# INSTANT RECALL FACTS

## at Threshfield Primary School

**Information for Parents**

# What Are Instant Recall Facts (or IRFs)?

IRFs are those "pieces" of mathematical knowledge that we expect children to know off-by-heart or be able to work out very quickly (within 3 seconds).

This includes + and - number bonds, counting on and back, tables (x and ÷), equivalence of units of measure, square and cube numbers.

4 + ? = 10

? – 8 = 7

6 x 2 = ?

21 ÷ 3 = ?

30 + ? = 100

100 – ? = 83

$9 \times 6 = ?$

$63 \div ? = 9$

$? \text{ kg} = 7{,}600g$

$6.4\text{cm} = ? \text{ mm}$

$9^3 = ?$

$?^2 = 144$

# Why Are They Important?

Research shows that :-

1. Learning key facts 'by heart' enables children to concentrate on the calculation which helps them to develop calculation strategies.

2. Using and applying strategies to work out answers helps children to acquire and so remember more facts.

3. Many children who are not able to recall key facts often treat each calculation as a new one and have to return to first principles to work out the answer again.

4. Once they have a secure knowledge of some key facts, and by selecting problems carefully, you can help children to appreciate that from the answer to one problem, other answers can be generated.

# North Yorkshire Progression in Instant Recall

# INSTANT RECALL MISSION

# Overview

- Takes the form of a space journey, beginning with Astronaut Selection and ending with reaching the Milky Way.

- This is an 11 stage system of instant recall with between 6 and 9 targets within each stage.

- The targets are all aspects that are taught regularly in school, so do not form new content.

- The system is about a rigorous and systematic approach to making sure that ALL children have good instant recall.

- The stages are not linked to year groups as the progression is about building each child's instant recall systematically.

# The stages

1. Astronaut selection
2. Launch pad
3. Mercury
4. Venus
5. Earth
6. Mars
7. Jupiter
8. Saturn
9. Uranus
10. Neptune
11. The Milky Way
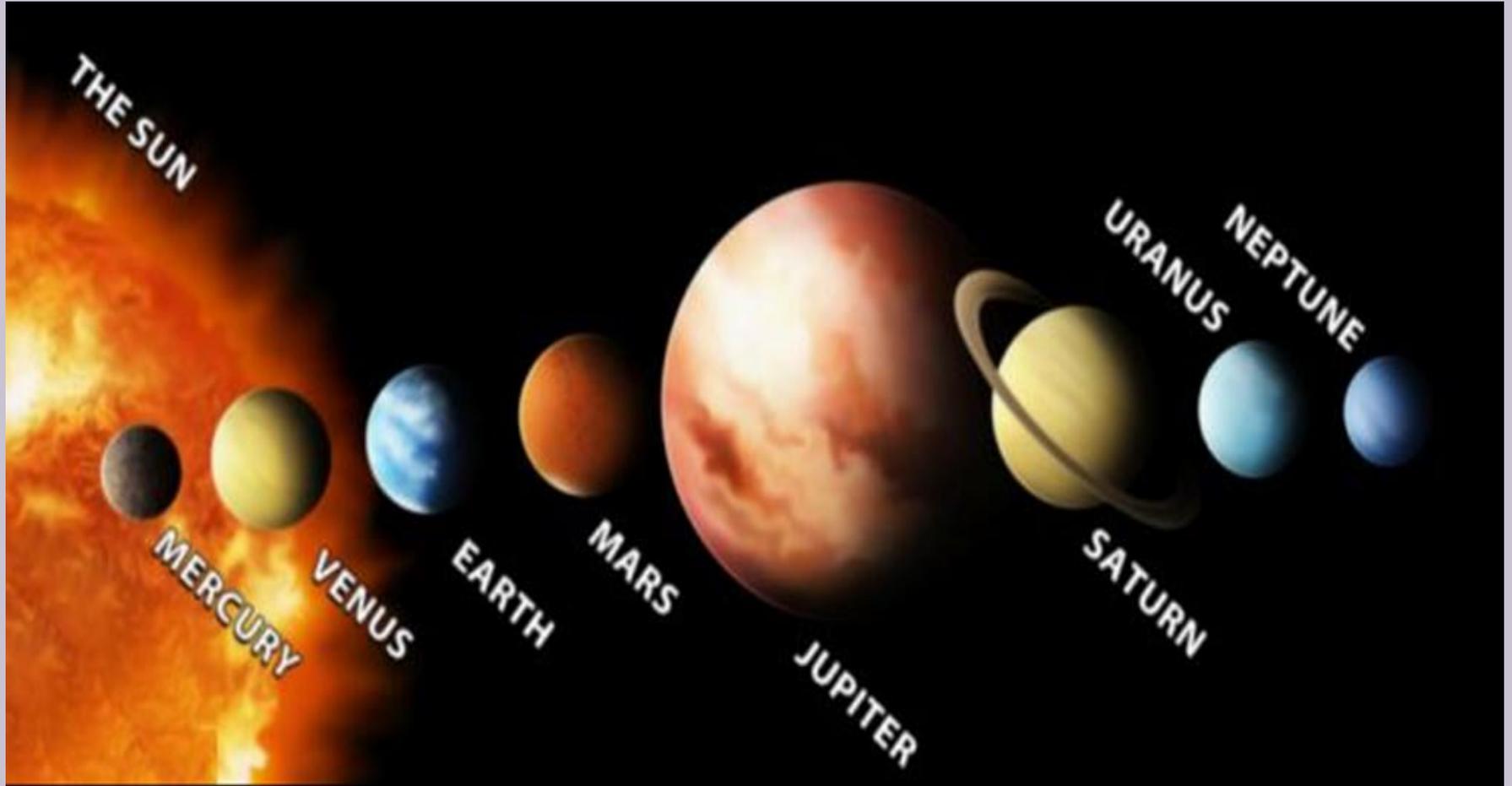
# 1. Astronaut selection

| |
|---|
| 1.1 Recites numbers in order to 10 |
| 1.2 Recognises numerals 1 to 5 |
| 1.3 Counts up to three or four objects by saying one number name for each of them |
| 1.4 Counts out up to six objects from a larger group |
| 1.5 Selects the correct number to represent 1 to 5 |
| 1.6 Selects the correct number to represent 1 to 10 |
| 1.7 Counts objects to 10 |
| 1.8 Count beyond 10 |

# 2. Launch pad

| |
|---|
| 2.1 Say the numbers 0-20 accurately |
| 2.2 Read the numbers 1 to 20 in numerals |
| 2.3 Say 1 more than any number between 0-20 |
| 2.4 Say 1 less than any number between 0-20 |
| 2.5 Say 1 more and 1 less than any two digit number |
| 2.6 To count in twos *2, 4, 6, 8, 10…* |
| 2.7 To count in fives *5, 10, 15, 20, 25, 30, 35…* |
| 2.8 To count in tens *10, 20, 30, 40, 50, 60, 70…* |

# 3. Mercury

3.1 Know by heart all number bonds to 10, *so 2 + 8, 1 + 9, 5 + 5 etc*

3.2 Know the days of the week, months of the year and seasons

3.3 To know by heart all addition and subtraction facts for each number up to 5, *so $ + 0, 3 − 2, 1 + 4 etc*

3.4 Recall the doubles of all numbers to 10, *so double 6 = 12, double 9 = 18 etc*

3.5 Know by heart all number bonds that total 20

3.6 Know by heart all addition and subtraction facts for each number up to 10

# 4. Venus

4.1 Know by heart all bonds of multiples of 10 to 100

4.2 Know by heart doubles and halves of all numbers to 20

4.3 Count in tens from any number, forward or backward

4.4 Know by heart addition and subtraction facts for each number up to 20

4.5 Know by heart all multiplication facts, and division facts, for 2, up to 2 x 12

4.6 Know by heart all multiplication facts, and division facts, for 5, up to 5 x 12

4.7 Know by heart all multiplication facts, and division facts, for 10, up to 10 x 12

# 5. Earth

5.1 Know by heart all sums and differences of multiples of 10 up to 100

5.2 Know by heart all number bonds that total 100

5.3 Know by heart all doubles of multiples of 5 up to 100 so *double 35, double 75*

5.4 Know by heart all doubles of multiples of 10 up to 100 so *double 60, double 30*

5.5 Know by heart all halves of all multiples of 10 up to 100 *so halve 70, halve 40*

5.6 Know by heart all multiplication facts, and division facts, for 3, up to 3 x 12

5.7 Know by heart all multiplication facts, and division facts, for 6, up to 6 x 12

5.8 Know by heart all multiplication facts, and division facts, for 4, up to 4 x 12

16

# 6. Mars

6.1 Know the number of seconds in a minute, minutes in an hour and hours in a day

6.2 Know the number of days in a week, month and year, including leap years

6.3 Know the number of g in kg, ml in l, mm in cm, cm in m and m in km

6.4 Count from zero in steps of 4

6.5 Count from zero in steps of 8

6.6 Count from zero in steps of 50

6.7 Count from zero in steps of 100

# 7. Jupiter

7.1 Recognise multiples of 2, 5, 10 up to 1000

7.2 Double any 2 digit number *so double 38, double 43,double 97*

7.3 Halve any 2 digit number *so halve 36, halve 67, halve 72*

7.4 Know by heart all multiplication facts for 7, up to 7 x 12

7.5 Know by heart all division facts, for 7, up to 7 x 12

7.6 Know by heart all multiplication facts for 8, up to 8 x 12

7.7 Know by heart all division facts for 8 up to 8 x 12

7.8 Know by heart all multiplication facts for 9, up to 9 x 12

7.9 Know by heart all division facts, for 9, up to 9 x 12

# 8. Saturn
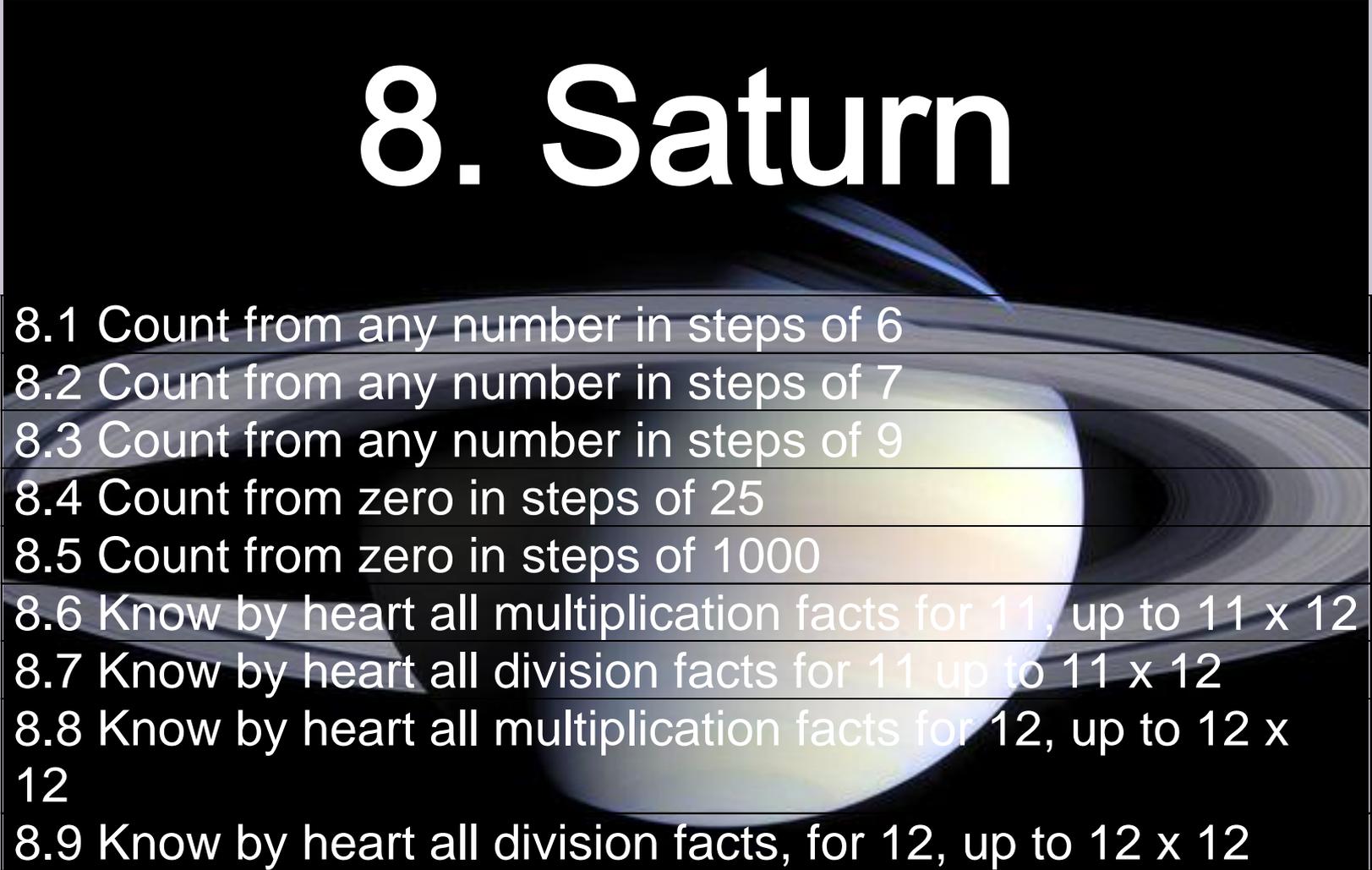
8.1 Count from any number in steps of 6

8.2 Count from any number in steps of 7

8.3 Count from any number in steps of 9

8.4 Count from zero in steps of 25

8.5 Count from zero in steps of 1000

8.6 Know by heart all multiplication facts for 11, up to 11 x 12

8.7 Know by heart all division facts for 11 up to 11 x 12

8.8 Know by heart all multiplication facts for 12, up to 12 x 12

8.9 Know by heart all division facts, for 12, up to 12 x 12

# 9. Uranus

9.1 Use knowledge of time facts to write equivalent times to multiples of 1/4 of a unit e.g. 2.5 hours = 2 hours 30 mins, 180 seconds = 3 minutes, 5 ¼ hours = 5 hours 15 mins

9.2 Use knowledge of mass and weight facts to write equivalent measures e.g. 3.75kg = 3750g, 5678g = 5.678kg

9.3 Use knowledge of volume and capacity facts to write equivalent measures e.g. 7.45l = 7450ml, 3278ml = 3.278l

9.4 Use knowledge of length facts to write equivalent measures e.g. 5.2km = 5200m, 22mm = 2.2cm

9.5 Count up and down in tenths from any given number

9.6 Know by heart 1 tenth more of any given number

9.7 Know by heart 1 tenth less than any given number

# 10. Neptune

10.1 Add and subtract 2 fractions with the same denominator within one whole

10.2 Add and subtract 2 fractions with the same denominator

10.3 Starting at any given number count forwards and backwards in steps of any number, including through zero to include negative numbers

10.4 Double any number with up to 1 decimal place

10.5 Halve any number with up to 1 decimal place

10.6 Recall quickly multiplication facts up to 12 x 12 and use them to multiply pairs of multiples of 10 and 100, for example 30 x 70, 40 x 200

10.7 Recall quickly division facts of all tables up to 12 x 12 and use them to divide pairs of multiples of 10 and 100, for example 240 ÷ 40 = 60

# 11. The Milky Way

11.1 Identify pairs of factors for all 2 digit whole numbers

11.2 Know by heart all the squares of numbers up to 12 x 12

11.3 Know by heart all the cubes numbers up to $12^3$

11.4 Recognise and recall factors of numbers up to 100 and corresponding multiples of 100

11.5 Use knowledge of place value and x facts to 12 x 12 to derive related multiplication and division facts involving decimals… *0.6 x 8 = 4.8*

11.6 Know by heart tests of divisibility for multiples of 2, 3, 4, 5, 6, 9 and 10

# Starting and progression

- After initial assessment, each child is started on the system at an appropriate stage (children starting in FS/Y1 start at the beginning).

- They have their own record and work through the system at their own pace.

- Children have a range of targets to be working on at any one time.

- Normally, they do **NOT** move onto the next stage until they have completed all of the targets within each stage.

# Definition of instant recall

- For the purposes of this system, instant recall is defined as being able to recall the fact within 3 seconds.

- Therefore, it is reasonably expected to be able to recall 10 facts within 30 seconds, or 20 facts in 1 minute.

# Definition of instant recall (cont.)

- How long is 3 seconds? You have 3 seconds to work out the value of the "?" in the following sum before the answer appears on screen.

68 + ? = 100

# Each child will have

- Their own log book – updated to the stage they are on with dates when they achieved the targets.

- A copy of their target sheet – so they and all adults involved with the child know what they are working on next.

- Learning activities towards the targets, which will be done in school and also as homework.

- The opportunity to be working towards all of the targets from one stage at the same time.

- For some children this may not be appropriate, so their targets for the time period may be reduced to a smaller number.

- A fortnightly opportunity to be challenged against the clock to show what progress they are making against their targets.

# Log Book
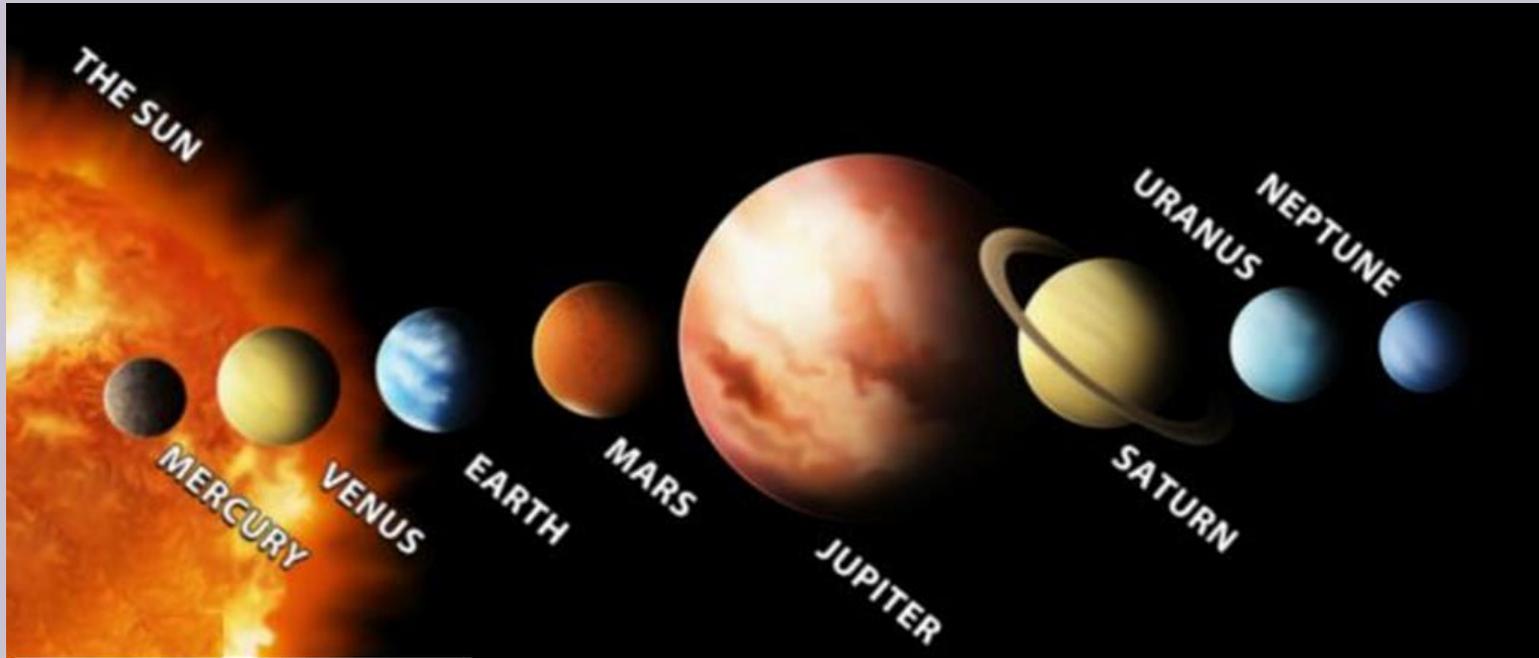


**Instant Recall Mission**

**LOG BOOK**

Name

_____

# Log Book (cont.)

## 2. Launch Pad

| | | | |
|---|---|---|---|
| 2.1 Say the numbers 0-20 accurately | | | |
| 2.2 Read the numbers 1 to 20 in numerals | | | |
| 2.3 Say 1 more than any number between 0-20 | | | |
| 2.4 Say 1 less than any number between 0-20 | | | |
| 2.5 Say 1 more and 1 less than any two digit number | | | |
| 2.6 To count in twos  *2, 4, 6, 8, 10…* | | | |
| 2.7 To count in fives  *5, 10, 15, 20, 25, 30, 35…* | | | |
| 2.8 To count in tens *10, 20, 30, 40, 50, 60, 70…* | | | |

# 5. Earth

| | | | |
|---|---|---|---|
| 5.1 Know by heart all sums and differences of multiples of 10 up to 100 | | | |
| 5.2 Know by heart all number bonds that total 100 | | | |
| 5.3 Know by heart all doubles of multiples of 5 up to 100 so *double 35, double 75* | | | |
| 5.4 Know by heart all doubles of multiples of 10 up to 100 so *double 60,double 30* | | | |
| 5.5 Know by heart all halves of all multiples of 10 up to 100 *so halve 70, halve 40* | | | |
| 5.6 Know by heart all multiplication facts, and division facts, for 3, up to 3 x 12 | | | |
| 5.7 Know by heart all multiplication facts, and division facts, for 6, up to 6 x 12 | | | |
| 5.8 Know by heart all multiplication facts, and division facts, for 4, up to 4 x 12 | | | |

# Log Book (cont.)

Each target has to be achieved 3 times to demonstrate learning has been fully consolidated.

It is recommended each occasion is 2 weeks apart.

# Challenge sheets

| | Target 5.1 | |
|---|---|---|
| | 20, 40 | |
| | 60, 30 | |
| | 10, 90 | |
| | 70, 20 | |
| | 90, 50 | |
| | 100, 60 | |
| | 30, 20 | |
| | 40, 70 | |
| | 50, 30 | |
| | 80, 10 | |

**5.1**

Know by heart all sums and differences of multiples of 10 up to 100.

# Challenge sheets (cont.)

- 3 challenge sheets have been created for use for each target where appropriate.

- In line with the definition of instant recall for this system children are given 30 seconds to complete these as each has 10 facts.

# Challenge sheets (cont.)

- There are 3 columns on each.

- As time is crucial in the challenge, left handed children may find it quicker to use the left hand answer column so they are not covering the 'question' when they write.

- Children are not expected to complete both columns!

# Challenge sheets (cont.)

- All of the first two stages are done with an adult.

- Therefore use of the system may well look different for children in FS/Y1 where most children will be working on these targets.

- The emphasis of the system is instant recall, so when adults have seen it as such, these targets are marked as achieved.

# Certificates

When the children have completed all of the targets at each stage (3 times) they will be awarded a certificate.

# Certificate – Level 1

## Congratulations! You are now a qualified astronaut.

*You have passed the astronaut selection programme.  You are now ready to proceed to the launch pad.*

This certificate is awarded to

in recognition of you passing the Astronaut Selection program.

Signature

Date

# Certificate – Level 11

**Congratulations!**
**You have achieved all**
**of the space mission!**