ASPIRE TO POWER LEARNING

YOUR FREE SAMPLER

A little maths.
A clearer next step.

Try a selection of original questions from our Years 5, 6 and 7 topic starter packs. Find a useful starting point and build from there.

Year 5 / Fractions Foundations

Year 6 / Decimals & Percentages

Year 7 / Algebra Foundations

8 pages / 22 questions / Complete answers
A4 printable PDF | Australian English

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Find your starting point

1. Choose a useful page

The suggested year levels are a guide. Start where the ideas feel familiar enough to try, and work towards the next challenge.

2. Show your thinking

Use the spaces for notes, diagrams or calculations. For algebra, a letter represents a number. For fractions, the whole must be divided into equal parts.

3. Check and revisit

The answers are on pages 7-8. If you miss a question, compare your method, then try again without looking.

4. Keep it manageable

One page is enough for a short session. The goal is a clearer method, not finishing as quickly as possible.

What is inside

Page 3: fractions

Page 4: decimals and percentages

Page 5: algebra

Page 6: four real-world challenges

Pages 7-8: answers and methods

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Questions or corrections: daniel@aspiretopowerlearning.org

Year 5: Fractions Foundations

Try the questions, show your working, then use the answer pages to check.

01 A shape is divided into 8 equal parts. 3 parts are shaded. What fraction is shaded?

02 Complete the equivalent fraction: 2/3 = ?/12.

03 Insert <, > or = : 3/8 ___ 5/8.

04 Calculate 1/10 + 4/10. Simplify if possible.

05 Find 1/3 of 24.

06 Write 7/4 as a mixed number.

Year 6: Decimals & Percentages

Try the questions, show your working, then use the answer pages to check.

07 Round 4.763 to one decimal place.

08 Calculate 12.6 + 3.85.

09 Calculate 708.5 divided by 100.

10 Write 3/4 as a decimal and as a percentage.

11 Find 25% of 120.

12 An item costs $80 and is discounted by 15%. Find the saving and the sale price.

Year 7: Algebra Foundations

Try the questions, show your working, then use the answer pages to check.

13 Write an algebraic expression for: a number x increased by 7.

14 Simplify: 2y + 6 + 3y.

15 Evaluate 2a + 9 when a = 6.

16 Solve: m/3 = 5.

17 Expand and simplify: 5(n - 2).

18 The nth term is 3n + 1, starting at n = 1. Find term 5.

Put your methods to work

Choose a challenge that fits your current learning. Show your steps.

19 A reading club has 24 students. Three-eighths choose adventure stories. How many choose adventure? How many do not?

20 Two shops sell the same $80 headphones. Shop A offers 25% off. Shop B reduces the price by $18. Find both sale prices. Which is cheaper, and by how much?

21 A cinema ticket costs $t. A family buys 4 tickets and spends $12 on snacks. Write the total cost as an expression. If the total is $68, find the ticket price.

22 Luca says $3(x + 2) = 3x + 2$. Explain the mistake, write the correct expansion and use $x = 4$ to compare the two expressions.

Answers & methods

Check your reasoning, not only your final answer. Equivalent correct forms are welcome.

01 3/8

The numerator counts shaded parts; the denominator counts all 8 equal parts.

02 8

Multiply numerator and denominator by 4: 2 x 4 = 8.

03 <

3/8 < 5/8. Use equal denominators, or compare equal numerators.

04 1/2

1 + 4 = 5; keep denominator 10, then simplify.

05 8

24 / 3 = 8; then 8 x 1 = 8.

06 1 3/4

7 = 1 x 4 + 3. There are 1 whole groups and 3/4 left.

07 4.8

Look at the next digit. If it is 5 or more, round the kept digit up.

08 16.45

Line up the decimal points, fill empty places with zeroes, then calculate.

09 7.085

Use place value or split into whole-number and decimal parts.

10 0.75 and 75%.

3 / 4 = 0.75. Multiply the decimal by 100 for the percentage.

11 30

25/100 x 120 = 30. Use 10%, 5% or 25% parts if helpful.

12 Save $12.00; sale price $68.00.

15% of $80 = $12.00. Subtract the saving from $80.

Answers & methods

Check your reasoning, not only your final answer. Equivalent correct forms are welcome.

13 x + 7

A letter stands for the unknown number. A coefficient next to a letter means multiplication.

14 5y + 6

Collect matching letter terms together, and combine constants separately.

15 21

Replace a with (6), then follow the order of operations.

16 m = 15

Multiply both sides by 3: m = 5 x 3 = 15.

17 5n - 10

Multiply every term inside each bracket by the outside factor, then collect like terms.

18 16

Substitute n = 5: 3 x 5 + 1 = 16.

19 9 choose adventure; 15 do not.

24 / 8 x 3 = 9. Then 24 - 9 = 15.

20 Shop A: $60; Shop B: $62. A is $2 cheaper.

25% of 80 = 20, so A costs 60. B costs 80 - 18 = 62.

21 4t + 12; ticket price $14.

4t + 12 = 68. Subtract 12: 4t = 56. Divide by 4: t = 14.

22 Correct: 3x + 6. At x = 4 the correct value is 18; Luca gets 14.

The 3 must multiply both x and 2. 3 x (4 + 2) = 18, but 3 x 4 + 2 = 14.