** poetic techniques
- Use figurative language
- Appeal to all five senses

Text Four: Poem – How to Make a 13-Year-Old

You are to compose a poem called, 'How to Make a 13-Year-Old'. This poem should explore what you think are the important parts of being 13. You are to apply the recipe structure, studied in class, for this poem. You will be given time in class to compose your piece.

Tips:

- Use the recipe structure
- Apply at least **three** poetic techniques
- Use figurative language
- Appeal to all five sense

NESA TERMINOLOGY

Apply - use, utilise, employ in a particular situation

Describe - provide characteristics and features

Predict - suggest what may happen based on available information

Recall - Present remembered ideas, facts or experiences

MARKING CRITERIA

You will be assessed on how well you:

- Use language to express yourself
- Express your relationship to the world around you
- Express your own personal sense of identity
- Edit and publish your work

OUTCOMES TO BE ASSESSED

EN4-1A - responds to and composes texts for understanding, interpretation, critical analysis, imaginative expression and pleasure

EN4-2A - effectively uses a widening range of processes, skills, strategies and knowledge for responding to and composing texts in different media and technologies

EN4-7D – demonstrates an understanding of how texts can express aspects of their broadening world and their relationship within it

EN4-8D - identifies, considers and appreciates cultural expression in texts

SUBMISSION INSTRUCTIONS

You are to hand your assessment task to your teacher **during your English lesson** on the due date that relates to your class. Any submissions after this time will be considered to be late.

You are to submit your portfolio on paper (either handwritten or typed).

What do I do if I am absent?

If you are absent the day of an assessment task or examination, you MUST:

- report to the teacher or head teacher of the faculty on the first day of return to school
- supply a suitable explanation e.g. letter, doctor's certificate

The Head Teacher will decide and advise you whether:

- you will sit for a substitute task, OR
- can submit the task late, OR
- be given an estimate, OR
- the task will be recorded as a Non-Attempt

MARKING GUIDELINES

Outcome	Grade	Performance Descriptor
EN4-1A - responds to and composes texts for understanding, interpretation, critical analysis, imaginative expression and pleasure	A	Demonstrates outstanding control of language and skilful use of poetic elements
	B	Demonstrates thorough control of language and highly effective use of poetic elements
	C	Demonstrates satisfactory control of language and appropriate use of poetic elements
	D	Demonstrates basic control of language with minor consideration of poetic elements
	E	Demonstrates limited control of language with little or no consideration of poetic elements
EN4-2A - effectively uses a widening range of processes, skills, strategies and knowledge for responding to and composing texts in different media and technologies	A	Presents a portfolio of texts that reflect an outstanding ability to plan, draft and edit responses to create polished texts
	B	Presents a portfolio of texts that reflect a highly developed ability to plan, draft and edit responses to create polished texts
	C	Presents a portfolio of texts that reflect a sound ability to plan, draft and edit responses to create polished texts
	D	Presents a portfolio of texts that reflect a basic ability to plan, draft and edit responses to create polished texts
	E	Presents a portfolio of texts that reflect limited ability to plan, draft and edit responses to create polished texts
EN4-7D – demonstrates an understanding of how texts can express aspects of their broadening world and their relationship within it	A	Composes a range of texts that demonstrate an outstanding ability to express relationships with the world around them
	B	Composes a range of texts that demonstrate a highly accomplished ability to express relationships with the world around them
	C	Composes a range of texts that demonstrates a satisfactory ability to express relationships with the world around them
	D	Composes texts that demonstrate a basic ability to show personal connection with the world
	E	Composes texts that demonstrate little or no ability to show personal connection with the world
EN4-8D - identifies, considers and appreciates cultural expression in texts	A	Composes texts that skilfully consider identity and cultural expression
	B	Composes texts that thoughtfully consider identity and cultural expression
	C	Composes texts that appropriately consider identity and cultural expression
	D	Composes texts that attempt to consider identity and cultural expression
	E	Composes texts that make little or no attempt to consider identity and/or cultural expression

FEEDBACK
Areas where you have performed well: • • •
Areas where you need to improve: • • •
Strategies to help you improve: • • •

Some tips for writing a descriptive passage.

Bringing the setting to life in your reader's mind is a vital element of writing. But how can we do this effectively?

We can use **sensory language** to evoke an image of your setting (sight, smell, sound, taste, touch) and we can use **figurative language**, which is what this post will be focusing on.

What is figurative language?

Figurative language is the opposite of literal language. Literally, there is a fire in the forest. But by comparing the fire to a squirrel, Golding successfully paints a comprehensive picture in the reader's mind. Writers use this type of imagery to better communicate events, characters and setting. However, it takes practise and consideration of the intended impact to do this successfully.

There are many types of figurative language, but let's just take a look at three. **Similes, metaphors** and **personification.**

We will explore them by looking at the longer passage from Golding's book.

Smoke was rising here and there among the creepers that festooned the dead or dying trees. As they watched, a flash of fire appeared at the root of one wisp, and then the smoke thickened. Small flames stirred at the trunk of a tree and crawled away through leaves and brushwood, dividing and increasing. One paten touched a tree trunk and scrambled up like a bright squirrel. The smoke increased, sifted, rolled outwards. The squirrel leapt on the wings of the wind and clung to another standing tree, eating downwards. Beneath the dark canopy of leaves and smoke the fire laid hold on the forest and began to gnaw. Acres of black and yellow smoke rolled steadily toward the sea. At the sight of the flames and the irresistible course of the fire, the boys broke into shrill, excited cheering. The flames, as though they were a kind of wild life, crept as a jaguar creeps on its belly toward a line of birch-like saplings that fledged an outcrop of the pink rock. They flapped at the first of the trees,

and the branches grew a brief foliage of fire. The heart of flame leapt nimbly across the gap between the trees and then went swinging and flaring along the whole row of them. Beneath the capering boys a quarter of a mile square of forest was savage with smoke and flame. The separate noises of the fire merged into a drum-roll that seemed to shake the mountain.

Similes: A simile compares two things using the word 'like' or 'as'.

When Golding writes *'One patch touched a tree trunk and scrambled up **like** a bright squirrel,'* this is a simile.

Metaphor: This is a direct comparison between two things without using the words 'like' or 'as'.

'The squirrel leapt...' is an example of a metaphor because it directly compares the squirrel with the fire — it is as though the squirrel IS the fire.

Personification: Here, inanimate objects are given human characteristics. The flames 'crawled' the smoke 'began to gnaw' — crawling and gnawing are things that humans do, not smoke. However, by giving the smoke human characteristics, the description is more evocative and poetic.

Of course, simply including figurative language in your piece does not automatically mean that the description of the setting is better or more interesting. Try to move away from simple similes such as, *'Her eyes were as brown as chocolate'* and try to engage with the question, 'What image am I trying to convey? What feelings do I want to create?'

A couple of tips: Consider WHY you are including this comparison. Are you comparing the river to a snake simply to show its movement, or is there a deeper meaning about the water being dangerous or unpredictable? Remember, comparisons should only be made if they further the reader's

understanding of the setting. If you can't find a suitable comparison, why not focus on descriptive and sensory language instead?

Descriptive passage - using descriptive language. Sample #1

DESCRIPTIVE ESSAY ABOUT MY HOUSE

The perfect house is a place where a person feels safe not only from the elements but also from all the worries and troubles of the outside world. I can confidently claim that I am a happy owner of a house where I feel relaxed and confident and where I want to spend as much time as I can. I do like going out and visiting new places, but only at home, I can be completely free and comfortable. It is a place filled with good memories and a place where I hope to start my own family someday. My house may not look impressive for many, but it is special for me, as I love every small detail in it.

My house has a dark red roof and beige walls, as well as brown wooden windows that can be wide opened on sunny days. I especially love the window in the living room as it faces the street where large old oak trees grow. The house has only three bedrooms, one living room, one kitchen, and one bathroom. However, all rooms except for one bedroom are spacious and filled with natural light. I love windows facing the sunny side, and I cannot even imagine how people live in dark, shady apartments with limited natural light. There is a door that leads from the kitchen to the small backyard, so my family has an opportunity to have a dinner outside when the weather is fine. We also have the small garage on the left side of the house, and my father likes to call it his office. He spends a lot of time there as he likes designing and constructing different technical stuff.

The house is surrounded by the green lawn that my father cuts and waters regularly. My mother, in turn, is fond of gardening, so we have many roses on both sides of the patio. In spring and summer, they smell deliciously and attract envious eyes of our neighbors who do not understand why their own roses look so mediocre compared to ours. The territory is also surrounded by the fence, which mainly has a decorative purpose. There is also a plane tree growing in the backyard, under which my father put a nice wooden table with chairs.

As for the interior, my house has nothing exceptional. It has a regular zoning and was apparently built by an architect with too little imagination. However, my mother managed to make this place special. I need to note that my mother likes minimalism, so she puts all things in wardrobes and cupboards. As a result, there

is much space in our house, and one cannot risk banging into numerous decorative chairs and tables. However, the rooms do not look empty. We have may high-quality, comfortable pieces of furniture like the large brown leather couch in the living room, a soft white carpet in my bedroom, or an amazing wooden table in the kitchen that I love the most. All things fit each other well, which shows that my mother took pains to work on the design.

Moreover, my mother and I love house plants, so there are plenty of them in all the rooms. We have large and small ones, with long and short leaves, with flowers and without them. Surprisingly, our house does not look like jungles, as my father constructed beautiful wooden shelves and hangers to arrange everything nicely. I love days when the sun is shining into the window, and the leaves begin glowing with this deep green color. It feels like the house is part of the outside world, only more peaceful and comfortable. I can say that my parents know how to create the special atmosphere in the house, and I admit that I need to learn much from them to transform a regular house into an exceptional home

Descriptive passage - using descriptive language - Sample #2

My Favorite Café

My favorite place to relax is a small café down the street from where I live. This café is on a small side street and as soon as you see it, you feel like going in. There are three windows on either side of the door, and each window has a small window box with brightly colored flowers. **There is a small wooden door that opens into the café, and as soon as you go in, you can see a dozen small tables all around the room.** I always like to sit at a small table in the corner near the front windows. **From here, I can look at the artwork on the walls and at the pretty green plants hanging from the ceiling.** With a strong cup of coffee and a good book, I feel very happy and relaxed in my favorite place.

Descriptive passage – using figurative language #3

Because so much of our language is "figurative" rather than literal, there is always room for disagreement about the meanings of words, phrases, and texts. Different groups of readers may well "decode" such language in different ways, according to their beliefs, values, and social practices. In exploring the language of "literary" and "nonliterary" texts, we need to consider the range of readings made possible by figures of speech, and how this range of possibilities is limited or closed off by other features in the text and by specific ways of reading.

Practice

The following extract is from Colin Thiele's story "The Shell." In these passages, some of the figurative language has been set in **bolder** type.

> The green sea swept into the shallows and **seethed** there **like slaking quicklime**. It surged over the rocks, tossing up spangles of water **like a juggler** and catching them deftly again behind. It raced knee deep through the clefts and crevices, twisted and tortured in a thousand ways, till it swept **nuzzling and sucking** into the holes at the base of the cliff.
>
> The shell lay in a saucer of rock. It was a green cowrie, clean and new, **its pink undersides as delicate as human flesh**. All around it the rocks dropped away sheer or **leaned out** in an overhang streaked with dripping strands of **slime like wet hair**. The waves spumed over it, hissing and curling, but the shell **tumbled the water off its back** or just rocked gently **like a bead in the palm of the hand**.

[In the course of the story two fishermen are swept from the rocks by a wave "like a hand." The story concludes with two policemen searching the beach for the bodies.]

> The first man searched down along the shore and stopped near a rock exposed by the ebb. "Look at this shell," he called. "It's a beauty. A green cowrie."
>
> "**Blood money! The sea's buying you off!**" He watched distastefully as the first man reached down and closed his fingers beneath the smooth pink underside of the shell, **as delicate as human flesh**. And the sea came **gurgling** gently round his shoes, **like a cat** rubbing its back against his legs.

[Note: quicklime = a fizzy, acid solution]

Memory poem sample #1

MADELINE P.

A normal winter night, sitting
around that large wooden dinner
table with my family. My parents,
siblings, and grandparents come
around to enjoy the meal.

We await the amazing roast,
sizzling in the oven, dozens of smells
waft into our nostrils. Baked potatoes,
lamb, carrots, even the beans smell
delicious. We know our family dinner
is on its way.

Laughing, chatting, bickering
around the table of each other's
interesting days, enjoying our
usual Sunday feast.

A normal winter night, sitting
in our huge, open lounge room,
we watch our favourite TV shows.
Getting comfortable in front
of the heater, running
to get the best spot is how
the night goes.

A normal winder night, Sunday,
spent together; no work, no school,
no homework. The perfect lazy day.
Sitting together on that big, comfy
lounge I am reminded that the floors
and walls make a house, but
family makes a home.

Memory poem sample #2

JILL B.

It is a cold day.
Dad's asleep, mum's at work;
we're grounded...for the week.
Maybe we didn't do our chores,
maybe we were too noisy.
We were stuck inside for a week.
We pulled out the craft box, full
of art supplies that hadn't
been used. We got lost
in our imaginations. We crafted
toghether sock puppets and stage sets.
This looks like it's as good as it gets.

We grabbed the video camera,
full of old home videos. We set up
a scene and recorded our
sock puppets. We did it
all in silence, fearing another
week of being grounded.

We held in our giggles, as we made
our sock puppets dance,
we held in our screams
as we made them turn evil.
Our week of grounding
became something fun.
We created a world,
all in silence. We got lost
in our own imagination.
Before we knew it,
the grounding was done.

The next week came.
We ended up begging mum
to ground us again.

Recipe poem sample #1

CHLOE S.Z

Firstly and most importantly,
take family and add them right
into the mix with a truckload of
love. Throw in a lifetime of dreams
and hopes; stir it all into a whirlpool
of emotions.

Add a load of the loudest laughter
imaginable, an ocean of endless fun
along with a hint of late night movies,
chocolate, hugs and fluffy marshmallow
socks. Be sure

not to forget the avalanche of tears,
disappointment and failure –
but also the bundle of excitement,
forgiveness and success.

Recipe poem Sample #2

KAVISHA S.

Have ingredients laid out
on the kitchen table.
A large bowl should be
placed out in front of you.

Begin with adding bitter
ingredients first.
A sprinkling of hatred
stirred in with a handful
of anger, and two cups
of loud yelling.

Now with the sweet.
Chuck in a sea of laughter,
a tablespoon of kindness;
beat in a cup of warmth,
with a carton of tight hugs.

Finish it off with a truckload
of tears, best with both
tears of happiness and
sadness. Then sew with
a lifetime of love and
a pinch of never-ending
happiness.

Recipe Poem

Name_____Block_____

Hooray! You get to write a recipe, using the language of cookbooks, for something you could never use a recipe to make. It works best if the topic chosen is abstract, rather than concrete: a recipe for love, for peace, for friendship. You choose the topic and whether you want it to be humorous or serious.

Examples:

Memory Milk

Place 3 raisins, a square of chocolate
And 2 Cheerios in a cup of milk.
After 5 minutes, strain the milk
And drink it.
Note: The milk contains the "memory"
of the raisins, chocolate and Cheerios.

--Sparrow

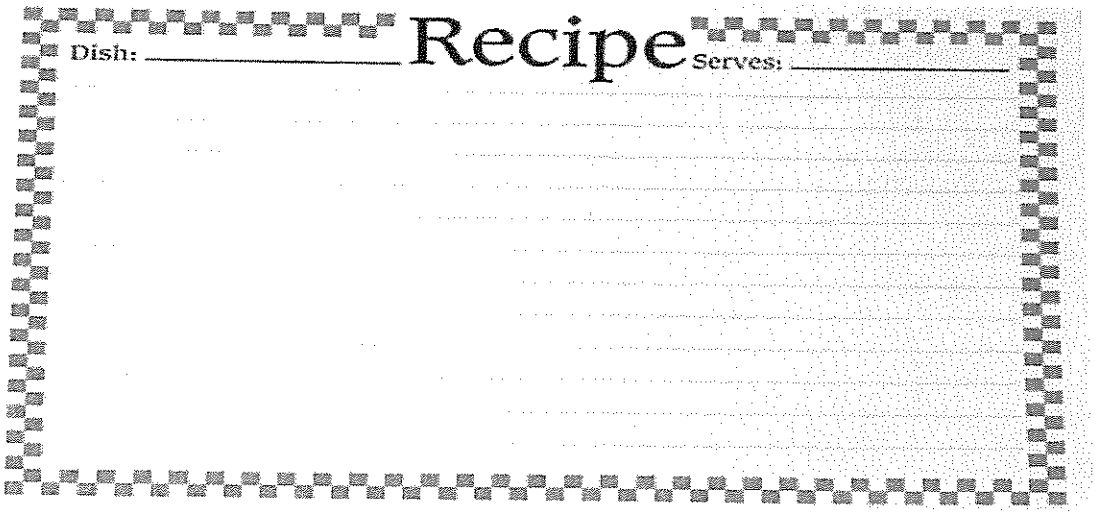
The humor comes from thwarted expectations. One expects that "memory milk" is a drink to improve memory.

Recipe for Friendship

Take two lonely people
And add a cup of jealousy,
one cup of forgiveness
And two cups of fun.
Mix until a thick bond of trust appears,
Then add three-quarters of a cup of sugar.
Test friendship with hate and disbelief.
Add sleepovers, pool parties, and laughs.
Let stand till unbreakable friendship appears,
(Try to test bond.)
It tastes of success, hope, and joy.
(This recipe works almost always.)
--Patricia Varady

Laziness

Take 3 cups sleepiness
Throw in doing nothing
Fry in some t.v,
Bake distractions until nothing is getting done
Serve laziness on a Lazy Boy chair in front of the t.v.
--Jason Burney



(I.4.13 Standards: follows directions explained in technical text; 2.1.4 recognizes aspects of theme; 3.2.4 proofreads and edits for conventions and format)

Word ideas for Recipe Poems: loyalty, art, hope, mistakes, abundance, theater, divorce, marriage, amnesia, illness, destruction, heroism, magic, music, confusion, rage, pollution, fear, jealousy, faith, truth, fall, summer, health, masculinity, boredom, dance, poetry, maturity, war, death, tears, talent, sorrow, energy, smiles, justice, mercy, sleep, dream, femininity, noise, genius, success, stardom, laziness, poverty, memory, decay, winter.

Use this **form to brainstorm ideas**. Then choose the best ones for your poem. You do not have to include every step in the final poem and may add others not on this list. Some recipes may call for heat, for example. This is YOUR poem.

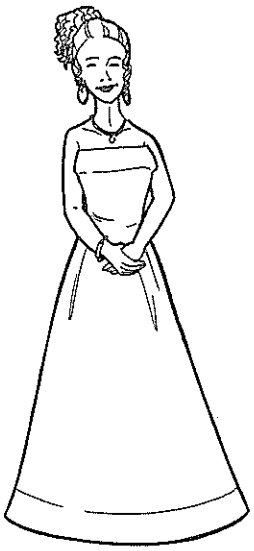
Take _____(ingredients)_____
_____Put _____
_____(ingredients you need to combine) IN _____(container)
Mix (or blend, stir, chop, etc.) with (utensil or machine)_____
_____
Until_____
_____(how you can tell it's ready)
Pour (or throw, drop, etc.)_____
_____
Cook (bake, broil fry, etc.,) in a _____
At_____(temperature) Until_____
_____
You can tell it's done when_____
_____
Let stand (cool, etc.) until_____
Add (sprinkle on, etc.)_____
Cut (slice, chop, etc.) and serve (with, to, etc.)_____
_____

PART 5

EDITING AND WRITING

UNIT 38 GRAMMAR IN USE

What if correct grammar does not suit the style of your writing? If there is a justification for 'bending the rules', go ahead. In spoken and written English, everything is controlled by the purpose (or style) of the writing. Let's look at some variations and how they affect the way we shape words and sentences.



Formal writing

Formal writing (like formal events) demands a strictly 'correct' style. Examples include letters to authority figures, invitations to weddings and many other events, and a school essay on a serious subject.

Example

Correct: I would like to inform the councillors that I am displeased about the increase in municipal rates.

Incorrect: What do you councillors think you are doing charging us more for rates?

Personal and anecdotal writing

An **anecdote** is a brief account of an interesting event. This style is often used in **personal writing** as it is more relaxed. It can allow for off-beat humour, structure and/or vocabulary.

Example

My childhood wasn't really a painful, distressing period of continuous torment. However, sad to say, many of my most interesting stories involve wooden spoons, running away and a cruel brother and sister!

Creative and imaginative writing

Even great writers sometimes 'bend the rules' of punctuation and grammar in creative styles. For example, starting sentences with *and* or *but* is considered incorrect, but writers do it to emphasise what follows.

Example

I knocked at the door in desperation. Nothing. I banged. And I yelled. Not a sound. I screamed. All was silent.

Informative writing

Informative writing can be:

- **Formal**, as in a travel guide.

> Melbourne Museum is free and open every day between 10 a.m. and 5 p.m.

- **Informal**.

> At the zoo, there's plenty to do and see. The great apes, in their jungle enclosure, are fantastic. The butterfly house is a must-see. And don't miss the monkey house – with its madcap cast of hyperactive simian characters.

Persuasive writing

Persuasive writing involves using **evidence** to support a **view** on an **issue**. It can use a formal style and structure, or employ a more humorous approach.

> Meet Australian society! We of the land of bronzed goddesses and blokes with bulging biceps! The land with babes, beer à la bulk and a bitty batch of brains.

Writing that tries to persuade by making fun of something, but which has an underlying serious message, is called **satire**.

Instructional writing

Instructional writing teaches how to do something. It can be formal or informal, depending upon the subject.

> How to persuade your parents to part with some money (humorous approach): Tell them you need new gear to be cool. Tell them movies are 'cultural'. Tell them they can't take it with 'em. Tell them anything – so long as they give you cash to splash.

Recipes are a common form of instructional writing.

Lyrical writing

Lyrical writing expresses emotions as in songs, poems, novels or personal writing. It *can* ignore the normal rules of syntax (sentence structure and grammar) and punctuation.

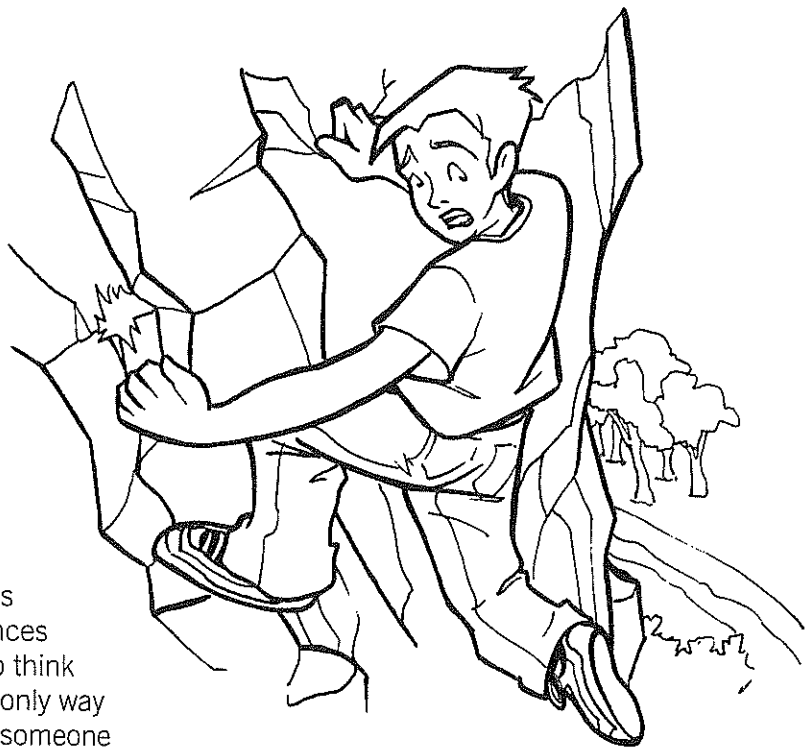
> Dawn. A golden
> hush. Waves, fall
> on silky sand.

Dramatic or descriptive writing

Dramatic or descriptive writing is used to create images of places or people. It makes us see, hear, feel, smell and even taste. It tends to be rich in adjectives and adverbs, and to vary sentence structure for dramatic effect.

Example

I climbed up the rock face, clinging perilously to the slimy handholds washed by the river and worn by countless hands and feet. Then suddenly I fell awkwardly, spinning downwards into the turbulent brown waters below.



Formal and informal language online

The way we communicate with one another through language is constantly shifting due to advances in technology. It's remarkable to think that less than 50 years ago the only way to communicate in writing with someone overseas was to send a letter.

Nowadays the only mail people tend to receive is bills or special invitations. In the workplace, and with friends, our main forms of communication are email, text messaging and social networking sites such as Facebook.

What we need to remember is that informal language online is not always appropriate. For example, in the workplace you might communicate with your colleagues via email but you would not use the same shorthand form of typing that you would on a status update on Facebook.

It's important to understand when and where formal language is required.

Examples

Informal online

In a text message or if you were chatting with someone online you might close your message with *spk l8r.*

Formal online

However, if you were emailing your teacher with an assignment or a question, this kind of text talk wouldn't be appropriate and you would use something like: *Best regards* or *Thank you.*

While abbreviations such as *LOL, LMAO, C U 2nite*, etc. are fine in text and messages online to friends, they should NEVER be used in assignments, emails to colleagues or teachers, or in any kind of formal writing. This is especially important when you start to apply for jobs.

Test yourself

1 Identify and write the type of writing after each piece.

a Dear Sir or Madam, I am writing on behalf of the Heart Foundation to ask whether you could consider donating to our current appeal. _____

b Unfortunately – or fortunately – according to whichever worldwide authority or member of my family you consult, I am a youngest child. _____

c Dad became scared at the signs of advancing age. Suddenly he began to comb his hair over the bald patch, changed his dress style and took up jogging. This was when we disowned him! The iridescent green, silky shorts and yellow training shoes were just too much! _____

d 'I am afraid I cannot convey the peculiar sensations of time travelling. They are excessively unpleasant. There is a feeling exactly like that one has upon a switchback – of a helpless headlong motion!' _____

e From around 8000 to 3000 BCE, people from North Africa, the Iberians, crossed the Strait of Gibraltar and settled the peninsula. Around 1000 BCE, Celtic tribes entered northern Spain, while Phoenician merchants established trading settlements along the Mediterranean coast. _____

2 Name the type of writing you would be expected to complete on the topics below.

a 'School uniforms should/shouldn't be compulsory'

b 'How to make a model aeroplane'

c 'Loneliness'

d 'My grandfather'

e 'The mountains in winter time'

f 'A wedding invitation'

g 'Childhood adventures'

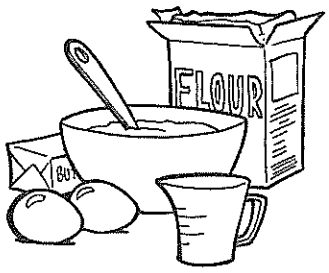
h 'Our great escape!'

i 'The wonders of the ancient world'

j 'The habits of teenagers'

Writing challenge

List the objects required (as in a recipe). Then give the instructions in point form on how to make something. Choose anything you know about.



2 Extend yourself

1. Alongside each of the styles given below, write a suitable topic.
   - **a** Creative/imaginative _____
   - **b** Anecdotal _____
   - **c** Formal _____
   - **d** Informative (formal) _____
   - **e** Instructional _____
   - **f** Descriptive (place) _____
   - **g** Personal _____
   - **h** Informative (personal/informal) _____
   - **i** Descriptive (person) _____
   - **j** Persuasive _____

2. State what style of writing these extracts are.
   - **a** Living languages, such as English, are constantly enriched with the addition of words to describe new inventions. However, innovations do not occur in languages such as Latin, which are no longer spoken in everyday situations.

     _____
   - **b** To teach your dog tricks, you must first gain his confidence. Pat him frequently and never mistreat him. Before trying to teach him tricks you must teach him that good behaviour earns rewards. If he comes when you call, give him a pat or a doggie snack. Now you are ready to begin teaching him tricks.

     _____
   - **c** Childhood is indeed a nightmare – for parents, that is! Children seem to be born with the capacity to drive parents insane. Let me tell you about some of my worst experiences.

     _____
   - **d** An icy blast lashed my face as I opened the door. Another below-zero winter morning! But as I crunched across the frosty lawn to retrieve the paper, I knew that the sun would later melt the frost. Nature always seemed to compensate for such cold punishments.

     _____
   - **e** The question of how much pocket money is too much, especially for teenagers, has created a stream of letters to the editors of various newspapers recently. Many parents believe that earning pocket money teaches responsibility, others feel that this is exploiting a young work force, while yet others believe that it is the quantity, not the method, that is likely to create problems.

     _____

Writing challenge
Write a personal piece about the most embarrassing thing that happened to you in your childhood.

1 Describe the style in which these topics would be written.

a A fairy story

b A legend

c A letter to a penfriend

d A complaint to a Member of Parliament

e A recipe for disaster

f Memoirs of a comedian

g A description of a person whom you admire

h A wonderful holiday destination

i Why teenagers should be able to get licences at 16

2 Identify the styles of the following brief extracts.

a Mrs Forsythe never left her house without her hat and gloves. She was a neat, precise type of person, who always walked as if she had no time to waste. On the rare occasions that she smiled, her face seemed about to crack.

b My early life was peopled with weird relatives. My grandmother had a square head; one of my aunt's arms reached the ground, and could be detached and leaned against the wall when not in use; Gramps had a claw at the end of one arm. I was mortally afraid of all these people.

c Initially no undergrowth marred the pristine blanket of white that stretched beneath the chairlift. Later, as the day wore on, the snow would begin to melt and the tops of shrubs would peep through, and if you listened closely you could hear the snow breaking free and falling to the ground with a plop.

d As the owner of a large, used car yard, I have been invited to talk to you about the traps of buying your first car. Make sure that you are choosing it for practical purposes and not to impress your friends. You must not only consider the initial purchase price but also the running costs. A small car less than 10 years old is worth considering.

UNIT 39 VARYING SENTENCES AND WRITING

Why do we need to structure and vary sentences? To add interest!

Writing can become boring if:

- all our sentences are of the same length or type
- we repeat words or structures – particularly the beginnings of sentences
- we write 'heaped together' sentences using *and* over and over.

To make our writing interesting and fluent we must learn how to vary our sentences.

The correct term for sentence structure is **syntax**.

Vary sentence length

Usually short sentences contain only one idea. A series of such sentences makes writing sound 'jerky', but combinations make it flow.

Example

The little child was sitting in the gutter. He had a bruise on his face. He looked very sad. He was crying.

Change to: The little child sat miserably in the gutter, his face bruised, tears running down his cheeks.

In the example, the ideas are exactly the same, but rewriting the sentence changed the order, joined ideas together and used more interesting words (*miserably*, *bruised*, *tears running*, etc).

Vary sentence beginnings

Restructuring sentence beginnings can create more interest for the reader.

Example

I ran down the road, horrified at what I had discovered.

Change to: Horrified at what I had discovered, I ran down the road. (*Horrified* grabs the attention more than *I*.)

Vary verb forms

We can use statements, questions, exclamations and commands.

I told my friend I was excited about winning the competition.

Change to: 'I won!' I shouted excitedly as my friend approached. 'Did you see me?'

Use interesting phrases

Using more descriptive text can really engage the reader.

The television presenter travelled high into the mountains.

Change to: After journeying through India, Kashmir and Nepal, the travelogue presenter climbed to the base camp of Mount Everest, high in the Himalayan range.

The second version in the example above begins with an adverbial phrase of place, adds another clause and names, gives more specific adjectives and overall uses better words (vocabulary).

Vary tenses

Instead of always writing in present tense, use past or future tenses.

I usually do (present tense) my homework and then I go (present tense) to cricket practice.

Change to: After I have completed (past tense) my homework, I go (present tense) to cricket practice. I will then (future tense) watch a bit of TV.

Use active or passive voice

The voice used helps to evoke different tones in the writing.

I surprised my teacher by getting my work in on time. (active)

My teacher was surprised when I handed my work in on time. (passive)

As well as grammatical 'tricks' like these, remember that using adjectives and adverbs (descriptive words) can add enormously to the 'colour' and interest level of your writing.

1 Test yourself

❶ Make this passage more interesting by varying the length, beginnings and structure of the sentences, and by improving the vocabulary.

My sister and I are going for a holiday. It should be interesting. We are going to the Kimberleys. This is an area in north-west Australia. One part is called the Bungle Bungles. There are interesting rock formations. We shall visit a large station. We shall also go on a cruise down a river in a gorge. I hope the weather will be good. Rain would spoil our holiday. I hope it will not be too hot either. Then I would get sunburned.

❷ Use direct speech, exclamations, questions, additional phrases or clauses or better vocabulary to improve these sentences.

a I told my friend that my football team beat hers.

b A talk was given to the class by the exchange student.

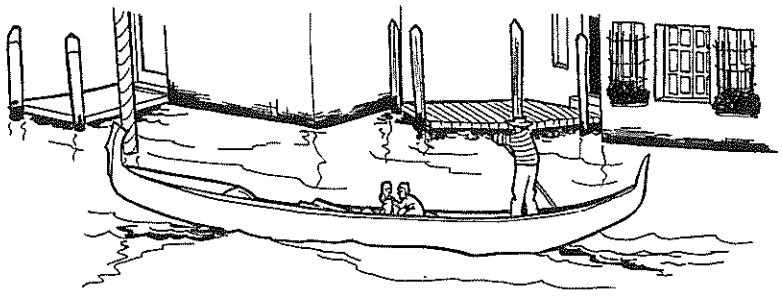
c I had a nice dinner last night.

d Brian asked me if I would like to go snowboarding.

e I wanted to visit Egypt for many reasons.

Writing challenge
Write about a country you would like to visit. Use a variety of sentences in your writing to add interest.

Website explorer
Search Google for 'Gary Provost on writing' and add any quotes you find interesting or helpful to your class wiki. Try to implement these ideas in your own writing.



2 Extend yourself

1. Change these pieces of writing into good English. The punctuation, spelling, grammar and vocabulary may all need attention.

   a this car ain't no good i told me ol' man you oughta get a new 'olden they have many techno accessories that this ol' bomb lacks

   b my gran don't like to cook no more 'cos shes to old and cranky she thinks all young 'uns are hooligans

   c did ya' get it from your ol' man for getting home late from the flicks

   d i dont like mashed spuds or cabbage with stake gimme chips and sauce instead i said

2. Write an interesting sentence to describe each of the following things.

   a a meal

   b a pet

   c a sport

   d a place

   e a person

   f a building

   g a journey

Writing challenge
Write a dialogue between two best friends about their plans for the future. You may want to consider what they might do when they first leave school and later in life.

3 Challenge yourself

1. Add phrases, clauses or better vocabulary and perhaps change the tenses to make these sentences interesting.

   a I would like to get a better job.

   b I am really interested in many things.

   c Do you care what happens to people in other countries?

   d He's always wasting time.

   e My cockatoo can talk.

2. Vary the beginnings and add to these sentences.

   a Hoping to achieve success, I trained very diligently.

   b On my way home, I encountered a snake.

   c I spoke too quickly because I was upset.

   d Having completed painting, I packed up.

   e The old horse stood up slowly and painfully.

Writing challenge

Write an account of a pet you have owned or one you know about. Try to use as much variation in your vocabulary, sentence structure and punctuation as possible.

UNIT 5 ADVERBS AND ADVERBIAL PHRASES

Adverbs

An **adverb adds to the meaning of a verb**. Adverbs tell *how, when, where* or *why* the action takes place. Types of adverbs are listed in the table below.

	Type	Example
	Manner (tells how)	*fast, sweetly, angrily, smoothly, well*
	Place (tells where)	*down, there, nearby, under, everywhere, above*
	Time (tells when)	*now, soon, later, before, still*
	Frequency (tells how often)	*often, twice, never, secondly, occasionally*
	Degree (tells to what extent)	*very, fairly, rather, quite, too, almost*
	Interrogative (asks questions)	• when meaning *at what time* • where meaning *in what place* • how meaning *in what way* • why meaning *on account of which*

Adverbial phrases

An **adverbial phrase**:

- consists of a group of words without a verb
- always begins with a preposition
- acts as a single adverb.

Examples

I *always* wear this ring. (adverb)

I wear this ring *at all times*. (adverbial phrase)

at (preposition)

They came to dinner *in the evening*. (adverbial phrase)

in (preposition)

Underline the adverbs and then state what type they are.

a The rain fell steadily all day.

b My grandmother searched everywhere for her watch.

c Maryanne left for a holiday in Florida yesterday.

d The driver released the brake and the car moved forwards.

e I swim frequently in the school pool.

f 'Don't blame me,' Matthew replied indignantly.

g The racehorse galloped rapidly after unseating its jockey.

h 'You are quite tall for your age,' said my great aunt.

i 'Do you want me to come to your house later?' I asked.

j I have been to England twice.

Change these adjectives to adverbs and then use them in sentences.

impolite	serious	equal	awkward	calm
untidy	proud	hungry	cold	lazy

a

b

c

d

e

f

g

h

i

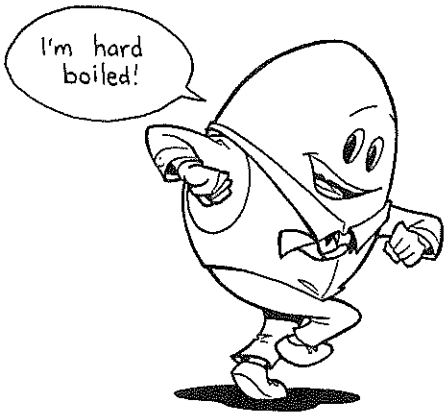
j

Writing challenge

Choose a well-known nursery rhyme. Rewrite it or combine it with others, imposing different conditions.

Wild task

Locate a list of adverbs online. Choose 10 words and use them in a short paragraph (three or four sentences). Upload your writing to the class wiki.



2 Extend yourself

1. Use the adverbs in the box to complete the sentences below.

patiently stealthily punctually immediately distinctly
annually profusely dangerously everywhere savagely

a The guard dog lunged _____ at the burglar's legs.
b The cars in the Grand Prix raced _____ around the bends.
c The intruders crept _____ towards the warehouse.
d Mushrooms grew _____ in the front paddock of the farm.
e We arrived _____ for our appointment with the principal.
f They searched _____ but they could not find their lost dog.
g Our school sports are held _____, always in first term.
h The witness stated that he remembered _____ what had happened.
i The refugees waited _____ to be allotted space in the houses.
j The ambulance arrived almost _____ after I telephoned.

2. Complete these sentences with an adverbial phrase or a clause.

a I shall be there _____ (time/phrase).
b _____ you will find fallen apples (place/phrase).
c She shouted at me _____ (manner/phrase).
d My friend is coming to my house _____ (time/phrase).
e We cannot go fishing _____ (reason/clause).

3. Use the following adverbs in sentences.

a fully
_____
b noisily
_____
c elegantly
_____
d wearily
_____
e once
_____
f almost
_____

Writing challenge
Choose a famous person (such as Sir Edmund Hilary, the first person to reach the top of Mount Everest). Describe what he or she did and why this made that person famous. Use adverbs in your description.

Adverbs can also **modify** the following:

- **other adverbs**

  He was walking quite (degree) rapidly (manner).

- **adjectives**

  The children are very (adverb/degree) happy (adjective).

- **prepositions**

  The car was almost (adverb/degree) in (preposition) the river.

- **conjunctions**

  He was angry simply (adverb/reason) because (conjunction) we contradicted him.

- **whole sentences** – the adverbs *therefore, hence, thus, however, accordingly, nevertheless, moreover, so, now* and *besides* are often used for this purpose.

  He did not want to go. Nevertheless, he agreed that it would be for the best.

Classify the adverbs in italics. For example, 'The fire spread *alarmingly*' (manner).

a Autumn is the time *when* ( ) many trees *quickly* ( ) lose their leaves.

b The aeroplane flew *swiftly* ( ) *skyward* ( ).

c You look *rather* ( ) pale. *Why* ( ) don't you go home?

d You sing *well* ( ) but if you practised you could sing *better* ( ).

e The Rolls Royce runs *more quietly* ( ) than the Mercedes, but the Bentley runs the *most quietly* ( ) of all.

Underline the word(s) that the italicised adverb is modifying and state what part of speech it is. The first one has been done for you.

a She was running *rather* (adverb of degree) <u>swiftly</u> (adverb).

b The old woman was *very* ( ) cheerful ( ).

c The children climbed *almost* ( ) to the top of the hill ( ).

d The teacher replied *angrily* ( ) because we had been impolite ( ).

e I had spent two days ill in bed. *Therefore*, ( ) I could not compete in the sprints ( ).

f He recovered from his car accident *fairly* ( ) soon ( ).