Maths 2 to 6+: Practice Exercises

Supplementary Notes

PLEASE CHECK!

Which version of Workabooks do you have?
Look for the version number on the back cover.

These are the Supplementary Notes for Version 2 (Ver 02).
For Version 1, please go to:
http://www.version1answers.co.uk/

Introduction

- Workabooks do not attempt to teach the whole statutory curriculum for any year group.
- Practice Exercises cover content from the statutory curriculum for specific year groups and sometimes revise and consolidate material which is introduced in other year groups.
- Additional material is occasionally included to extend children's knowledge and add interest
- The exercises can be completed in any order.
- Teachers can select exercises to consolidate what has been covered during the week in class, revise what has been learned earlier in the year or concentrate on specific areas which may be causing difficulties.
- A variety of question types give children the opportunity to consolidate what they have learned, reinforce skills, develop strategies for approaching and solving problems and enable them to succeed.
- Within the Practice Exercises work is provided at three levels:
  - *Level A* is to help children to a basic level of competence and builds on what has been learned in the previous year;
  - *Level B* is for those who are generally able to manage that year's work;
  - *Level C* is for children who are confident and can begin to approach more challenging work.
- Individual teachers may choose to use these levels in different ways depending on the needs of their children. Most children would begin at *Level A*, then work through as far as they are able or teachers can advise the levels they expect individual children to complete.

Maths 2

P13b.4
The puzzle grid is colour coded for one possible arrangement. Knowing this simplifies the task because it highlights the fact that one diagonal has all the same numbers in it.
You could choose to share this information with the children but this is not the only configuration which works.

P24b
For the purposes of this exercise and with this age group the apex of the cone has been defined as a corner and both surfaces described as faces.

P24c
Only shapes M and T have been included as identified cuboids to match the shapes given. While shape A is a cuboid, it does not have any square faces.

Maths 3

P6b.2

The final question in this bullet has a multitude of possible answers. The children define their own answers by the decisions they make. They may decide to identify a middle number and add the difference to find the third number or select the third number first and then split the difference to find the middle number.

P18b.2

This question can be answered in numerous different ways, for example:

a. children may use the previous statement 44 + ? = 90 and offer answers such as: 44 + 946 = 990

b. children may limit themselves to multiples of 10: 40 + 950 = 990

c. children may split the hundred and suggest answers such as: 344 + 646 = 990

d. children may split the hundreds and the tens to offer answers such as: 567 + 423 = 990

The teacher could stipulate their preferred option or accept anything the children offer.

P18c.1

As above.

P20a

Why might fish B be more difficult to measure than the other fish? How can you get the most accurate measurement for fish B? What might you use as well as your ruler?

P25b.1

Note one of the flags has no lines of symmetry.

P29b.2

The half shape will need to be rotated before being drawn onto the grid to create the whole shape

P30a.2

The pictogram is only partly filled in. Children will need to complete it using the information in the frequency table before answering the questions.

P30c.1

All the vehicles at the top, middle and bottom of the two page spread should be included in the count.

Through class discussion agree definitions for each vehicle when setting the homework task. Encourage the children to pose questions, for example:

- What is the difference between a van and a lorry?
- In which group will the coach go?
- How will the police vehicles be recorded?
- Is the campervan a car or a van?

Maths 4

L6

Multiples of 25: these are not intended to be shown as sequential.

P13c

There is more than one solution to this problem:
C = 1, A = 0, R = 9 and S must be an even number and N must be > S
So S = 2, N = 6 or S = 4, N = 7 or S = 6, N = 8

P14b

Later editions clarify: "...so that each line *of three numbers* adds up to 12."

P22b.5

Children should round their measurements to the nearest multiple of five, for example: 25 cm x 20 cm.

P26a

The Triangle is both Shape 6 and 9 - but Shape 9 only becomes apparent when the C exercise is completed.

P27b, P27c

Shape G is an irregular shape which can be named in a variety of ways using everyday language, for example: L shape, step shape, boot shape. It has the *obvious* 10 vertices but more accurately, it has *12 vertices*: 10 "pointy" vertices + 2 internal vertices.
[Euler's Theorem states Faces + Vertices - Edges =2. Shape G has 12 vertices + 8 Faces - 18 edges = 2]

P30b

Children should notice that four votes are not recorded on the pictogram. Why might this be?
This might be a class discussion or might be included in their statements about the pictogram.

P30c

Children should notice that the 30 km point and 50 km point can be taken at more than one place on the graph. Can they suggest which is the most appropriate point and give their reasons why?

Maths 5

P4a.3

Estimate by rounding one or both factors: "Don't round both if you can calculate in your head just by rounding one factor."

$99 \times 11 \approx 100 \times 11$

$256 \times 9 \approx 256 \times 10$

Schools may have their own policy on this, therefore teachers can advise pupils to use their preferred method.

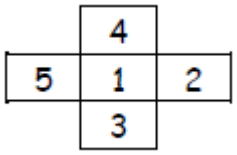
P6c.6/7
Children may wish to use different colours when colouring to help them to identify the different fractions.
P20c.4
• *What is the approximate height and weight of these Olympic athletes?*
Prior to completing this task it is advised that teachers discuss with their class which method of conversion will be used.
P24a
As this is an "a" exercise, we've included an equilateral triangle though it is arguable that it's not possible to make an equilateral triangle on a pinboard because the diagonal line is fractionally longer.
P26a
This website may help to visualise angles made by the hands of a clock: http://www.visnos.com/demos/clock
P30b & P30c
The method for recording remainders has not been stipulated. This has been left open so that schools can use their preferred methods.

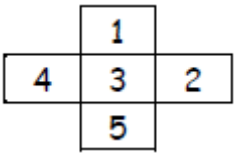
Maths 6

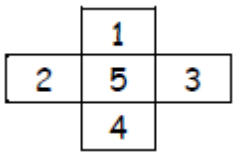
P9a, 9b, 9c
It is suggested that children should '*Show remainders as whole number*'. If this does not fit with the school's policy, teachers should advise children on the method they would prefer them to use.
P14c
'Current price of diesel fuel' - Teachers might choose to agree a common price with their pupils.
P15c
Possible locations for the water tank within the school grounds would need to be identified. This could be done as a class project prior to completing the homework task. Although water tanks are usually measured in centimetres, an example has been given in metres to make the task more accessible.
P18c
Polyhedral dice shapes generate a wider range of random numbers. Some shapes roll more effectively than others and not all shapes make what is considered to be 'fair dice', that is: shapes that are numbered so that each number has an equal probability of coming up when the shape is thrown onto a flat surface.
Children are likely to make reference to the following when explaining their choice of shape: how well the shape rolls, how easy it would be to read off the numbers, the system for numbering it or the purpose for which it might be used.
Alternatively, some children may explain with reference to 'fairness' using some knowledge of geometry, for example: all the faces are the same shape and all the angles and edges are equal so the dice will be 'fair'. For instance, when a 4-sided die, in the shape of a tetrahedron, is thrown it lands on one of its flat faces and what you see from above is a point, rather than a flat face. The value of the roll has to be read from the landing face at the bottom of the die. The tetrahedron doesn't roll as well as dice that have more faces because the shape is so pointy. Dodecahedral dice labelled with the numbers 1 to 12 can be used as calendar dice with one face representing each month which makes them useful for time-related games.
P19c
This graph does not start from 0 at the origin. This may need to be pointed out to children who have not experienced this previously.

Maths 6+

P9a & 9b & P9c
It is suggested that children should: '*Round answers to one decimal place*'. If this does not fit with the school's policy, teachers should advise children on the method they would prefer them to use.
P12c
There is more than one possible answer to this puzzle. Can the children suggest a reason why these are the only possible options?







P14b
'Current price of diesel fuel' - Teachers might choose to agree a common price with their pupils.

P14c

How many hours and minutes does Mr Asher actually spend travelling in his car for his job? Although not directly stated this question refers to Friday.

P15b

Possible locations for the water tank within the school grounds would need to be identified. This could be done as a class project prior to completing the homework task. Although water tanks are usually measured in centimetres, an example has been given in metres to make the task more accessible.

P15c

Surface area is not included in the key facts. Teachers may need to confirm that children are familiar with this terminology.

P18b

Polyhedral dice shapes generate a wider range of random numbers. Some shapes roll more effectively than others and not all shapes make what is considered to be 'fair dice', that is: shapes that are numbered so that each number has an equal probability of coming up when the shape is thrown onto a flat surface.

Children are likely to make reference to the following when explaining their choice of shape: how well the shape rolls, how easy it would be to read off the numbers, the system for numbering it or the purpose for which it might be used.

Alternatively, some children may explain with reference to 'fairness' using some knowledge of geometry, for example: all the faces are the same shape and all the angles and edges are equal so the dice will be 'fair'. For instance, when a 4-sided die, in the shape of a tetrahedron, is thrown it lands on one of its flat faces and what you see from above is a point, rather than a flat face. The value of the roll has to be read from the landing face at the bottom of the die. The tetrahedron doesn't roll as well as dice that have more faces because the shape is so pointy. Dodecahedral dice labelled with the numbers 1 to 12 can be used as calendar dice with one face representing each month which makes them useful for time-related games.

P18c

Chord' is not defined in the key facts. Teachers may need to confirm that children are familiar with this terminology.

Radii' is not defined in the key facts. Teachers may need to confirm that children are familiar with this terminology.

P19b

This graph does not start from 0 at the origin. This may need to be pointed out to children who have not experienced this previously.

P22c

The rule for the coordinates is 2n-1.

P24c

The rule for the one thousandth term is 2n+1.