## Year 6 to 7 Transition Tasks <br> Maths

This booklet is designed to be completed over 6 weeks.

Each week will be broken up into two tasks.
TASK 1: Revision Mat - Mixed Topics
Get into good habits and make sure you show all of your working for each question.

## TASK 2: Problem-Solving Challenge

Think about how you will approach this task.
Again, show all your working. It's not all about the final solution - the fun is in the journey getting to it 아 () ()ㅇ)


| Week | Revision Mat <br> \#Correct | Problem Solving <br> (Tick/Cross) |
| :---: | :---: | :---: |
| $\mathbf{1}$ |  |  |
| $\mathbf{2}$ |  |  |
| 3 |  |  |
| $\mathbf{4}$ |  |  |
| 5 |  |  |
| 6 |  |  |

## Week 1 - Task 1

$3.9 \times 30=1$

Molly completes this calculation:


Write an addition calculation she could use to check her answer.

| $1 \frac{3}{4}+\frac{1}{2}$ |
| :--- |
| Write your answer as a mixed number |
| fraction. |
|  |
|  |
|  |

[^0]Two of the angles in a triangle are $60^{\circ}$ and $50^{\circ}$.

Logan says, 'The triangle must be isosceles.'
Explain why Logan is not correct.

The numbers in this sequence decrease by the same amount each time.

204 718, 203 718, 202 718, 201 718, 200718
What is the next number in the sequence?


## Week 1 - Task 2



## BRIGHT SPARKS EXTENSION

 QUESTIONSCan you work out which four digits you need to start with to be able to get all the possible answers 7, 9, 11, 13, 18, 22, 29, and 31?

Can you show that if you're only allowed to use consecutive digits (e.g. $5,6,7,8$ ), 31 is the largest possible answer and 7 the smallest?



## Week 2 - Task 1

A book has 316 pages. Ameena reads $\frac{1}{4}$ of a
the pages.
How many pages does Ameena have
left to read?

The temperature in the fridge is $6^{\circ} \mathrm{C}$. The temperature in the freezer is $-22^{\circ} \mathrm{C}$

What is the difference between the two temperatures?

Here is a drawing of a 3D shape.


Identify the number of faces, vertices and edges which the shape has:
faces:
vertices:
edges:
What is the name of this 3D shape?

Identify all the common factors of both 12 and 28.

## There are 24 students in a class.

The teacher has 8 litres of blackcurrant squash.
They pour 275 millilitres of blackcurrant squash for each student.
How much squash is left over? Give your answer in litres.

## Week 2 - Task 2



## BRIGHT SPARKS EXTENSION

 QUESTIONS Is it possible for all of the digits 1 to 9 to appear exactly once in the addition below?

$$
\begin{array}{r}
\# \# \# \\
+\# \# \# \\
\hline \# \# \# \\
\hline
\end{array}
$$

Using each digit from 1 to 9 once, what is the largest sum you can obtain in the addition above?

And smallest?


## Week 3 - Task 1



## Week 3 - Task 2

## Peaches Today, Peaches Tomorrow...

(i) A little monkey had 60 peaches.

On the first day, he kept $\frac{3}{4}$ of his peaches, gave the rest away, then ate one. On the second day, he kept $\frac{7}{11}$ of his peaches, gave the rest away, then ate one. On the third day, he kept $\frac{5}{9}$ of his peaches, gave the rest away, then ate one.
On the fourth day, he kept $\frac{2}{7}$ of his peaches, gave the rest away, then ate one. On the fifth day, he kept $\frac{2}{3}$ of his peaches, gave the rest away, then ate one. How many peaches did he have left?
(ii) A little monkey had 75 peaches. Each day, he kept a fraction of his peaches, gave the rest away, and then ate one.
These are the fractions he decided to keep:

$$
\begin{array}{llllll}
\frac{1}{2} & \frac{1}{4} & \frac{3}{4} & \frac{3}{5} & \frac{5}{6} & \frac{11}{15}
\end{array}
$$

In which order did he use the fractions so that he was left with just one peach at the end?

## BRIGHT SPARKS EXTENSION QUESTIONS

Whenever the monkey has some peaches, he always keeps a fraction of them each day, gives the rest away, and then eats one.
I wonder how long he could make his peaches last for...

Here are his rules:


- Each fraction must be in its simplest form and must be less than 1.
- The denominator can never be the same as the number of peaches left. For example, if there were 45 peaches left, he could not choose to keep 4445 of them.

Can you start with fewer than 100 peaches and choose fractions so that there is at least one peach left after a week?

Starting with fewer than 100, what is the longest you can make the peaches last?

## Week 4 - Task 1



## Week 4 - Task 2



Find a cuboid (with edges of whole number lengths) that has a surface area of exactly 100 square units.

Is there more than one?

Can you find them all?
Can you provide a convincing argument that you have found them all?
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## BRIGHT SPARKS EXTENSION

 QUESTIONSExpress the method for calculating surface area algebraically.

Which surface area values will generate lots of cuboids, and which give none or just one?

Could you set up a spreadsheet to help with the calculations?

## Week 5 - Task 1

| Round 82275 to the nearest: | a |
| :--- | :--- |
| i. 10 |  |
| ii. 100 |  |
| iii. 1000 |  |
| iv. 10000 |  |
|  |  |



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A bag contains 7 red beads, 4 blue beads, 5 orange beads and 2 pink beads.
If a bead is picked at random, what is the probability of getting:
i. A red bead?
ii. A blue or pink bead?
iii. Not an orange bead?

## Week 5 - Task 2

## sujcts

## Fibonacci Surprises

You may have seen this sequence before:

$$
1,1,2,3,5,8,13,21, \ldots
$$

It is called the Fibonacci Sequence, and each term is calculated by adding together the previous two terms in the sequence.

Try adding together any three consecutive Fibonacci numbers.

## What do you notice? <br> Can you explain it?

Choose any four consecutive Fibonacci numbers. Add the first and last, and divide by two.

## What do you notice? <br> Can you explain it?

Add together any six consecutive Fibonacci numbers and divide by four.
What do you notice?
Can you explain it?

BRIGHT SPARKS EXTENSION QUESTIONS

Can you discover any Fibonacci surprises of your own?

Write out algebraic representations of sets of consecutive terms \& explore different ways to combine them.

Have fun


## Week 6 - Task 1

Using $<,=$ or $>$, write the correct
symbol in each box to make the
statements correct.
$11 \times 8 \square 6 \times 14$
$90 \div 30 \square 80 \div 40$
$30 \times 2 \square 15 \times 4$
$155 \div 5 \square 160 \div 4$

Write these fractions in order, starting b
with the smallest.

| $\frac{7}{6}$ | $\frac{4}{6}$ | $\frac{6}{18}$ |
| :--- | :--- | :--- | :--- |
|  |  |  |
|  |  |  |



## Write:

i. 420 mm in cm
ii. 67 cm in m
iii. 5.45 kg in g
iv. 880 ml in l
v. 312 cm in mm

A teacher carried out a survey to find out students' favourite fruit. They drew a pie chart to show the results.

i. If 6 students chose banana, how many students chose apple?
ii. How many students, in total, were asked in the survey?

## Week 6 - Task 2



## Rules of Multiples Sudoku

Like a conventional Sudoku, this Multiples Sudoku has two basic rules:

1. Each column, row, and $3 \times 3$ subgrid must have the numbers 1 to 9 .
2. No column, row, or subgrid can have two cells with the same number.

The puzzle can be solved with the help of the numbers which are placed on the border lines between selected pairs of neighbouring cells. These numbers are the product of the two digits in the cells to the left and right of the clue.

For example, where there is a 12 on the line between two neighbouring cells, the cells must contain 2 and 6 , or 6 and 2 , or 3 and 4 , or 4 and 3 .

After finding the values of all the unknown digits, the puzzle is solved by the usual sudoku strategy.

BRIGHT SPARKS EXTENSION QUESTIONS

Can you create one of your own?

Maybe with different rules (i.e. a 'sum sudoku' or a 'difference sudoku' or a 'diagonal multiples sudoku' or... ?)

Have fun




[^0]:    Jamie has $£ 300$. He spends $65 \%$ of the d money on a new bike.

    How much does Jamie spend on his new bike?

