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Appendices

APPENDIX A	Subtraction tests
APPENDIX B	Cognitive processing tests
APPENDIX C	Descriptive statistics

APPENDIX A

Subtraction tests

Subtraction Quiz
Part A

Name

Section 1

Answer these questions.

1 $5 - 2 = \dots\dots$

2 $9 -$
5
—

3 $13 - 6 = \dots\dots$

4 $17 -$
4
—

5 $18 -$
9
—

6 $38 -$
6
—

7 $88 -$
7
—

8 $37 -$
23
—

9 $58 - 25 = \dots\dots$

10 $54 -$
9
—

11 $73 -$
6
—

12 $358 -$
127
—

13 $451 - 251 = \dots\dots$

14 $43 -$
27
—

15 $66 -$
39
—

16 $365 -$
138
—

17 $467 - 193 = \dots\dots$

18 $861 -$
314
—

19 $539 -$
324
—

20 $932 -$
257
—

21 $472 -$
294
—

$$\begin{array}{r} 22 \quad 503 - \\ \quad \underline{138} \\ \hline \end{array}$$

$$23 \quad 720 - 229 = \dots\dots$$

$$\begin{array}{r} 24 \quad 400 - \\ \quad \underline{164} \\ \hline \end{array}$$

$$\begin{array}{r} 25 \quad 602 - \\ \quad \underline{87} \\ \hline \end{array}$$

$$\begin{array}{r} 26 \quad 3516 - \\ \quad \underline{2724} \\ \hline \end{array}$$

$$\begin{array}{r} 27 \quad 9378 - \\ \quad \underline{2174} \\ \hline \end{array}$$

$$\begin{array}{r} 28 \quad 5014 - \\ \quad \underline{2549} \\ \hline \end{array}$$

$$\begin{array}{r} 29 \quad 6000 - \\ \quad \underline{392} \\ \hline \end{array}$$

$$\begin{array}{r} 30 \quad 5000 - \\ \quad \underline{1030} \\ \hline \end{array}$$

$$\begin{array}{r} 31 \quad 45179 - \\ \quad \underline{14027} \\ \hline \end{array}$$

$$\begin{array}{r} 32 \quad 93750 - \\ \quad \underline{5867} \\ \hline \end{array}$$

$$\begin{array}{r} 33 \quad 20000 - \\ \quad \underline{16325} \\ \hline \end{array}$$

Section 2

1 In this algorithm we say 3 from 2 cannot be done. Give the reason why we say this.

$$\begin{array}{r} 52 - \\ \underline{13} \end{array}$$

2 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 56 - \\ \underline{37} \end{array}$$

3 $74 - 49 = \dots$ In the question you cannot take 9 from 4, so what do you do? Write your answer on the these lines.

4 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 744 - \\ \underline{159} \end{array}$$

5 A new pupil has arrived in class and cannot do the following subtraction.

84 - On the lines below, write out the way you tell the new pupil
 58 to get the answer right

6 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 306 - \\ \underline{115} \end{array}$$

Section 3

Find the missing digit (Δ) in each subtraction question.

1 $\begin{array}{r} 16 - \\ \underline{\Delta} \\ \underline{9} \end{array}$

$\Delta = \dots\dots$

2 $\Delta 2 - 16 = 26$

$\Delta = \dots\dots$

3 $\begin{array}{r} 87 - \\ \underline{2\Delta} \\ \underline{62} \end{array}$

$\Delta = \dots\dots$

4 $\begin{array}{r} 37\Delta - \\ \underline{154} \\ \underline{218} \end{array}$

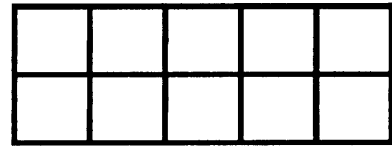
$\Delta = \dots\dots$

5 $\begin{array}{r} 458 - \\ \underline{1\Delta 5} \\ \underline{273} \end{array}$

$\Delta = \dots\dots$

Subtraction Quiz
Part B

Name



Section 4

- 1 Which of these numbers represents seventy five?
Draw a circle around the correct answer.
a 57 b 7005 c 705 d 75

- 2 What is the value of the 2 in the number 217?
Draw a circle around the correct answer.
a 2 units b 2 tens c 2 hundreds d 2 thousands

- 3 Which is the largest number?
Draw a circle around the correct answer.
a 2134 b 432 c 3241 d 4123

- 4 Which of these numbers represents one hundred and three?
Draw a circle around the correct answer.
a 13 b 1000 c 103 d 1103

- 5 What is the value of the 6 in the number 1365?
Draw a circle around the correct answer.
a 6 units b 6 tens c 6 hundreds d 6 thousands

- 6 Which is the largest number you can make using 2, 4, 6 and 0 once each?
Draw a circle around the correct answer.
a 6420 b 6240 c 4062 d 6024

- 7 How many tens in 600?
Draw a circle around the correct answer.
a 6 b 60 c 100 d 600

- 8 Rename 47
Draw a circle around the correct answer.
a $40 + 17$ b $22 + 35$ c $30 + 7$ d $30 + 17$

Section 5

- 1 15 children were at a party, each was given one balloon from a bag of 24. How many balloons were left in the bag?

Write a number sentence in this space.	Work out the answer in this space.

Draw a circle around the correct answer. a 15 b 24 c 11 d 9

- 2 22 tins of peaches have been taken out of a box holding 48 tins. How many tins are still in the box?

Write a number sentence in this space.	Work out the answer in this space.

Draw a circle around the correct answer. a 70 b 26 c 48 d 22

- 3 200 chairs are needed at a school concert. 124 have been collected, how many more have to be collected?

Write a number sentence in this space.	Work out the answer in this space.

Draw a circle around the correct answer. a 76 b 124 c 324 d 86

- 4 A van driver starts work at 8am with 83 parcels to deliver. By 10am the van has driven 18 kilometres and delivered 35 parcels. How many parcels are still in the van?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 83 b 48 c 38 d 18

- 5 A driver travelled from Sydney to Wollongong, a distance of 80km. The driver left Sydney at 9.30am and collected a friend at Sutherland, at 10.30 am. Sutherland is 35km from where the driver started the journey. How many kilometres did the friend travel in the car?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 80 b 35 c 45 d 55

- 6 It takes 14 minutes to unpack a crate of 240 apples. After 6 minutes, 115 apples have been unpacked. How many apples are still in the crate?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 125 b 20 c 115 d 355

- 7 There are 800 books in the school library at the start of term. One day 65 books are borrowed, The next day 48 books are borrowed and 27 are returned. How many books are in the school library now?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 827 b 687 c 660 d 714

Subtraction Quiz
Part C

Name

Section 1

Answer these questions.

1 $5 - 2 = \dots$

2
$$\begin{array}{r} 9 - \\ \underline{5} \\ - \end{array}$$

3 $13 - 6 = \dots$

4
$$\begin{array}{r} 17 - \\ \underline{4} \\ - \end{array}$$

5
$$\begin{array}{r} 18 - \\ \underline{9} \\ - \end{array}$$

6
$$\begin{array}{r} 38 - \\ \underline{6} \\ - \end{array}$$

7
$$\begin{array}{r} 88 - \\ \underline{7} \\ - \end{array}$$

8
$$\begin{array}{r} 37 - \\ \underline{23} \\ - \end{array}$$

9 $58 - 25 = \dots$

10
$$\begin{array}{r} 54 - \\ \underline{9} \\ - \end{array}$$

11
$$\begin{array}{r} 73 - \\ \underline{6} \\ - \end{array}$$

12
$$\begin{array}{r} 358 - \\ \underline{127} \\ - \end{array}$$

13 $451 - 251 = \dots$

14
$$\begin{array}{r} 43 - \\ \underline{27} \\ - \end{array}$$

15
$$\begin{array}{r} 66 - \\ \underline{39} \\ - \end{array}$$

16
$$\begin{array}{r} 365 - \\ \underline{138} \\ - \end{array}$$

17 $467 - 193 = \dots$

18
$$\begin{array}{r} 861 - \\ \underline{314} \\ - \end{array}$$

19
$$\begin{array}{r} 539 - \\ \underline{324} \\ - \end{array}$$

20
$$\begin{array}{r} 932 - \\ \underline{257} \\ - \end{array}$$

21
$$\begin{array}{r} 472 - \\ \underline{294} \\ - \end{array}$$

$$\begin{array}{r} 22 \quad 503 - \\ \quad \underline{138} \\ \hline \end{array}$$

$$23 \quad 720 - 229 = \dots\dots$$

$$\begin{array}{r} 24 \quad 400 - \\ \quad \underline{164} \\ \hline \end{array}$$

$$\begin{array}{r} 25 \quad 602 - \\ \quad \underline{87} \\ \hline \end{array}$$

$$\begin{array}{r} 26 \quad 3516 - \\ \quad \underline{2724} \\ \hline \end{array}$$

$$\begin{array}{r} 27 \quad 9378 - \\ \quad \underline{2174} \\ \hline \end{array}$$

$$\begin{array}{r} 28 \quad 5014 - \\ \quad \underline{2549} \\ \hline \end{array}$$

$$\begin{array}{r} 29 \quad 6000 - \\ \quad \underline{392} \\ \hline \end{array}$$

$$\begin{array}{r} 30 \quad 5000 - \\ \quad \underline{1030} \\ \hline \end{array}$$

$$\begin{array}{r} 31 \quad 45179 - \\ \quad \underline{14027} \\ \hline \end{array}$$

$$\begin{array}{r} 32 \quad 93750 - \\ \quad \underline{5867} \\ \hline \end{array}$$

$$\begin{array}{r} 33 \quad 20000 - \\ \quad \underline{16325} \\ \hline \end{array}$$

Section 2

1 In this algorithm we say 3 from n 2 cannot be done.
Give the reason why we say this.

$$\begin{array}{r} 52 - \\ \underline{13} \\ \hline \end{array}$$

2 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

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3 $74 - 49 = \dots$ In the question you cannot take 9 from 4, so what do you do? Write your answer on the these lines.

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84 - On the lines below, write out the way you tell the new pupil
58 to get the answer right.

6 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 306 - \\ \underline{115} \end{array}$$

Section 3

Find the missing digit (Δ) in each subtraction question.

1 $\begin{array}{r} 16 - \\ \Delta \\ \underline{9} \end{array}$

$\Delta = \dots\dots$

2 $42 - 16 = 26$

$\Delta = \dots\dots$

3 $\begin{array}{r} 87 - \\ \underline{2\Delta} \\ 62 \end{array}$

$\Delta = \dots\dots$

4 $\begin{array}{r} 37\Delta - \\ \underline{154} \\ \underline{218} \end{array}$

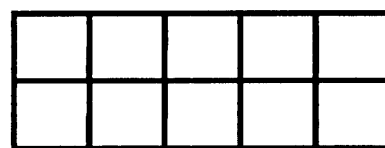
$\Delta = \dots\dots$

5 $\begin{array}{r} 458 - \\ \underline{1\Delta5} \\ \underline{273} \end{array}$

$\Delta = \dots\dots$

Subtraction Quiz
Part D

Name



Section 4

- 1 Which of these numbers represents seventy five?
Draw a circle around the correct answer.
- a 57 b 7005 c 705 d 75
- 2 What is the value of the 2 in the number 217?
Draw a circle around the correct answer.
- a 2 units b 2 tens c 2 hundreds d 2 thousands
- 3 Which is the largest number?
Draw a circle around the correct answer.
- a 2134 b 4321 c 3241 d 4123
- 4 Which of these numbers represents one hundred and three?
Draw a circle around the correct answer.
- a 13 b 1001 c 103 d 1103
- 5 What is the value of the 6 in the number 1365?
Draw a circle around the correct answer.
- a 6 units b 6 tens c 6 hundreds d 6 thousands
- 6 Which is the largest number you can make using 2, 4, 6 and 0 once each?
Draw a circle around the correct answer.
- a 6420 b 6240 c 4062 d 6024
- 7 How many tens in 600?
Draw a circle around the correct answer.
- a 6 b 60 c 100 d 600
- 8 Rename 47
Draw a circle around the correct answer.
- a $40 + 17$ b $22 + 35$ c $30 + 7$ d $30 + 17$

Section 5

- 1 15 children were at a party, each was given one balloon from a bag of 24. How many balloons were left in the bag?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 15 b 24 c 11 d 9

- 2 22 tins of peaches have been taken out of a box holding 48 tins. How many tins are still in the box?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

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Write a number sentence in this space.	Work out the answer in this space.

Draw a circle around the correct answer. a 80 b 35 c 45 d 55

- 6 It takes 14 minutes to unpack a crate of 240 apples. After 6 minutes, 115 apples have been unpacked. How many apples are still in the crate?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 125 b 20 c 115 d 355

- 7 There are 800 books in the school library at the start of term. One day 65 books are borrowed, The next day 48 books are borrowed and 27 are returned. How many books are in the school library now?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 827 b 687 c 660 d 714

Subtraction Quiz
Part E

Name

Section 1

Answer these questions.

1 $5 - 2 = \dots\dots$

2 $9 -$
 5
 —

3 $13 - 6 = \dots\dots$

4 $17 -$
 4
 —

5 $18 -$
 9
 —

6 $38 -$
 6
 —

7 $88 -$
 7
 —

8 $37 -$
 23
 —

9 $58 - 25 = \dots\dots$

10 $54 -$
 9
 —

11 $73 -$
 6
 —

12 $358 -$
 127
 —

13 $451 - 251 = \dots\dots$

14 $43 -$
 27
 —

15 $66 -$
 39
 —

16 $365 -$
 138
 —

17 $467 - 193 = \dots\dots$

18 $861 -$
 314
 —

19 $539 -$
 324
 —

20 $932 -$
 257
 —

21 $472 -$
 294
 —

$$\begin{array}{r} 22 \quad 503 - \\ \quad \underline{138} \\ \hline \end{array}$$

$$23 \quad 720 - 229 = \dots\dots$$

$$\begin{array}{r} 24 \quad 400 - \\ \quad \underline{164} \\ \hline \end{array}$$

$$\begin{array}{r} 25 \quad 602 - \\ \quad \underline{87} \\ \hline \end{array}$$

$$\begin{array}{r} 26 \quad 3516 - \\ \quad \underline{2724} \\ \hline \end{array}$$

$$\begin{array}{r} 27 \quad 9378 - \\ \quad \underline{2174} \\ \hline \end{array}$$

$$\begin{array}{r} 28 \quad 5014 - \\ \quad \underline{2549} \\ \hline \end{array}$$

$$\begin{array}{r} 29 \quad 6000 - \\ \quad \underline{392} \\ \hline \end{array}$$

$$\begin{array}{r} 30 \quad 5000 - \\ \quad \underline{1030} \\ \hline \end{array}$$

$$\begin{array}{r} 31 \quad 45179 - \\ \quad \underline{14027} \\ \hline \end{array}$$

$$\begin{array}{r} 32 \quad 93750 - \\ \quad \underline{5867} \\ \hline \end{array}$$

$$\begin{array}{r} 33 \quad 20000 - \\ \quad \underline{16325} \\ \hline \end{array}$$

Section 2

1 In this algorithm we say 3 from 2 cannot be done. Give the reason why we say this.

$$\begin{array}{r} 52 - \\ \underline{13} \\ \hline \end{array}$$

2 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 56 - \\ \underline{37} \\ \hline \end{array}$$

3 $74 - 49 = \dots$ In the question you cannot take 9 from 4, so what do you do? Write your answer on the these lines.

4 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 744 - \\ \underline{159} \\ \hline \end{array}$$

5 A new pupil has arrived in class and cannot do the following subtraction.

84 - On the lines below, write out the way you tell the new pupil
58 to get the answer right.

6 In this algorithm, draw a circle around each number that you have to rename to be able to calculate the correct answer.

$$\begin{array}{r} 306 - \\ \underline{115} \end{array}$$

Section 3

Find the missing digit (Δ) in each subtraction question.

1
$$\begin{array}{r} 16 - \\ \underline{\Delta} \\ 9 \end{array}$$

$$\Delta = \dots\dots$$

2 $42 - 16 = 26$

$$\Delta = \dots\dots$$

3
$$\begin{array}{r} 87 - \\ \underline{2\Delta} \\ 62 \end{array}$$

$$\Delta = \dots\dots$$

4
$$\begin{array}{r} 37\Delta - \\ \underline{154} \\ \underline{218} \end{array}$$

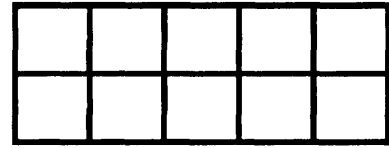
$$\Delta = \dots\dots$$

5
$$\begin{array}{r} 458 - \\ \underline{1\Delta5} \\ \underline{273} \end{array}$$

$$\Delta = \dots\dots$$

Subtraction Quiz
Part F

Name



Section 4

- 1 Which of these numbers represents seventy five?
Draw a circle around the correct answer.
a 57 b 7005 c 705 d 75

- 2 What is the value of the 2 in the number 217?
Draw a circle around the correct answer.
a 2 units b 2 tens c 2 hundreds d 2 thousands

- 3 Which is the largest number?
Draw a circle around the correct answer.
a 2134 b 4321 c 3241 d 4123

- 4 Which of these numbers represents one hundred and three?
Draw a circle around the correct answer.
a 13 b 1003 c 103 d 1103

- 5 What is the value of the 6 in the number 1365?
Draw a circle around the correct answer.
a 6 units b 6 tens c 6 hundreds d 6 thousands

- 6 Which is the largest number you can make using 2, 4, 6 and 0 once each?
Draw a circle around the correct answer.
a 6420 b 6240 c 4062 d 6024

- 7 How many tens in 600?
Draw a circle around the correct answer.
a 6 b 60 c 100 d 600

- 8 Rename 47
Draw a circle around the correct answer.
a $40 + 17$ b $22 + 35$ c $30 + 7$ d $30 + 17$

Section 5

- 1 15 children were at a party, each was given one balloon from a bag of 24. How many balloons were left in the bag?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 15 b 24 c 11 d 9

- 2 22 tins of peaches have been taken out of a box holding 48 tins. How many tins are still in the box?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 70 b 26 c 48 d 22

- 3 200 chairs are needed at a school concert. 124 have been collected, how many more have to be collected?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 76 b 124 c 324 d 86

- 4 A van driver starts work at 8am with 83 parcels to deliver. By 10am the van has driven 18 kilometres and delivered 35 parcels. How many parcels are still in the van?

Write a number sentence in this space.	Work out the answer in this space.

Draw a circle around the correct answer. a 83 b 48 c 38 d 18

- 5 A driver travelled from Sydney to Wollongong, a distance of 80km. The driver left Sydney at 9.30am and collected a friend at Sutherland, at 10.30 am. Sutherland is 35km from where the driver started the journey. How many kilometres did the friend travel in the car?

Write a number sentence in this space.	Work out the answer in this space.

Draw a circle around the correct answer. a 80 b 35 c 45 d 55

- 6 It takes 14 minutes to unpack a crate of 240 apples. After 6 minutes, 115 apples have been unpacked. How many apples are still in the crate?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 125 b 20 c 115 d 355

- 7 There are 800 books in the school library at the start of term. One day 65 books are borrowed, The next day 48 books are borrowed and 27 are returned. How many books are in the school library now?

Write a number sentence in this space.	Work out the answer in this space.
--	------------------------------------

Draw a circle around the correct answer. a 827 b 687 c 660 d 714

APPENDIX B

Cognitive processing tests



SURNAME:

FIRSTNAME:

AGE:

years

months

SCHOOL:

CLASS:

OFFICE USE ONLY - COMPUTER

PRMTRS

SC	N	O	#	Y	R	M	O	C	GP	V/S
1	2	3	4	5	6	7	8	9	10	11

RAW TTLS

N	S	P	L	S	P	W	S	S	H	PF	M	A
12	13	14	15	16	17	18	19	20	21	22	23	24

OFFICE USE ONLY - MANUAL

NUMBER SPAN TEST

ADMINISTRATIVE INSTRUCTIONS:

This is a test of your ability to remember sets of numbers. The teacher will read out the numbers. After the teacher has finished each set of numbers you are to write down the numbers in the exact order in which they were read out. Please do not write any numbers of a set until the whole set has been read out and you are told to begin writing. There will be 16 sets.

Some of the sets may be too long for you to remember all of the numbers. If you do not remember a number, put a cross in the space where you think it should go. Try to remember all the numbers in the exact order in which they were read out.

It is very important that you do not write numbers while a set is being read out, since this is a test of your memory for numbers.

Here is a practice. Turn to your **ANSWER SHEET 1 - NUMBER SPAN**.

"Ready. Practice Sequence. 7 2 4. Begin. Now write the numbers in the exact order."

NUMBER SPAN

EXAMPLE

5	2	7	9					
---	---	---	---	--	--	--	--	--

PRACTICE

--	--	--	--	--	--	--	--	--

1

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2

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3

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4

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6

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15

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16

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LETTER SPAN TEST

ADMINISTRATIVE INSTRUCTIONS

This is a test of your ability to remember sets of letters. The teacher will read out the letters. After the teacher has finished each set of letters you are to write down the letters in the exact order in which they were read out. Please do not write any letters of a set until the whole set has been read out and you are told to begin writing. There will be 16 sets.

Some of the sets may be too long for you to remember all of the letters. If you do not remember a letter, put a cross in the space where you think it should go. Try to remember all the letters in the exact order in which they were read out.

It is very important that you do not write letters while a set is being read out, since this is a test of your memory for letters. Use capital letters for your answers.

Here is a practice. Turn to your **ANSWER SHEET 2 - LETTER SPAN**.

"Ready. Practice Sequence. H R L. Begin. Now write the letters in the exact order."

LETTER SPAN

EXAMPLE

<i>R</i>	<i>P</i>	<i>C</i>	<i>K</i>					
----------	----------	----------	----------	--	--	--	--	--

PRACTICE

--	--	--	--	--	--	--	--	--	--

1

--	--	--	--	--	--	--	--	--	--	--

2

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3

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4

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5

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15

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16

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WORD SPAN TEST

ADMINISTRATIVE INSTRUCTIONS

This is a test of your ability to remember sets of words. The teacher will read out the words. After the teacher has finished each set of words you are to write down the words in the exact order in which they were read out. Please do not write any words of a set until the whole set has been read out and you are told to begin writing. There will be 12 sets.

Some of the sets may be too long for you to remember all of the words. If you do not remember a word, put a cross in the space where you think it should go. Try to remember all the words in the exact order in which they were read out.

It is very important that you do not write words while a set is being read out, since this is a test of your memory for words.

Here is a practice. Turn to your **ANSWER SHEET 3 - WORD SPAN**.

"Ready. Practice Sequence. MAN CAT ICE. Begin. Now write the words in the exact order."

WORD SPAN

EXAMPLE: *man hill cup* _____

PRACTICE: _____

1. : _____

2. : _____

3. : _____

4. : _____

5. : _____

6. : _____

7. : _____

8. : _____

9. : _____

10. : _____

11. : _____

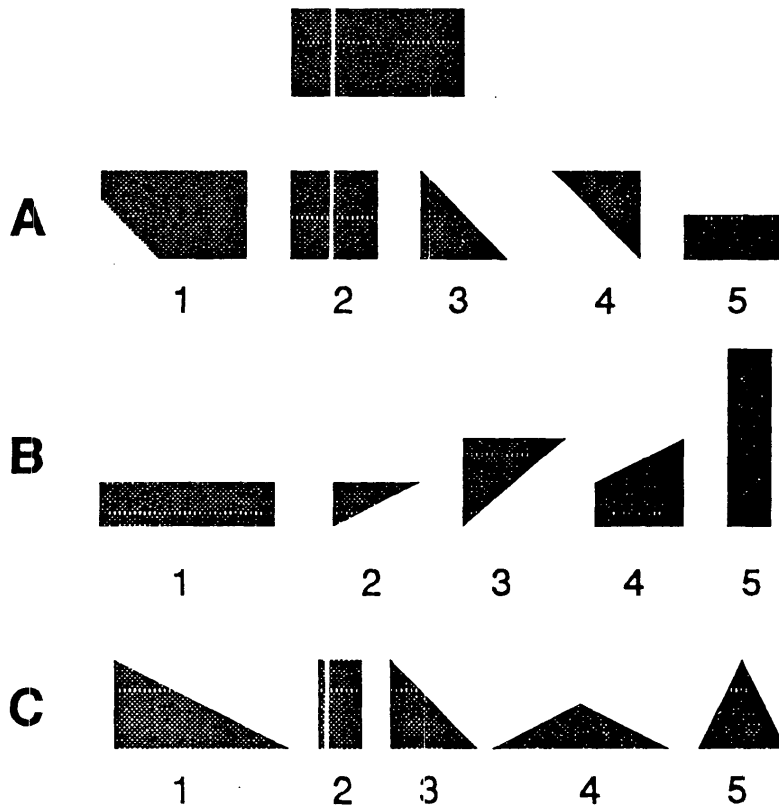
12. : _____

SHAPES TEST

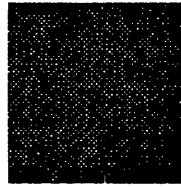
ADMINISTRATIVE INSTRUCTIONS

This is a test of your ability to tell which shapes can be put together to make a certain figure. At the top of each page is the figure that you have to make with the shapes. Beneath each figure are four rows of shapes. Each row has five shapes in it. Your task is to decide which of the five shapes in each row will make the complete figure of the same size when put together. Any number of shapes, from two to five, may be used to make the complete figure. Each figure may be turned around to any position but it cannot be turned over. It may help you to sketch the way the shapes fit together. You may use any blank space for doing this. When you have decided which shapes make the complete figure, circle each of the numbers underneath the shapes that you would use. You have seven minutes for this test. If you finish early, check your answers.

PRACTICE EXAMPLES



[A-2,3,4. B-1,5. C-1,4,5]



A



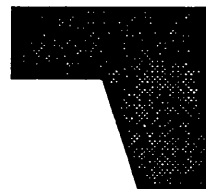
1



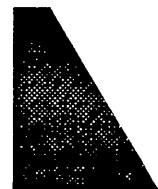
2



3

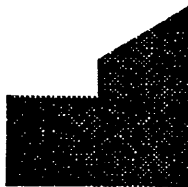


4



5

B



1



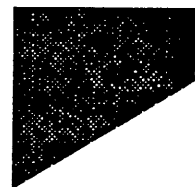
2



3



4



5

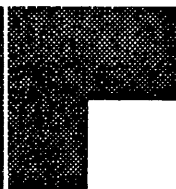
C



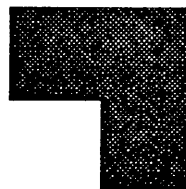
1



2



3



4



5

D



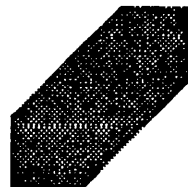
1



2



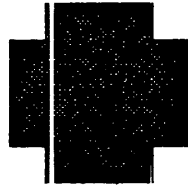
3



4



5



E



1



2



3

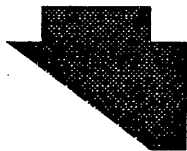


4



5

F



1



2



3



4



5

G



1



2



3



4



5

H



1



2



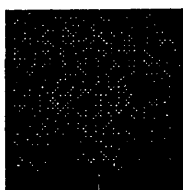
3



4



5



I



1



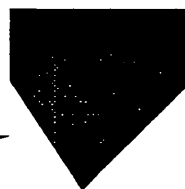
2



3



4



5

J



1



2



3



4



5

K



1



2



3



4



5

L



1



2



3



4



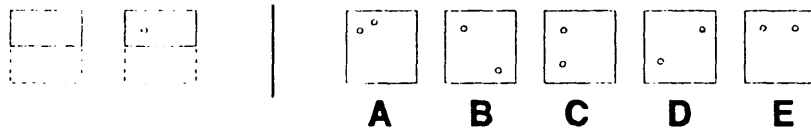
5

PAPER FOLDING TEST

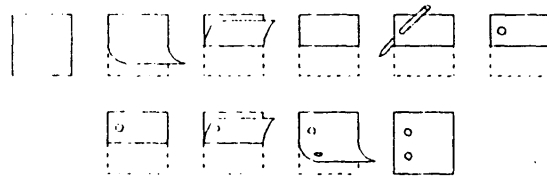
ADMINISTRATIVE INSTRUCTIONS

In this test you are asked to imagine the folding and unfolding of pieces of paper. In each problem in the test there are some figures drawn on the left of a vertical line and there are others drawn on the right of the line. The figures on the left represent a square piece of paper being folded, and the last of these figures has a small circle drawn on it to show where the paper has been punched. The hole is punched through all the thicknesses of paper at that point. One of the five figures on the right of the vertical line shows where the holes will be when the paper is unfolded. Your task is to decide which is the correct figure, and then circle the letter under your choice. If you finish early, check your answers.

Now try the practice problem.

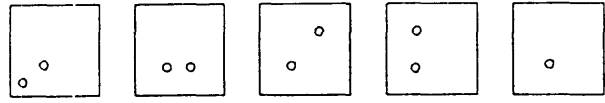
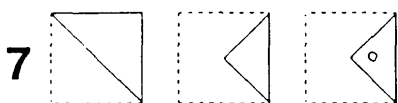
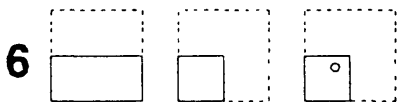
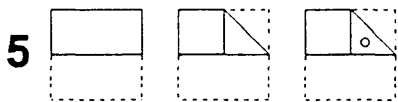
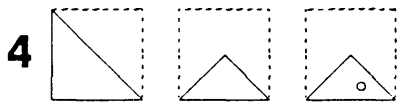
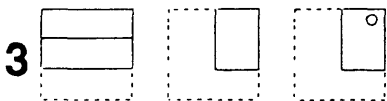
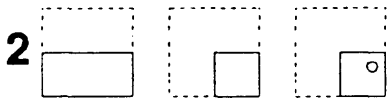
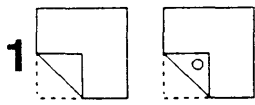


The correct answer to the sample problem is C and so the letter C should be circled. The figures below show how the paper was folded and why C is the correct answer.

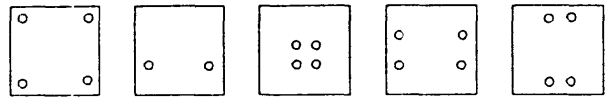


In these problems, all of the folds that are made are shown in the figures on the left of the line, and the paper is not turned or moved in any way except to make the folds shown in the figures. Remember, the answer is the figure that shows the positions of the holes when the paper is unfolded. Circle the letter of your answer. Turn to **ANSWER SHEET 7**.

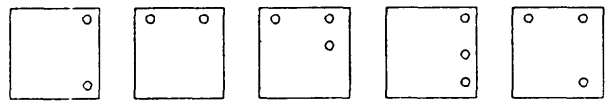
PAPER FOLDING



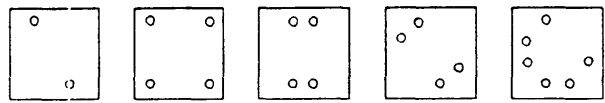
A B C D E



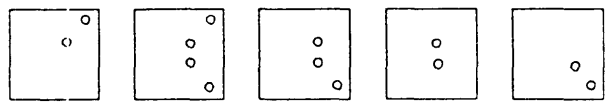
A B C D E



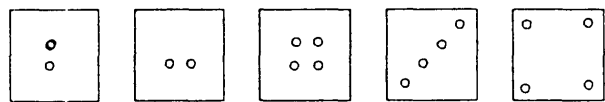
A B C D E



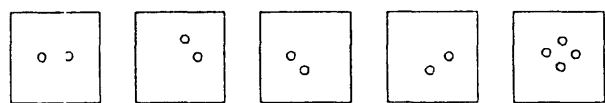
A B C D E



A B C D E



A B C D E

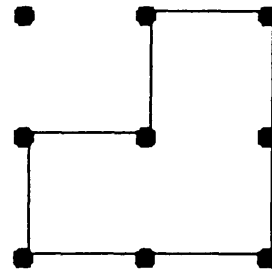
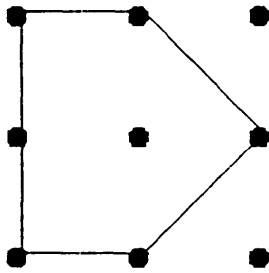


A B C D E

MATRIX A TEST

ADMINISTRATIVE INSTRUCTIONS:

If you look at Answer Sheet 8 you will see that there are a number of sets of nine dots. Within each group it is possible to draw many shapes by joining up the dots with lines.



The teacher will show you a number of shapes, each drawn on a large sheet of paper. Each sheet contains a shape drawn by joining up some of the nine dots. Each sheet will be shown for five seconds. Look at it carefully while it is displayed. When the teacher takes it away, copy the same shape onto your set of nine dots. You will have ten seconds to do this before the next sheet is shown.

Let us have a practice using the two sets of nine dots labelled "A" and "B" on Answer Sheet 8. Copy the first practice example onto the set of dots labelled "A". Copy the second practice example onto the set of dots labelled "B".

Remember:

1. Each shape will be shown for five seconds.
2. When the shape is taken away copy it onto the set of dots. You have ten seconds to do this.

MATRIX A**PRACTICE SPACES**

A	•	•	•	B	•	•	•
	•	•	•		•	•	•
	•	•	•		•	•	•

TEST SPACES

1	•	•	•	2	•	•	•
	•	•	•		•	•	•
	•	•	•		•	•	•

3	•	•	•	4	•	•	•
	•	•	•		•	•	•
	•	•	•		•	•	•

5	•	•	•	6	•	•	•
	•	•	•		•	•	•
	•	•	•		•	•	•

7	•	•	•	8	•	•	•
	•	•	•		•	•	•
	•	•	•		•	•	•

9 • • •
 • • •
 • • •

10 • • •
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11 • • •
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12 • • •
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16 • • •
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17 • • •
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18 • • •
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 • • •

The data in Table C.1 present the unadjusted mean scores on each component of the pretest, the posttest and the retention test, for each of the three teaching approaches (treatments 1, 2 and 3) and for each of the four simultaneous and successive processing categories (HH, high simultaneous-high successive processing; HL, high simultaneous-low successive processing; LH, low simultaneous-high successive processing; and LL, low simultaneous-low successive processing).

Table C.1
Mean scores on components of pretest, posttest and retention test,
by treatment, and by simultaneous and successive processing.

Sim/succ Component*	Treatment 1				Treatment 2				Treatment 3			
	HH n=6	HL n=10	LH n=7	LL n=9	HH n=10	HL n=8	LH n=6	LL n=9	HH n=7	HL n=6	LH n=9	LL n=10
Algorithm												
Pre	76.0	46.3	46.6	35.9	59.7	62.0	52.0	45.4	46.6	64.3	37.2	42.0
Post	93.2	71.3	68.7	53.2	91.8	89.1	86.5	65.3	71.3	71.3	48.9	60.1
Retention	101.4	89.8	72.8	45.9	89.7	84.6	70.3	55.6	59.4	56.5	44.7	52.3
Explanation												
Pre	5.0	6.0	3.0	2.4	5.9	5.8	3.7	4.1	4.4	6.0	3.9	4.0
Post	10.0	6.9	6.8	5.6	9.3	7.6	7.8	3.1	6.0	5.3	4.1	5.9
Retention	11.6	7.6	4.3	4.9	9.0	6.0	6.7	2.1	5.0	7.3	3.7	6.0
Missing digits												
Pre	3.4	2.8	1.5	1.1	4.0	3.6	2.2	1.3	2.6	2.8	1.4	1.3
Post	4.4	2.6	3.0	1.9	3.8	3.6	3.0	0.9	2.7	2.5	2.6	2.3
Retention	3.8	2.6	1.8	0.9	4.2	2.7	3.0	0.9	2.7	2.0	1.6	2.3
Place value												
Pre	7.0	6.5	6.8	6.0	7.2	6.3	6.0	5.8	6.0	6.3	5.4	5.9
Post	7.0	6.1	7.0	6.2	7.7	6.1	6.8	5.8	6.9	7.0	5.6	6.7
Retention	7.0	6.9	6.6	5.4	7.8	6.9	7.0	6.4	7.0	7.0	5.9	6.6
Problem solving												
Pre	25.0	10.5	14.2	7.7	13.8	12.6	12.0	5.9	13.4	14.3	6.1	8.3
Post	26.6	17.1	22.2	14.3	23.9	25.1	15.8	12.6	19.7	29.8	13.3	14.1
Retention	31.0	20.8	19.9	12.9	25.6	21.8	16.2	10.0	14.6	19.3	12.1	11.3

* Maximum possible scores: algorithm, 129; explanation, 13; missing digits, 6; place value, 8; problem solving, 44.