

# 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 most difficult questions, but in delivering their answer 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 questions 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 three further questions using the detailed answers to help their development.

# 11 Plus Maths Stretch and Revision Course Preview

- 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:

- Finally 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, they then have a wide range of core questions and then 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.
- Finally we help children experience what the toughest of Independent School or super-selective grammar school papers will be like through 4 realistic papers.

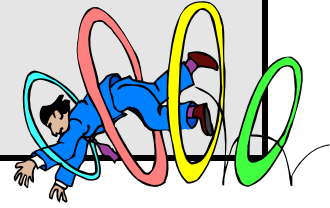
**SCROLL DOWN FOR A PREVIEW OF THE  
MATHS STRETCH AND REVISION COURSE**



To score well you'll need to continue to work very accurately.

### 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. **Mental Maths Practice:** You should be aiming for 100% on these questions... Try to complete them in six minutes,

2. **Mc** or 100% on these questions..

3. **Tr** or next maths problem type:

4. **Va**

4. **Co** rs often include a series of

- 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. **Spot the Mistakes:** It's few silly mistakes as possible. Look and see if you can find all the mistakes

6. **Mixed Scholarship Questions:** These are questions that scholars will try. Have a go at a few of this standard of questions

7. **Detailed Answers:** It's an use to go over any mistakes.

*Each part of the course has a detailed front page listing the 8 - 12 items included.*

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

- 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:  $\frac{4}{5} \div 2$  This can be written as  $\frac{4}{5} \div \frac{2}{1}$

Then c  
after i

This no

So now

This is

Now fo

$$\frac{7}{8} \div$$

## Revision Topics:

*In the early parts of the course we revise core techniques to ensure children have the skills needed for the exam.*

rt (turn upside down) the fraction

cross cancel if you can:  $\frac{4}{5} \times \frac{1}{2}$

$\times 1$ , so the answer is:  $\frac{2}{5}$

on sums.

actly the same steps:

$$\frac{4}{1} = 1\frac{3}{11}$$

Remember:

1. Change the sign
2. Invert the fraction after it
3. Cross cancel if possible

Can you see how this works?

1.  $\frac{2}{7} \div 8 =$

2.  $\frac{1}{4} \div 11 =$

4.  $\frac{7}{8} \div \frac{11}{16} =$

5.  $4 \div \frac{1}{3} =$

*These sheets include topics such as multiplication of fractions, division of fractions, probability and area.*

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

Did you enjoy those?

# Speed and Accuracy Test

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

## Core skills

## Assessment:

*This sheet appears in the first three parts of the course. It tests a child's core skill.*

$\div$  / - /  $\times$

times, where mistakes are made it will be an  
es work and attention to detail is necessary.

$5 + 8 =$	$14 - 9 =$	$0 \times 8 =$	$9 + 6 =$	$12 - 9 =$
$5 \times 6 =$	$44 \div 4 =$	$7 + 9 =$		
$5 + 7 =$	$15 - 6 =$	$48 \div 6 =$		
$16 - 8 =$	$36 \div 9 =$	$8 + 8 =$		
$7 \times 6 =$	$9 - 6 =$	$72 \div 9 =$		
$17 - 9 =$	$9 + 6 =$	$6 \times 8 =$		
$8 \times 3 =$	$7 \times 8 =$	$63 \div 7 =$	$6 + 9 =$	$11 - 7 =$
			$7 \times 4 =$	$13 + 6 =$
			$63 \div 9 =$	$9 \times 9 =$
			$4 + 3 =$	$13 - 7 =$
			$13 - 8 =$	$32 \div 4 =$
			$4 \times 6 =$	$14 - 6 =$
			$49 \div 7 =$	$5 + 8 =$
			$15 - 4 =$	$9 \times 7 =$
			$4 + 8 =$	$18 - 7 =$

*The time stress of this sheet (5 minutes) shows up any weakness children have in core skills.*

*Children who score 100% are well placed. Any mistakes indicate more focus is needed. Faltering on these questions means marks will be dropped needlessly in tests.*

**Core Skills Timed Tests:**

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

5

$4.7 + 5.9 =$

6

Sam buys DVD's totally £30.24. He has v  
How much should he pay?

7

The Hardware Shop sold 45 screws at 14p  
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?

1

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

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

table below?

had been reduced by 30%. The original ?

# Mental Maths

## Mental Maths:

Mental Maths tests are included in 80% of the course.

Children have 30 seconds to answer each question and the brightest children will be aiming for 100% every time.

accurately as possible.

0%.

① Ha

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

② 12

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

③ 6 ×

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

④  $0.48 \text{ m} \div 8 =$  \_\_\_\_\_ cm

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

⑤  $\frac{2}{5} + \frac{1}{2} =$  \_\_\_\_\_

⑥ Write the value of the figures underlined:

a) 39.06 \_\_\_\_\_

b) 456.8 \_\_\_\_\_

While these questions should not trouble children, it's essential for them to keep working accurately and quickly. Without regular work in this area they will underperform.

40p

in

0.730

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  
and:  
How

## Reasoning Skills Development:

The  
don't  
thru  
no c

*We focus on a series of seven broad question types to introduce children to a range of skills they can employ.*

Try

Wa

of 2ps and 5ps

or there is £1.26?

uch to go on. We

re trial and error comes in - let's work and we'll choose 10 as a start point (for

eking at the worked example.



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

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 do attempted the question at three separate going is part of the learning process. well.

*This sheet focuses on trial and error as a technique and shows children how, in some questions, it's an essential technique.*

til you have  
nce to keep  
l not learn

**Question:**

- The combined age of Andrew and Charles is 23
- The combined age of Andrew and Brad is 56
- The combined age of Charles and Brad is 78

**Answer the following:**

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

2 3  
5 6  
7 8 9



# Digit Combinations - Practice Questions

Try the three examples below:

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

## Reasoning Skills

### Development - practice questions:

1. Having introduced children to a new technique we then include three or four practice questions for them.

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

... Here are my boxes:

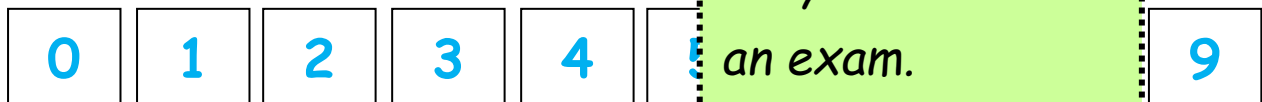
...otal?

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

$$\square \square \times \square = \square \square$$

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

1. Take ten cards numbered 0 to 9.



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

# Comprehension - Fully Worked Answers

1.

## Reasoning Skills

a) **Development - fully worked answers:**

This type of question

*We encourage children to have several attempts at each question.*

1 Bango =

Next, let

If there are other 4:

$$6 \times 9 =$$

Rangos in a Bango.

Barbara has 7 Rangos and 3 Fangos. What is the total?

Barbara is scared, even though it looks like an impossible

$$3 \times 15 = 90 \quad 1 \text{ Bango} = 90 \text{ Fangos}$$

Find out how many Barbara has.

Barbara has 6 Rangos then she has  $(6 \times 9)$  Fangos, plus the

$$\text{Barbara: } 7 \times 6 = 42 + 3 = 45$$

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  $\frac{12}{90}$

The examiners will want to see a cancelled down equivalent

Let's divide top and bottom by 3:  $\frac{4}{30}$

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

$$\frac{2}{15}$$

*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.*

George is 10 and all were different ages.

George got a piggy bank.

George got a jack in the box.

George the 8 year old got toy monsters.

George is at a different school from the seven year old whose hobby is

reading. The 10 year old is 2 years old on her next birthday, and the 5 year old are shorter

than her.

George tried to frighten the others with his toy monster.

Mary's best friend Silma got a jack in the box.

# Maths Problem Solving

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

Use the correct units for your answer e.g. cm, pence, minutes.

① **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 weighs 338g, the other weighs 473g. How much less than 1kg do the guinea pigs weigh in total? \_\_\_\_\_

Ruby throws three darts at a dartboard. She scores triple numbers on each throw. Her first dart scores 57, her second dart scores 21. If her total score is 111, what was the score of Ruby's third dart? \_\_\_\_\_

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

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? \_\_\_\_\_

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

⑨ If  $\frac{3}{7}$  of a number is 12, what is the whole number? \_\_\_\_\_

⑩ A school play has an afternoon show starting 312 people, 178 people and 273 people. How many people were there in total? \_\_\_\_\_

⑪ What is the third angle? \_\_\_\_\_

⑫ What is the sum of  $(8 \times 8)$  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.

## Scholarship Standard

### Questions:

In part 4 of the course we move onto scholarship standard questions.

the street. Lucy lives at number 10 Kings Road and 2 houses on their side of the road are even-  
ed 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 ' $\diamond$ ' means find the mean of the two numbers either side and add the second number. **For example:**

- $10 \diamond 20$
- $10 + 20 = 30$
- $30 \div 2 = 15$
- $15 + 20 = 35$

Work out:

- a.  $15 \diamond 35 =$   
b.  $24 \diamond 6 =$

What is the value of **a** if:

- c.  $a \diamond 7 = 16.5$   
d.  $a \diamond 43 = 69$

Work out:

- e.  $(9 \diamond 37) \diamond 5$   
f.  $(34 \diamond 22) \diamond 8$

*This standard of question is used at the end of the toughest 11 Plus or Independent School tests.*

## Mixed scholarship questions

### Sheet 2 – Answers

**Scholarship Standard Questions - detailed answers:**

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

5. Since 1KG = 1,000g, we can re-write the ratios as 1kg / 400g apples. We must then find out how many kg of sugar / 500g sugar =  $1.5 \times 250 = 375\text{g}$ . We must then find out how much flour & sugar = 625g. So you will have 625g flour & sugar

6. The sequence describes the previous number:  $23 = 2 \times 11 + 1$  is 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 gaps between numbers.

Very few children will get a question of this level correct. 'unusual solutions' sometimes in reasoning questions.

*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 workers 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 of 8 when divided by 16.

*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  $0.7\text{m} - 0.07\text{m} = 0.63\text{cm}$

② Find 0.

③  $(7 \times 9)$

④ 28 quar

⑤  $\text{£}5 - 74\text{p} = \text{£}4.26$

⑥  $\text{£}16.00 \div 100 = 160\text{p}$

⑦  $4/6$  of an hour =  $44$  min

⑧  $0.6 + 6.2 + 0.07 = 6.87$

⑨  $26 \times 6 = 165$

⑩  $2.06\text{m} - 0.6\text{m} = 146\text{cm}$

⑪ Multiply 1.25 by 8  $12.5$

How many cm in  $1/10$  of  $7.4\text{m}$ ?  $74$  cm

What fraction of  $\text{£}4$  is  $40\text{p}$ ?  $1/10$

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

Write the missing numbers.

7, 14, 21,  $28$ ,  $35$

⑫ How many pens costing  $7\text{p}$  can be bought for  $91\text{p}$ ?  $9$

**Spot the Mistakes:**

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

*These sheets help children to develop their checking skills.*

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

...bers is 5, find the ...rs.  $30$

$1/15$  be taken from a

...83.  $\text{£} 6.67$

...e the same value as

$\text{£}0.9?$   $99$  p

**Marks /20**

**Full Timed 11 Plus Paper:**

These papers are reflective of the tougher tests that super-selective grammar schools and highly selective Independent Schools might give. Children will do four of these full timed papers.

b) Calculate:  $65 - 44$  \_\_\_\_\_

b) Calculate:

$308 \div 11$  \_\_\_\_\_

b) Calculate:  $462 + 369$  \_\_\_\_\_

How much do 18 cost? \_\_\_\_\_

5. What is the difference between the largest and the smallest of the following numbers? \_\_\_\_\_

- A. 0.85      B. 0.49      C. 0.9

6. Which of these solid shapes has exactly 12 edges?

- A Cube  
B Cuboid

C Cylinder

Bright children will be aiming to get through the bulk of the paper quickly and accurately. They will want to give themselves enough time to have a go at the tougher questions at the end.

The test follows a typical format of starting with some rapid calculation questions, moving onto a bulk of core syllabus based questions and then ending with harder questions.

How much 87p change from £12.00. How much

**Mental Maths Practice**

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

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

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.  $45^\circ$
14. 50m
15. 6m
16.  $30^\circ$
17. 21
18. 1 hr 35 min
19. £7.50
20. 28

**Maths Problem Solving**

36cm<sup>2</sup>

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

**Core Questions Timed Test 9**

1. 1603

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

11. 60
12. 7
13.  $42x + 21y + 21z$
14. 720g
15. 13 vases
16. 8 ft 4 inches
17.  $33\frac{1}{2}$
18. 39
19. 15
20. £22.35