11 Plus Maths Stretch and Revision Course Preview

This preview is designed to show you, in some depth, the work we'll go through in this course.

Who is this course right for?

- Children taking Independent School exams
- Bright children taking the 11 plus entry into super-selective Grammar Schools
- Children hoping for an Independent School scholarship or bursary.

What does this course deliver?

This course covers four areas in a fully planned and structured way to give children the best chance of success. To cover the same ground using books you'd need to buy five or six different books and plan and structure the work yourself.

Accuracy:

- Bright children tend to struggle most not on the more difficult questions, but in delivering their answers to the easy questions accurately.
- A mark dropped on the easy questions is the same as a mark dropped on the more difficult questions.
- We give children regular practice on the easier calculation and worded problem questions they will face.
- We actively work on their ability to work accurately through spot the mistakes work and core skills work.

Speed:

- We focus on speed using timed tests with a reducing time allowance.
- We use questions at a level of difficulty children will find in the core of their papers.
- **REMEMBER:** 85% of the most difficult entry papers are made up of easier or standard questions. Unless children can get through these questions **quickly** and **accurately** there's no point worrying about the more difficult questions.

Skills development and revision:

- We have chosen seven broad question areas to focus on scholarship skill development.
- Questions which need similar skills often come up, so this practice is essential.
- We use a fully worked example question in each case and then ask children to work through further questions using the detailed answers to help their development.

- We also revise several core skill areas to ensure that skill development is sufficiently sound – division of fractions is an example of one of the areas we cover.

Scholarship level questions:

- We then start showing children how they can use their skills to tackle scholarship level questions.
- We ask children to spend time on these and to have several attempts. This process helps to improve their reasoning skills.
- Our detailed answers then form a further learning opportunity.

Realistic Exam Papers:

- At the end of the course in Parts 9 and 10 we give four full timed papers.
- These papers are at least as tough as the toughest entry papers children will find.
- As with most papers, they start with calculations questions then have a wide range of core questions. Finally, there are a few difficult questions at the end.

Why choose this course?

We've produced this course to help children who want to succeed with the toughest 11 plus exams. Critically, we help children avoid falling into the trap of just doing harder questions (which only ever make up 10% of exams), or doing paper after paper which rarely produces improvement.

- We help children develop the accuracy and speed necessary to do well in the first 90% of the toughest papers.
- We help children to develop the reasoning skills and techniques they will need to do well in the toughest questions.
- We help them practise their skills on the toughest of questions.
- We help children experience what the toughest of Independent School or super-selective Grammar School papers will be like through 4 realistic papers.
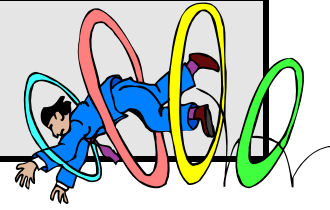
> SCROLL DOWN FOR A PREVIEW OF THE MATHS STRETCH AND REVISION COURSE

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11 Plus Maths Stretch and Revision – Part 7
Make sure you go through the answers to the scholarship
questions carefully. This will help build your skills.

1.   <u>Mental Maths Practice:</u>   You should be aiming for 100% on these
     questions. Try to complete them in six minutes.

Each part of the course has a detailed front page listing the items included.

2.   M̲a̲ ... 00% on these questions. Try
     an ...

3.   V̲a̲ ... next maths problem type:

     -
     -

4.   <u>Core Questions Timed Test:</u>   11 Plus papers often include a series of
     core calculations questions:

     -   Core Questions Timed Test 8 – you have 20 minutes to complete this
         test
     -   Core Questions Timed Test 9 – you have 20 minutes to complete this
         test

5.   <u>Spot the Mistakes:</u>   It's ... few silly
     mistakes as possible. Look ... d see if
     you can find all the mistakes ...

The front sheet gives you detailed prompts on what to do and why it is important.

6.   <u>Mixed Scholarship Questi</u>... ons that
     scholars will try. Have a go ... de a few
     of this standard of question ...

7.   <u>Detailed Answers:</u> It's an e ... se to go
     over any mistakes.

   •   Please sign below when you have completed everything.
   •   Your helper may have to test you on some things.

   Signed: (Parent/Teacher and Pupil)……………………………………………………

Division of fractions

Start with a division sum: $\dfrac{4}{5} \div 2$ This can be written as $\dfrac{4}{5} \div \dfrac{2}{1}$

Then c[...] t (turn upside down) the fraction
after i[...]

This no[...] s cancel if you can: $\overset{2}{\cancel{\dfrac{4}{5}}} \times \dfrac{1}{\cancel{2}_1}$

So now [...] 1, so the answer is: $\dfrac{2}{5}$

This is [...] on sums.

Now fo[...] xactly the same steps:

$$\dfrac{7}{8} \div \dfrac{11}{16} = \dfrac{7}{\underset{1}{\cancel{8}}} \times \dfrac{\overset{2}{\cancel{16}}}{11} = \dfrac{7}{1} \times \dfrac{2}{11} = \dfrac{14}{11} = 1\dfrac{3}{11}$$

1. Change the sign

2. Invert the fraction after it

3. Cross cancel if possible

Can you see how this wor[...]

1. $\dfrac{2}{7} \div 8 =$ 2. $\dfrac{1}{4} \div 11 =$

4. $\dfrac{7}{8} \div \dfrac{11}{16} =$ 5. $4 \div \dfrac{1}{3} =$

Convert to an improper fraction first ($\dfrac{9}{5}$), then it is easy!

Did you enjoy those?

Speed and Accuracy Test

- You have five minutes. Children should be working towards scoring 100%.

 ÷ / - / ×

 times, where mistakes are made it will be an

 es work and attention to detail is necessary.

7 =	54 ÷ 6 =	8 + 4 =
5 =	7 + 8 =	2 – 0 =
9 =	42 ÷ 6 =	9 x 8 =
6 =	8 – 7 =	54 ÷ 9 =
2 =	30 ÷ 6 =	0 + 1 =

5 + 8 =	14 – 9 =	0 x 8 =
5 x 6 =	44 ÷ 4 =	7 + 9 =
5 + 7 =	15 – 6 =	48 ÷ 6 =
16 – 8 =	36 ÷ 9 =	8 + 8 =
7 x 6 =	9 – 6 =	72 ÷ 9 =
17 – 9 =	9 + 6 =	6 x 8 =
8 x 3 =	7 x 8 =	63 ÷ 7 =

6 + 9 =	11 – 7 =
7 x 4 =	13 + 6 =
63 ÷ 9 =	9 x 9 =
4 + 3 =	13 – 7 =
13 – 8 =	32 ÷ 4 =
4 x 6 =	14 – 6 =
49 ÷ 7 =	5 + 8 =
15 – 4 =	9 x 7 =
4 + 8 =	18 - 7 =

Score   /100

Core Skills Timed Tests:

In part 3 of the course we move onto more formal timed tests.

These tests include the level of question children can expect in the bulk of their papers.

5	4.7 + 5.9 =
6	Sam buys DVD's totally £30.24. He has vo... ...47. How much should he pay?
7	The Hardware Shop sold 45 screws at 14p... ...w much was this altogether?
8	Packets of crisps are sold in 20g regular size and 40g large size. In one week Tom ate one regular size packet every day except Saturday and a large packet of crisps on the way to football on a Tuesday and Thursday evening. Philip ate exactly half the amount that Tom ate. How much did Philip eat in grams?

We encourage children to work accurately and each test has a reducing time allowance which encourages them to work at the right pace.

...table below?

...had been reduced by 30%. The original ...?

Mental Maths

You should do as many working as accurately as possible. Aim ...

① How ...

② 12 ...

③ 6 x ...

④ 0.48 m ÷ 8 = _____ cm

⑤ $^2/_5 + \frac{1}{2}$ = _____

⑥ Write the value of the figures underlined:

a) 39.0<u>6</u>   _____

b) 4<u>5</u>6.8   _____

⑦ By how many is 1.7kg heavier than 600g? _____

⑧ Find the average of 1.7l, 0.4l, 1.8l

_____

⑨ How many pennies remain when £2.58 is divided by 7?

_____

⑩ Find the perimeter of a rectangle 7.6cm long and 5.3cm wide.

40p

in

b) ...

_____

Marks   /12

Trial and Error – Question Focus

Sometimes you will find questions where Trial and Error helps. It is useful to realise up-front that trial and error is a valid technique to use.

Look at this question:

In c... ...of 2ps and 5ps
and... ...
How... ...r there is £1.26?

The... ...uch to go on. We
don... ...re trial and error comes in – let's work
thr... ...and we'll choose 10 as a start point (for
no c...

Try... ...king at the worked example.

Wo...

20 coins? (5 x 10) + (2 x 10) = 70p   This is more than half of the value we want.
30 coins? (5 x 15) + (2 x 15) = £1.05   Closer, but still too small.
34 coins? (5 x 17) + (2 x 17) = £1.19   Nearly there! We will get it on the next trial.
36 coins? (5 x 18) + (2 x 18) = £1.26   We knew it would be this because £1.19 + 2 + 5 = £1.26

Now you have seen how trial and error can help you answer questions try the following question – use trial and error for the second part.

If you are struggling with it please <u>do</u>... ...til you have
attempted the question at three separ... ...nce to keep
going is part of the learning process. ... ...l not learn
well.

Question:
- The combined age of Andrew c...
- The combined age of Andrew c...
- The combined age of Charles c...

2 3
5 6
7 8 9

Answer the following:
- What is the combined age of Andrew, Brad and Charles?
- How old is Andrew?

Try the three examples below:

- Have at least 3 separate attempts to help you to develop perseverance – don't give up.

...wer and workings to the worked ... your technique development.

> **Reasoning Skills Development – practice questions:**
>
> Having introduced children to a new technique we then include practice questions for them.
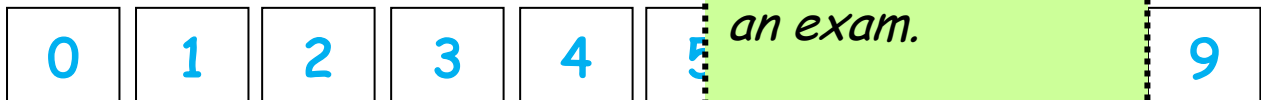
1. ... . Here are my boxes:

    ...otal?

    _____

2. Fill in the spaces in the boxes below with each of the digits 1, 3, 6, 7 and 8 to make a correct sum.

    ☐☐ ✗ ☐ = ☐☐

> **These questions are at a level they will find in an exam.**

3. Take ten cards numbered 0 to 9.

    | 0 | 1 | 2 | 3 | 4 | 5 | | 9 |

    Using all ten cards, arrange the cards to make 5 numbers that are multiples of 3.

    _____

Comprehension – Fully Worked Answers

1. T... ...gos in a Bango.

a) A... has 7 Rangos and 3 Fangos.
   ...tal?

> **Reasoning Skills Development – fully worked answers:**
>
> *We encourage children to have several attempts at each question.*

This typ... ...scared, even though it looks like an impossible question...

1 Bango... ...5 x 15 = 90   1 Bango = 90 Fangos

Next, le... ...nd how many Barbara has.
If there... ...Rangos then he has (6 x 9) Fangos, plus the other 4...
6 x 9 = ...

Barbara: 7 x 6 = 42 + 3 = 45

So Alex has 58 Fangos and Barbara has 45 Fangos.
In total they have 45 + 58 = 103 Fangos.

b) What fraction of a Bango do 12 Fangos represent?

A Bango is 90 Fangos.

Therefore, the fraction we need is $\dfrac{12}{90}$

The examiners will want to see a cancelled down equivalen...
Let's divide top and bottom by 3: $\dfrac{4}{30}$

We can cancel this down once more. Divide by 2.

$\dfrac{2}{15}$

> When they have given their best answer it's then the moment to use the fully worked answers we have provided.

2. Six children at a birthday party received presents from a lucky dip.

> These take them through solving the problem step by step.

...o 10 and all were different ages.
...got a piggy bank.
...ot a jack in the box.
...he 8 year old got toy monsters.
...fferent school from the seven year old whose hobby is stamp

...old on her next birthday, and the 5 year old are shorter than

...e.
George tried to frighten the others with his toy monster.
Mary's best friend Silma got a jack in the box.

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Maths Problem Solving

Do as much of the work as you can in your head.

①

If
w

Maths Problems:

These tests are also included in 80% of the course.

They are not difficult. Children should be doing one question every 30 seconds and aiming for 100% every time.

Ellie has two guinea pigs. One guinea [pig] weighs 338g, the other weighs 473g. [Ho]w much less than 1kg do the guinea [pig]s weigh in total? _____

② d d

Ruby throws three darts at a [dar]tboard. She scores triple numbers on [eac]h throw. Her first dart scores 57, [her] second dart scores 21. If her total [sco]re is 111, what was the score of [Rub]y's third dart? _____

③ A [ ]dare does he return? _____

⑨ If 3/7 of a number is 12, what is the whole number? _____

④ A factory makes cars. If each car has 4 wheels, how many wheels will be needed for 137 cars? _____

⑩ A school play has an afternoon show

We keep going with these to ensure children can work quickly and accurately.

[sea]ting 312
178 people
[an]d 273
[how] many
[tot]al?

⑤ Lucy is saving for a car. She has seen one for sale at £1375. Lucy needs another £580 to buy the car. How much has Lucy saved already? _____

[ ]total 104°,
[an]gle?

_____

⑥ If a pack of three tins of peas cost 85p, how many tins can you buy for £5.10? _____

⑫ What is the sum of (8x8) and (8+8)? _____

Sample Scholarship Questions

You have been exposed to lots of techniques and strategies to answer more difficult worded problems. Use some of the strategies and techniques you have learnt to answer the following questions.

. street. Lucy lives at number 10 Kings Road and

houses on their side of the road are even-

d to install new fences along the back of all the

e houses in between. Each garden is 15 metres

must they buy to re-fence the distance behind all

g put up, Richard decides to show off his new toy

m the centre of his garden and flies to the centre

has it flown?

r metre and a half, how much with the total bill be?

d. Lucy, Richard and their other neighbour Jamie take 15 hours to paint the fence. Lucy and Richard (without Jamie) working equally as hard have previously taken 25 hours to paint another fence that was the same size along the front of their houses. How long would Jamie take to paint the fence alone?

2. The new symbol '◊' means find the mean of the two numbers either side and add the second number. **For example:**

- 10 ◊ 20
- 10 +20 = 30
- 30 ÷ 2 = 15
- 15 + 20 = 35

Work out:

a. 15 ◊ 35 =
b. 24 ◊ 6 =

What is the value of a if:

c. a ◊ 7 = 16.5
d. a ◊ 43 = 69

Work out:

e. (9 ◊ 37) ◊ 5
f. (34 ◊ 22) ◊ 8

Mixed scholarship questions

Scholarship Standard Questions – detailed answers:

We encourage children to have 2 or 3 attempts at each question before looking at the answer.

...ilograms. Since 1KG = 1,000g, we can re-
...sugar, for 250g sugar there is 400g
... we would get with 250g sugar: 750g
...ist then add the sugar and flour together:
...ave 625g flour & sugar : 400g apples

... in the sequence describes the previous number: 23 = one '2', one '3'; so the second number is 1213 – it's a description not a calculation.

Remember: these types of supremely difficult questions will come right at the end. It's important in your working on standard papers to show you have been through a logical process to attempt it e.g. seeing that it isn't gap...

Very few children will get a question of this leve... to think about 'unusual solutions' sometimes in re...

The process of having several attempts helps children to use the skills they have and get most value from each question.

3. 72 people work in the office

We know that there are no more than 140 office... multiple of 12 because no one was excluded when the project groups were this size. The number must also leave remainder 2 when divided by 10 and remainder 8 when divided by 16. To find the number you must check all multiples of 12 less than 140 to find a number that has all of these characteristics. This means that the number is 72 – 72 is a multiple of 12, 72 when divided by 10 leaves a remainder of 2, 72 leaves a remainder

Having had several attempts, children will be intrigued to see how we have answered it.

Spot the Mistakes

There are between 3 and 8 mistakes on this page. Circle the items in italics which are incorrect and correct them. Correcting work and identifying mistakes helps children to work more accurately.

① 0.7m –

② Find 0.

③ (7p×9)

Spot the Mistakes:

We help children to really focus on accuracy with spot the mistakes exercises.

④ 28 quarters = *7* whole ones.

⑤ £5 - *74* p = £4.26

⑥ £16.00 ÷ 100 = *160* p

⑦ 4/6 of an hour = *44* min

⑧ 0.6 + 6.2 + 0.07 = *6.87*

⑨ 26 × 6 = *165*

⑩ 2.06m - 0.6m = *146* cm

Multiply 1.25 by 8 *12.5*

How many cm in 1/10 of 7.4m? *74* cm

What fraction of £4 is 40p? *1/10*

Write the time 45 min before 15.15 in 24-hour clock time. *14.30*

⑮ Write the missing numbers.

7, 14, 21, *28, 35*

⑯ How many pens costing 7p can be bought for 91p? *9*

These sheets help children to develop their checking skills.

Only children who work accurately do well in the toughest tests.

mbers is 5, find the

ers. *30*

1/15 be taken from a

.83. £ *6.67*

⑳ How many pence have the same value as £0.9? *99* p

Marks   /20

b) Calculate: 65 – 44 _____

---

b) Calculate:

308 ÷ 11 _____

---

b) Calculate: 462 + 369 _____

---

ow much do 18 cost? _____

---

5. What is the difference between the larg following numbers? _____

A. 0.85   B. 0.49   C. 0.9

---

6. Which of these solid shapes has exactly

A   Cube

B   Cuboid

87p change from £12.00. How much did

Mental Maths Practice

1. 153
2. £5.72
3. 355ml
4.
5.
6.
7.
8.
9.
10.
11.
12. 22

Maths Problem Solving

36cm²

9l

35

540g

3kg

27

1.2m

£1.90

£70.50

4.4km

105km

555g

Core Questions Timed Test 8

1. 1.27
2. 7 $\frac{5}{6}$
3. 180

4. 13,175
5. 12.25
6. 21
7. £63.84
8. 21:11
9. -8
10. $\frac{3}{4}$
11. £3.00
12. 12n + 12t + 52m
13. 45°
14. 50m
15. 6m
16. 30°
17. 21
18. 1 hr 35 min
19. £7.50
20. 28

Core Questions Timed Test 9

1. 1603

11. 60
12. 7
13. 42x + 21y +21z
14. 720g
15. 13 vases
16. 8 ft 4 inches
17. 33 ½
18. 39
19. 15
20. £22.35

An answer sheet is provided with each part of the course.

All questions have answers. More difficult questions have fully worked answers.