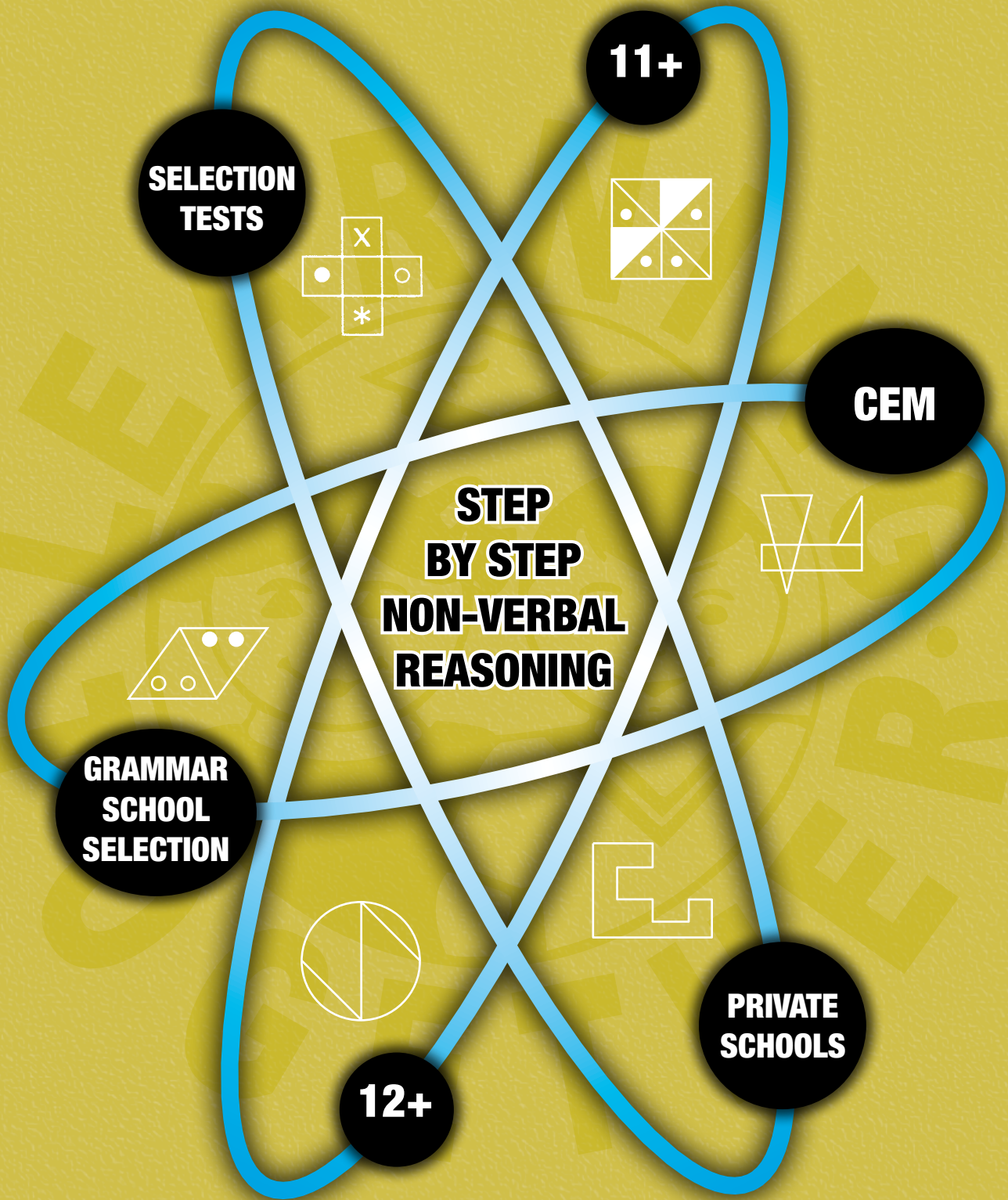


11+

HOW TO DO NON-VERBAL REASONING A STEP BY STEP GUIDE

STEP BY STEP NON-VERBAL REASONING



**Non Verbal Reasoning Prep suitable for 11+ Selection
Grammar School Selection, School Scholarship
Independent and Private School Selection
By Philip Kay**



Step
by Step
Non-Verbal
Book

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HOW THE BOOK IS SET OUT

- There are eighteen different topics.

- Each one is dealt with in a separate unit.

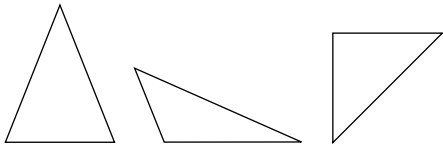
- Each unit has two sections:-
 1. The INTRODUCTION with a worked Example and Step by Step instructions.
 2. The EXERCISE with some Hints for extra help.

- A detachable answers sheet is provided at the back.

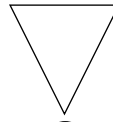
UNIT 2

WHICH SHAPE IS SIMILAR?

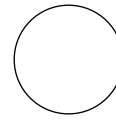
Which shape is similar to the group of three on the left? Circle one letter. Look at this example.



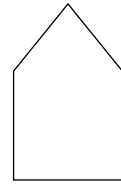
A



B



C



D

The answer is **B** because:-
Like the three shapes on the left, B is a triangle.

Not A, a square.
Not C, a circle.
Not D, a pentagon.

STEP BY STEP

THINGS TO LOOK FOR:-

- THE TYPES, COLOURS AND/OR NUMBER OF SHAPES
- THE POSITION OF THE SHAPES AND/OR THE SYMBOLS

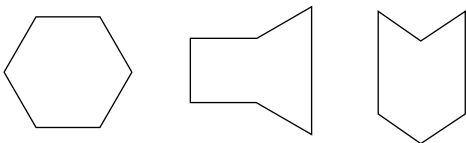
STEP 1:- Find what makes each group of three similar.

STEP 2:- Ignore any answers that are obviously wrong.

STEP 3:- Make sure your chosen answer matches the group of three in **every way**.

Which shape is similar to the group of three on the left? Circle one letter each time.
If necessary use the HINTS.

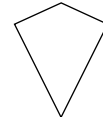
1



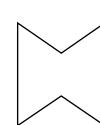
Count the number of sides.



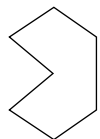
A



B

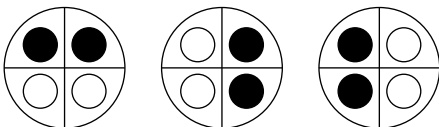


C

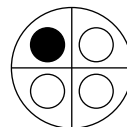


D

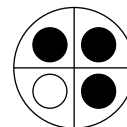
2



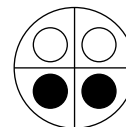
Look at the colours of the small circles.



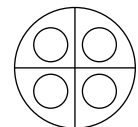
A



B

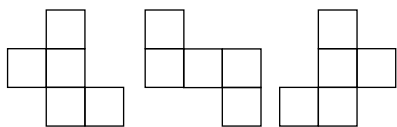


C

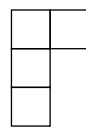


D

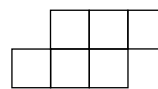
3



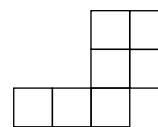
Count the number of squares.



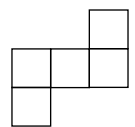
A



B

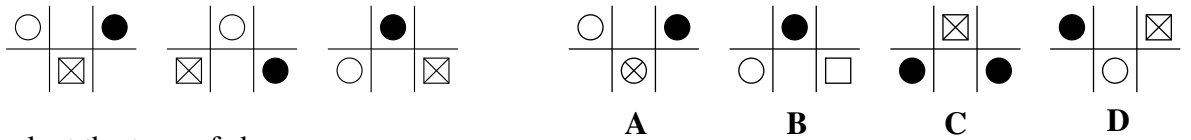


C



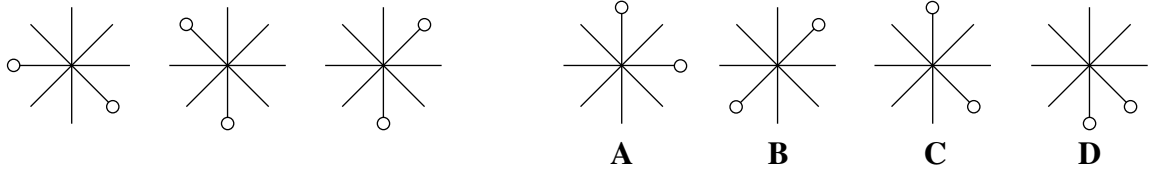
D

4



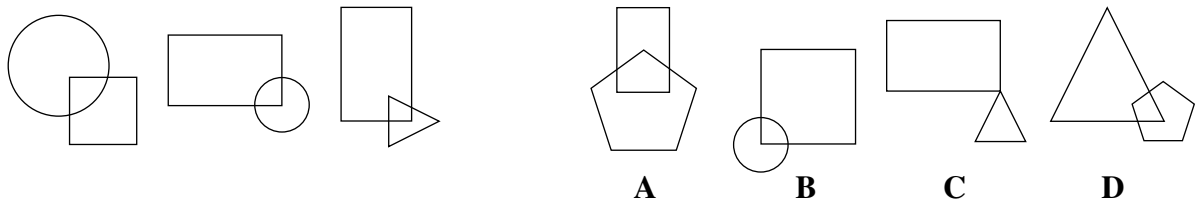
Look at the type of shapes.

5



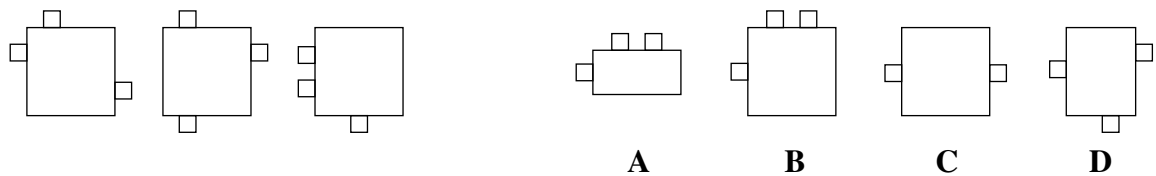
Count the number of lines between the circles.

6



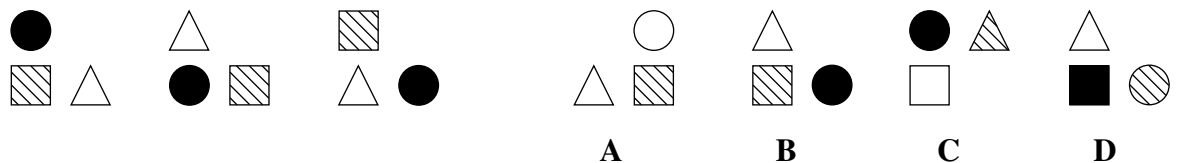
Look at the position of the two shapes.

7



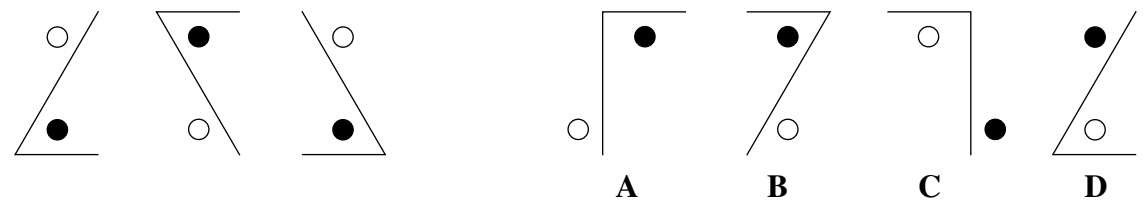
Count **all** the squares in each diagram.

8



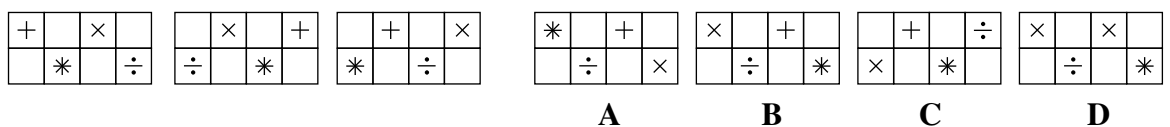
Look at the colours of the three shapes.

9



Look at the type of angle and the position of the circles.

10



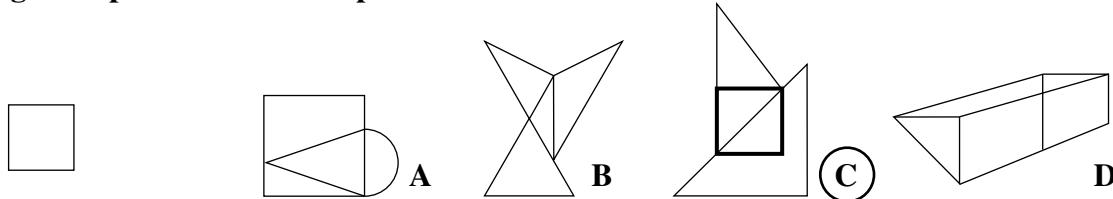
Look at the position and the types of symbols.

Score **10**

UNIT 6

WHERE IS IT HIDDEN?

Which larger shape is the small shape on the left hidden in? Circle one letter. Look at this example.



The square is hidden in C.

Not A, Not B or D, the square is too big. they do not contain squares.

STEP BY STEP

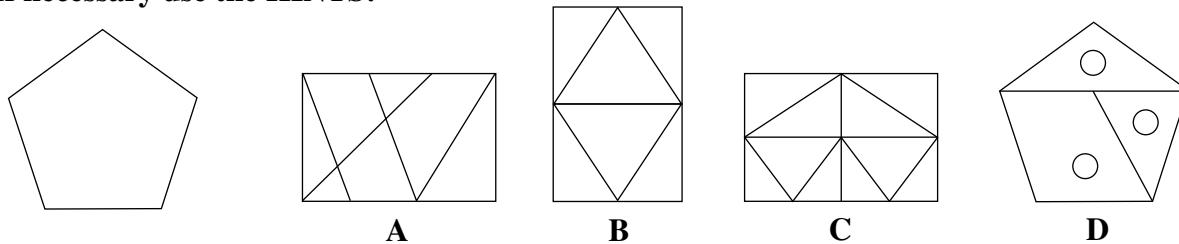
THINGS TO LOOK FOR:-

- THE HIDDEN SHAPE MAY HAVE LINES INSIDE IT
- IT MAY HAVE BEEN TURNED ROUND BUT NOT OVER
- IT MUST BE EXACTLY THE SAME SIZE

- STEP 1:-** Describe the shape to be hidden.
- STEP 2:-** Note the number of sides, length of lines and types of angles.
- STEP 3:-** Outline the hidden shape on your chosen answer.
- STEP 4:-** If necessary turn the shape round to help you find it.

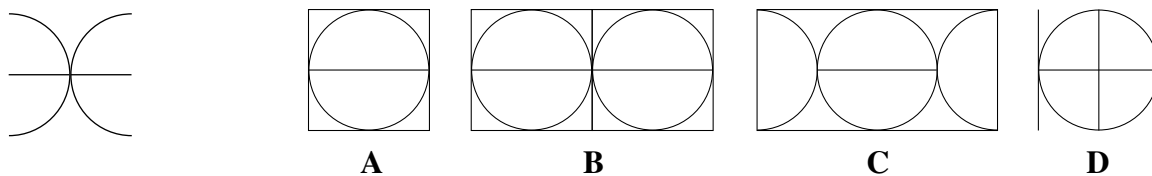
Which larger shape is the small shape on the left hidden in? Circle one letter each time. If necessary use the HINTS.

1



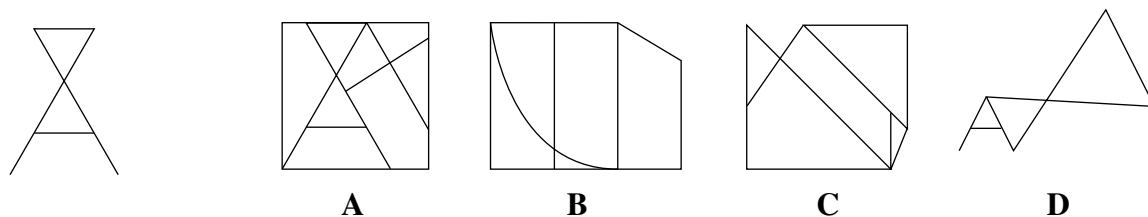
The pentagon does not turn.

2



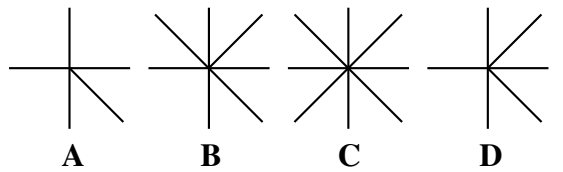
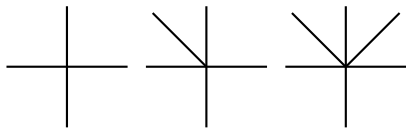
Two semi-circles are touching.

3



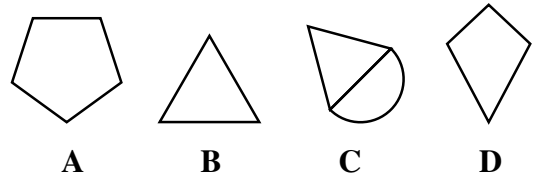
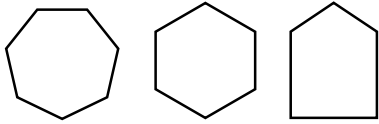
Small triangle at the top with the letter A below.

4



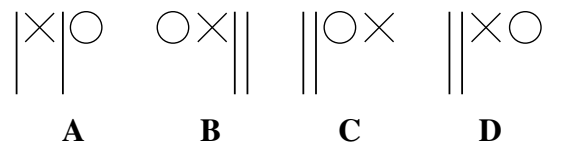
Add on another line going clockwise.

5



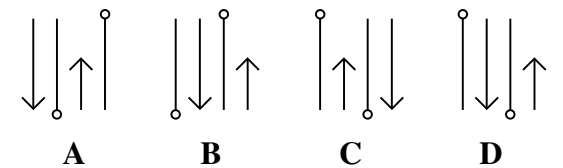
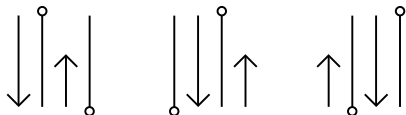
Count the sides.

6



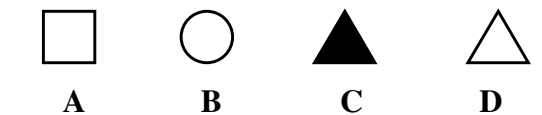
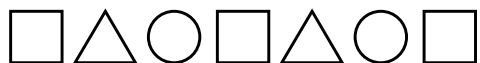
Symbol on the left moves. Where to?

7



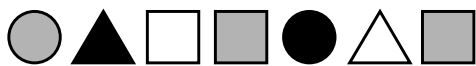
Symbol on the right moves. Where to?

8



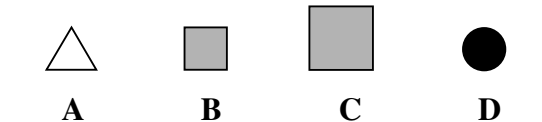
Look how the shapes change.

9



Look how the shapes and colours change.

10



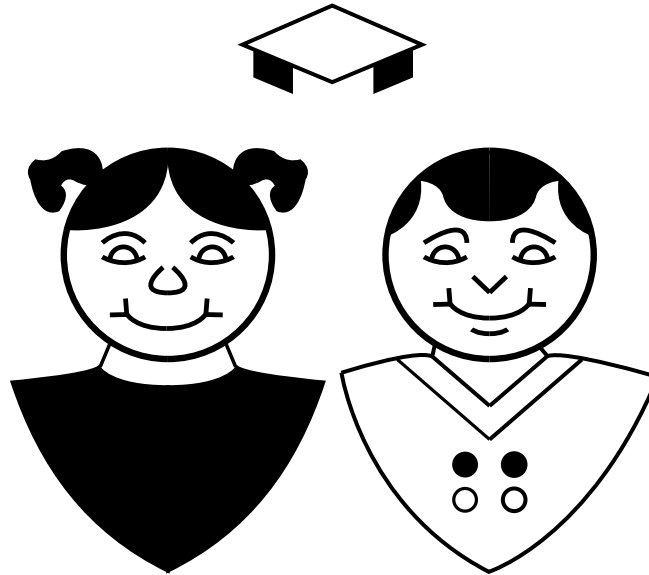
Look how the shapes, colours and size change.

Score **10**

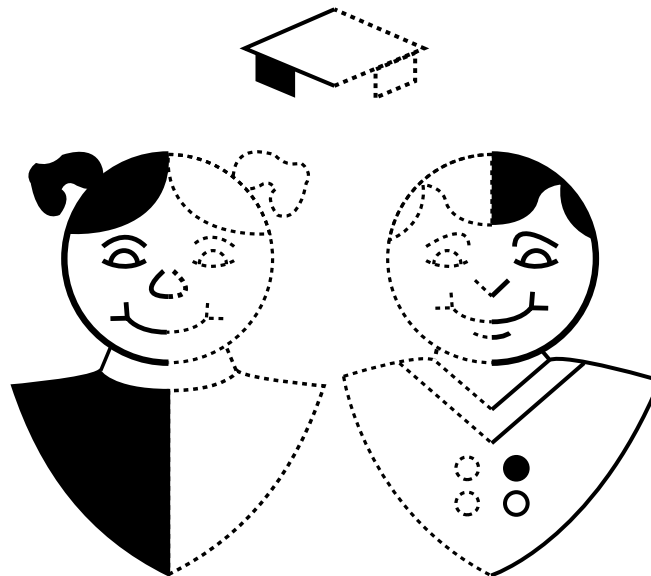
UNIT 9

WHICH SHAPE IS THE SAME, BUT FACING THE OPPOSITE DIRECTION?

Working through these two pages will help you to complete the questions on pages 24 and 25.



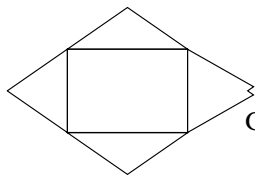
Look at the completed Learning Together picture above.
Now join up the dotted lines and shade in the one below, so that it looks exactly the same.



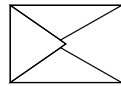
Look across both ways, \longrightarrow and \longleftarrow , to see how you have made the SAME SHAPE as before,
but FACING THE OPPOSITE DIRECTION.

The following page will help to explain this further.

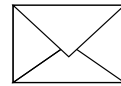
4



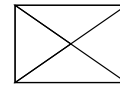
Gives



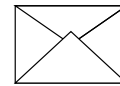
A



B



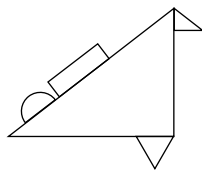
C



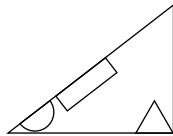
D

Each of the 4 flaps fold in $\rightarrow \downarrow \leftarrow$ but one is not a complete triangle.

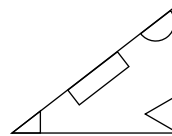
5



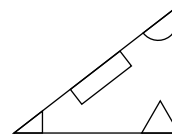
Gives



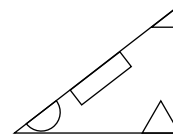
A



B



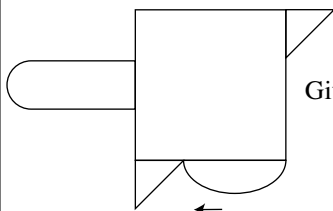
C



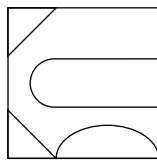
D

Fold in $\rightarrow \downarrow \leftarrow$ to give the same shapes in the opposite direction.

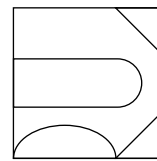
6



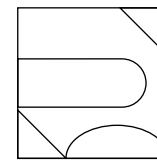
Gives



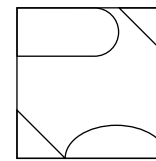
A



B



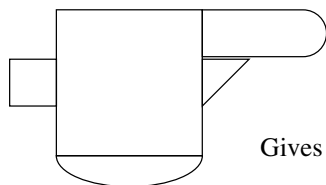
C



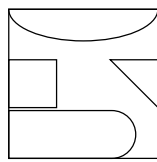
D

Fold in $\rightarrow \uparrow \leftarrow$ to give the same shapes in the opposite direction.

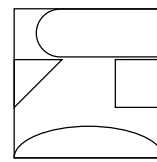
7



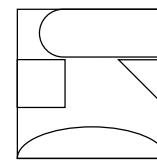
Gives



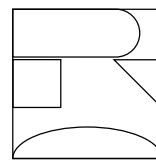
A



B



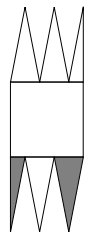
C



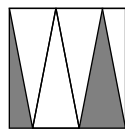
D

Fold in $\rightarrow \uparrow \leftarrow$

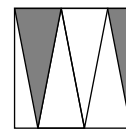
8



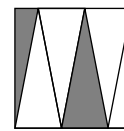
Gives



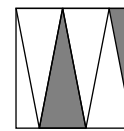
A



B



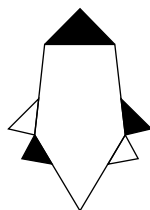
C



D

Fold in bottom flaps $\uparrow \uparrow \uparrow$, then top flaps $\downarrow \downarrow \downarrow$, keep the triangles the same colour.

9



Gives



A



B



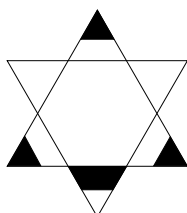
C



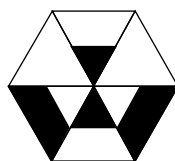
D

Fold in flaps $\rightarrow \downarrow \leftarrow$, keep the triangles the same colour.

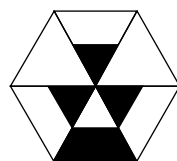
10



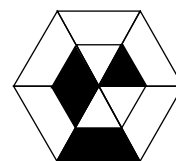
Gives



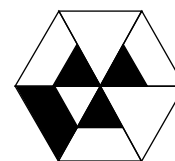
A



B



C

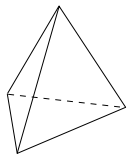


D

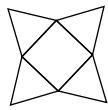
Look at the position of **all** the white triangles.

Score **10**

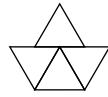
4



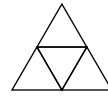
Gives



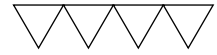
A



B



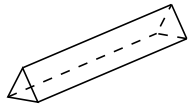
C



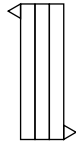
D

The base is a triangle and it has 3 other triangles, the opposite way round, joined on.

5



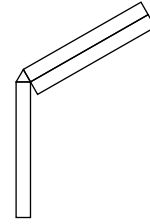
Gives



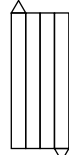
A



B



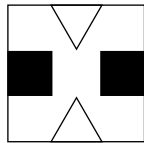
C



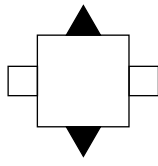
D

Triangles are joined on by matching the width of the rectangles.

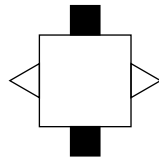
6



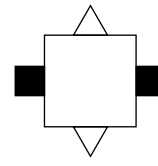
Gives



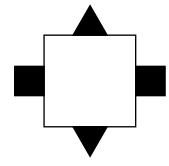
A



B



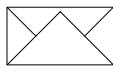
C



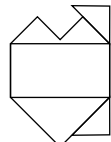
D

Each of the 4 flaps opens out $\left\langle \begin{array}{c} \updownarrow \\ \leftarrow \rightarrow \end{array} \right\rangle$ with shapes and colours in the correct position.

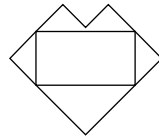
7



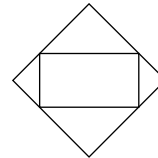
Gives



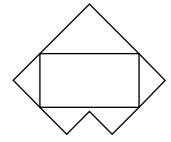
A



B



C



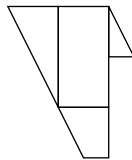
D

The flaps open out $\left\langle \begin{array}{c} \updownarrow \\ \leftarrow \rightarrow \end{array} \right\rangle$, but one is not a complete triangle.

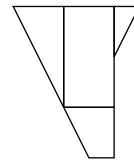
8



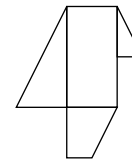
Gives



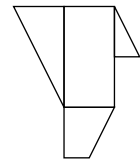
A



B



C



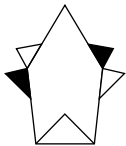
D

Each of the three flaps opens out $\left\langle \begin{array}{c} \leftarrow \rightarrow \\ \downarrow \end{array} \right\rangle$ to give the same shape in the opposite direction.

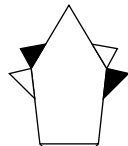
9



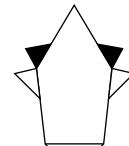
Gives



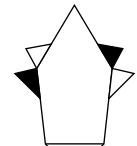
A



B



C



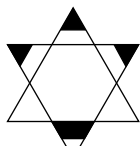
D

When flaps open out, they keep the same colours.

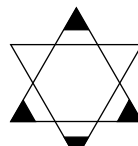
10



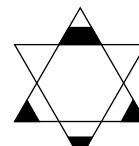
Gives



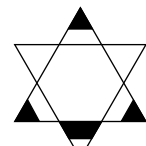
A



B



C



D

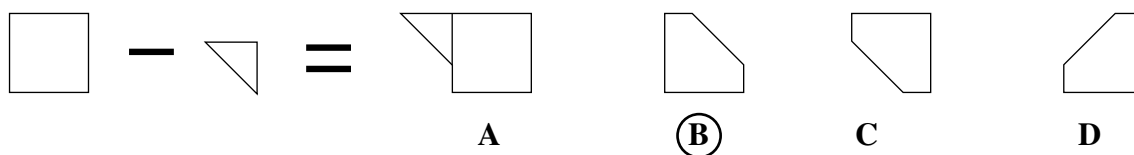
Look at the position of **all** the white triangles.

Score **10**

UNIT 15

WHAT SHAPE NOW AFTER SUBTRACTING?

In these questions one shape is subtracted from the other. The shapes do not turn. Circle one letter. Look at this example.



The answer is B because:-

The corner cut off matches exactly the triangle to be subtracted:



NOT A as it has been added.
NOT C as different triangles have been subtracted.
NOT D

STEP BY STEP

THINGS TO LOOK FOR:-

- THE SHAPE TO BE SUBTRACTED MUST NOT TURN
- SUBTRACTING THE SECOND SHAPE IS LIKE “CUTTING IT OUT” OF THE FIRST SHAPE

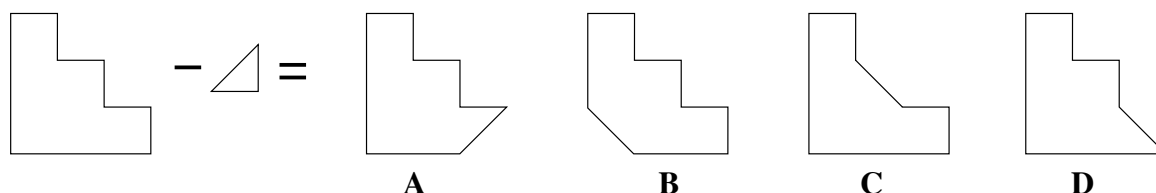
STEP 1:- Find where and how the second shape is “cut out” of the first shape.

STEP 2:- Draw the outline of the shape to be subtracted inside the first shape, as in the example.

STEP 3:- Which answer matches the shape that is left after subtracting?

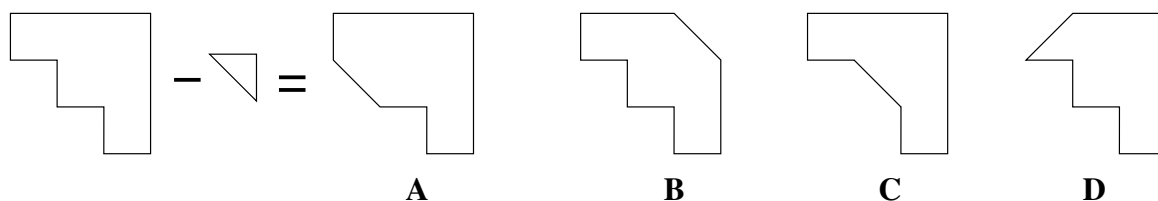
In these questions one shape is subtracted from the other. The shapes do not turn. Circle one letter each time. If necessary use the HINTS.

1



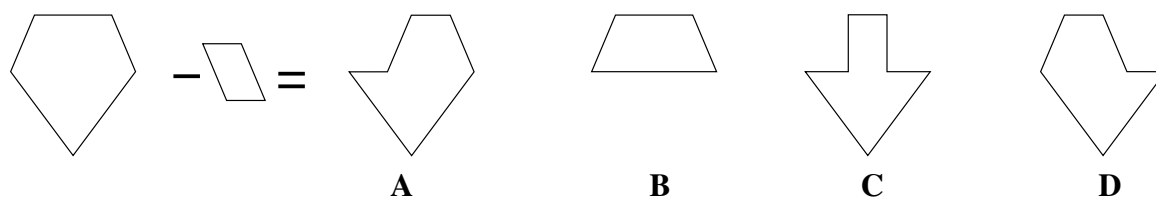
Cut off the correct corner to match the triangle that is subtracted.

2



The same triangle as the second shape must be subtracted, not added.

3



The diagonal sides of the shape to be subtracted must go in the same direction.

HOW WELL DID YOU DO?



Score $\frac{7}{10}$

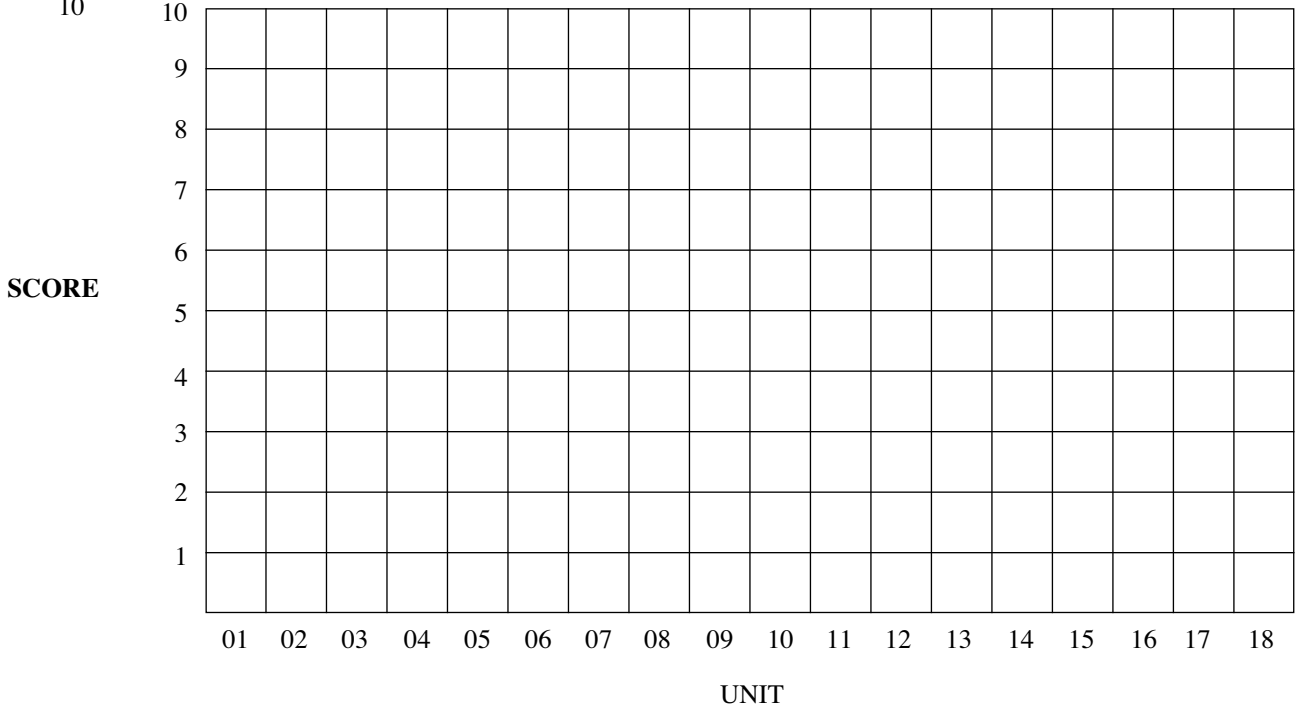
STEP BY STEP

STEP 1:- Look at the example for a score of $\frac{7}{10}$.

STEP 2:- Now shade in the bar chart below with your score for each unit.

STEP 3:- Enter at the bottom of the page how often you got each score.

STEP 4:- Enter your most common score in the box.



I scored	$\frac{0}{10}$	$\frac{1}{10}$	$\frac{2}{10}$	$\frac{3}{10}$	$\frac{4}{10}$	$\frac{5}{10}$	$\frac{6}{10}$	$\frac{7}{10}$	$\frac{8}{10}$	$\frac{9}{10}$	$\frac{10}{10}$	Total
How often?												18

10

MY MOST COMMON SCORE

Now you have finished this book, you are ready to start Test 01 in LEARNING TOGETHER's Practice Tests in Non Verbal Reasoning Book One.

STEP BY STEP NON VERBAL REASONING

ANSWERS



- UNIT 1**
1. 9
 2. 12
 3. 13
 4. 14
 5. 19
 6. 18
 7. 8
 8. 9
 9. 7
 10. 12

- UNIT 2**
1. C
 2. C
 3. D
 4. D
 5. C
 6. D
 7. B
 8. B
 9. B
 10. B

- UNIT 3**
1. $\frac{5}{6}$
 2. $\frac{3}{10}$
 3. $\frac{1}{8}$
 4. $\frac{1}{8}$
 5. $\frac{1}{6}$
 6. $\frac{3}{8}$
 7. $\frac{5}{11}$
 8. $\frac{4}{9}$
 9. $\frac{7}{12}$
 10. $\frac{3}{16}$

- UNIT 4**
1. C
 2. C
 3. D
 4. D
 5. A
 6. B
 7. E
 8. D
 9. E
 10. A

- UNIT 5**
1. $\frac{3}{5}$
 2. $\frac{1}{4}$
 3. $\frac{1}{2}$
 4. $\frac{1}{4}$
 5. $\frac{1}{3}$
 6. $\frac{3}{4}$
 7. $\frac{2}{3}$
 8. $\frac{1}{4}$
 9. $\frac{3}{4}$
 10. $\frac{2}{3}$

- UNIT 6**
1. D
 2. B
 3. A
 4. D
 5. C
 6. B
 7. C
 8. D
 9. C
 10. A

- UNIT 7**
1. D
 2. B
 3. A
 4. B
 5. D
 6. C
 7. C
 8. D
 9. B
 10. B

- UNIT 8**
1. 49
 2. 20
 3. 43
 4. 26
 5. 17
 6. 24
 7. 21
 8. 30
 9. 35
 10. 31

- UNIT 9**
1. C
 2. B
 3. A
 4. B
 5. B
 6. D
 7. B
 8. C
 9. E
 10. E

STEP BY STEP NON VERBAL REASONING

- UNIT 10**
- A
 - D
 - B
 - A
 - D
 - C
 - C
 - A
 - D
 - B

- UNIT 11**
- 160
 - 288
 - 243
 - 28
 - 63
 - 3
 - 3
 - 4
 - 8
 - 4

- UNIT 12**
- A
 - D
 - C
 - C
 - B
 - C
 - B
 - A
 - D
 - D

- UNIT 13**
- B
 - C
 - D
 - D
 - C
 - D
 - A
 - D
 - B
 - A

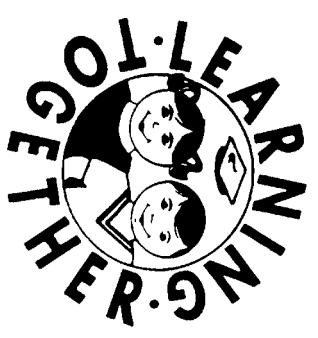
- UNIT 14**
- 3
 - 2
 - 4
 - 8
 - 8
 - 6
 - 9
 - 1
 - 4
 - 2
 - 5
 - 3
 - 2
 - 8
 - 4

- UNIT 15**
- A
 - B
 - D
 - B
 - B
 - D
 - D
 - B
 - B
 - B

- UNIT 16**
- A
 - B
 - C
 - C
 - A
 - D
 - C
 - B
 - D
 - C

- UNIT 17**
- A and E
 - B and D
 - A and F
 - B and F
 - B and C
 - C and E
 - A and C
 - A and D
 - C and F
 - D and E

- UNIT 18**
- | | | |
|---|----|----|
| + | | |
| | 10 | |
| | | 17 |
 - | | | |
|---|--|----|
| + | | |
| | | 16 |
| | | 17 |
 - | | | |
|---|---|---|
| + | 4 | 9 |
| | | |
| | | |
 - | | | |
|---|---|--|
| + | | |
| | 5 | |
| | | |
 - | | | |
|---|---|---|
| + | 5 | |
| | | 9 |
| | | |
 - | | | |
|---|----|--|
| + | | |
| | 17 | |
| | | |
 - | | | |
|---|----|----|
| + | | |
| | 11 | |
| | | 13 |
 - | | | |
|---|---|----|
| + | 7 | 10 |
| | | |
| | | |
 - | | | |
|---|---|----|
| + | | |
| | 6 | |
| | | 21 |



PUBLISHED BY LEARNING TOGETHER

18 Shandon Park, Belfast BT5 6NW. Phone/fax 028 90402086
 www.learningtogether.co.uk email: smcconkey@learningtogether.co.uk
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