

# Success @ Arithmetic



**Annual Report**

**Sample School**

## INTRODUCTION

Success@Arithmetic is an Every Child Counts numeracy intervention for pupils in Key Stages 2 and 3 who need support to become fluent at arithmetic. It helps them to make accelerated progress and to catch up with their peers, becoming confident at calculation. There are two versions:

- Success@Arithmetic: Number Sense is for pupils who need support to understand the number system and develop fluency with number facts, most often in Key Stage 2;
- Success@Arithmetic: Calculation is for pupils who need support to understand and develop fluency with formal written methods, most often in upper Key Stage 2 and in Key Stage 3.

It is normally delivered to a small group of pupils by a Lead Teacher and a teaching assistant who have been trained together. The Lead Teacher makes a detailed assessment of each pupil's needs and then selects a series of appropriate 'Success@Arithmetic steps' to build a pathway of understanding, knowledge and skills that leads to confident calculation. A teaching assistant or the Lead Teacher then implements the steps with a small group of up to 3 pupils. They help the pupils to think and talk about their calculation methods and strategies, using and adapting the intervention's detailed session notes so that each pupil is challenged and can succeed.



Every lesson has four parts:

- Skills Practice - to reinforce a range of previously learned skills
- Teaching to Mastery - developing a secure grasp of essential calculation skills
- Mathematics in Context - applying learning to real-life situations & problems
- Self-Assessment - the pupils reflect on and talk about their own learning

Success@Arithmetic was devised by Edge Hill University as a part of its not-for-profit Every Child Counts programme, through which the University has supported schools to raise over 100,000 children's achievement in mathematics and literacy. All Success@Arithmetic teachers and teaching assistants are trained and supported by local ECC Trainers, who in turn are trained and supported by Edge Hill University National Advisers.

This report is based on data submitted to the University's online data collection and analysis system. Its purpose is to help the school to monitor pupils' progress and to evaluate the effectiveness of the intervention. The level of detail in the tables depends on the data supplied and the time of year. If you have any queries, please contact the ECC team.

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## 1. PARTICIPATION IN THE PROGRAMME

Success@Arithmetic is designed for pupils in Key Stages 2 and 3 who have difficulties with arithmetic.

**Table 1.1 Pupils receiving Success@Arithmetic support  
Sample School**

	SAA Calculation	SAA Number Sense	All Pupils
<b>Entry</b>			
Pupils who began a programme	6	3	9
<i>School Year</i>			
Y5	6		6
Y4		3	3
<b>Exit</b>			
Pupils who completed a programme	6	3	9

Entered: all pupils who began a programme

Completed: all pupils who completed a programme and for whom entry and exit outcomes were reported

## 2. LESSONS

Pupils normally have about 3 lessons a week for at least 8 weeks, in groups of up to 3. The length of the programme depends on the objectives set by the teacher and on the pupils' rate of progress. Some pupils may receive additional lessons to help them to reinforce their learning.

**Table 2.1 Length of programme and lessons received  
Sample School**

<b>Success@Arithmetic: Calculation</b>	
<i>Number of pupils</i>	6
Average calendar weeks	11.7
Average calendar months	2.7
Average number of lessons	22.3
- delivered by a teacher	9.2
- delivered by a teaching assistant	13.2
Average group size	3.0
<b>Success@Arithmetic: Number Sense</b>	
<i>Number of pupils</i>	3
Average calendar weeks	20.4
Average calendar months	4.7
Average number of lessons	49.0
- delivered by a teacher	4.0
- delivered by a teaching assistant	45.0
Average group size	2.0
<b>Sample School - all pupils</b>	
<i>Number of pupils</i>	9
Average calendar weeks	14.6
Average calendar months	3.3
Average number of lessons	31.2
- delivered by a teacher	7.4
- delivered by a teaching assistant	23.8
Average group size	2.7

pupils who completed a programme and for whom the programme length or number of lessons was reported

### 3. ATTITUDES TO MATHEMATICS

When pupils have completed the programme, their class teachers can assess the attitudes that they show in class towards mathematics. The teachers use an Every Child Counts Attitude Survey to report on 8 aspects of each pupil's attitude, such as taking an active part in lessons, concentration and willingness to 'have a go' without asking for help. For each aspect, they decide whether the pupil is now more positive, about the same, or less positive than before taking part in Success@Arithmetic.

**Table 3.1 Changes in pupils' attitudes towards mathematics  
(number of pupils)  
Sample School**

	<b>Pupils</b>
<i>Number of pupils</i>	9
Pupils who were more positive after the programme	9
Pupils whose attitudes did not change	0
Pupils who were less positive after the programme	0
Net gain	9

pupils who completed a programme and for whom an Attitude Survey was reported

**Table 3.2 Changes in pupils' attitudes towards mathematics  
(number of aspects)  
Sample School**

	<b>Aspects</b>
Average number of aspects in which pupils became more positive	3.7
Average number of aspects in which pupils' attitudes did not change	4.3
Average number of aspects in which pupils became less positive	0.0
Net gain	3.7

pupils who completed a programme and for whom an Attitude Survey was reported

## 4. TEST OUTCOMES

Schools are encouraged to test pupils' mathematics when they enter and exit from the programme. Entry testing helps to identify their initial attainment and learning needs and exit testing provides an objective measure of the progress that they have made.

TABLE 4.1 shows outcomes calculated by the school or approximate outcomes calculated by Edge Hill University based on raw data reported by the school.

Age	<i>A pupil's chronological age at the time of their entry and exit tests.</i>
Number Age	<i>A Number Age is the average age of pupils across the country who achieved the same test score as the pupil.</i>
Standard Score	<i>A Standard Score compare's a pupil's test score with those of other pupils of the same age across the country. A Standard Score close to 100 is 'average' and 84% of all pupils have a Standard Score of at least 85.</i>

**Table 4.1 Test outcomes  
Sample School**

	<i>Number of Pupils</i>	<b>Entry Average</b>	<b>Exit Average</b>	<b>Gain Average</b>
<b>Success@Arithmetic: Calculation</b>				
Age (months)	6	116.0	118.7	2.7
Number Age (months)	6	101.8	116.3	14.5
Standard Score	6	89.7	98.5	8.8
<b>Success@Arithmetic: Number Sense</b>				
Age (months)	3	110.7	115.3	4.7
Number Age (months)	3	99.3	116.0	16.7
Standard Score	3	82.7	100.7	18.0
<b>Sample School - all pupils</b>				
Age (months)	9	114.2	117.6	3.3
Number Age (months)	9	101.0	116.2	15.2
Standard Score	9	87.3	99.2	11.9

pupils who completed a programme and for whom entry and exit scores were reported

## 5. PUPIL CHARACTERISTICS

TABLE 5.1 analyses pupils' participation and outcomes in relation to their background characteristics. It is designed to help the school to monitor the progress of relevant vulnerable groups.

**Table 5.1 Pupils' background characteristics and key data  
Sample School**

	----- Pupils -----		--- Programme ---		----- Progress -----			
	NUMBER	AGE	LENGTH	LESSONS	NUMBER	AGE	GAIN	ATTITUDE
		<i>months</i>	<i>months</i>		Entry	Exit		Improved
						<i>months</i>		<i>proportion</i>
<b>All pupils</b>	<b>9</b>	114.2	3.3	31.2	101.0	116.2	15.2	9 / 9
<b>School Year</b>								
Y5	6	116.0	2.7	22.3	101.8	116.3	14.5	6 / 6
Y4	3	110.7	4.7	49.0	99.3	116.0	16.7	3 / 3
<b>Gender</b>								
Boy	6	112.5	3.6	35.3	103.8	120.3	16.5	6 / 6
Girl	3	117.7	2.9	23.0	95.3	108.0	12.7	3 / 3
<b>Pupil Premium Entitlement</b>								
Yes	4	114.8	3.0	27.3	101.3	114.0	12.8	4 / 4
No	5	113.8	3.6	34.4	100.8	118.0	17.2	5 / 5
<b>Special Educational Need Status</b>								
Yes	2	114.5	2.3	21.5	104.0	118.5	14.5	2 / 2
No	7	114.1	3.6	34.0	100.1	115.6	15.4	7 / 7
<b>First Language</b>								
English	7	114.6	3.2	30.1	102.3	117.4	15.1	7 / 7
Other	2	113.0	3.9	35.0	96.5	112.0	15.5	2 / 2
<b>Season of Birth</b>								
Autumn	4	114.8	3.9	35.8	95.3	107.3	12.0	4 / 4
Spring	4	114.3	3.1	29.8	105.3	124.8	19.5	4 / 4
Summer	1	112.0	2.1	19.0	107.0	118.0	11.0	1 / 1

pupils who completed a programme and for whom relevant data was reported

## 6. SCHOOL SUMMARY

TABLE 6.1 summarises key data for the school and the national outcomes for all schools that have reported relevant outcomes data.

The national outcomes are presented as benchmark figures to inform evaluation:

- the First Quartile figures show the outcomes ranked 25 out of 100
- the Mean figures show the average outcomes for all schools
- the Third Quartile figures show the outcomes ranked 75 out of 100.

Benchmarks are indicative only and should be interpreted in accordance with the school's circumstances.

**Table 6.1 School summary and national benchmarks**  
**Sample School**

	----- Pupils -----		--- Programme ---		----- Progress -----			
	NUMBER	AGE	LENGTH	LESSONS	NUMBER	AGE	GAIN	ATTITUDE
		<i>months</i>	<i>months</i>		Entry	Exit		Improved
						<i>months</i>		<i>proportion</i>
Success@Arithmetic: Calculation	6	116.0	2.7	22.3	101.8	116.3	14.5	6 / 6
Success@Arithmetic: Number Sense	3	110.7	4.7	49.0	99.3	116.0	16.7	3 / 3
Sample School - all pupils	9	114.2	3.3	31.2	101.0	116.2	15.2	9 / 9
<b>Benchmarks for all schools</b>								
first quartile	10	126.5	4.9	29.8	112.0	125.0	18.7	100%
<b>mean</b>	<b>7.0</b>	<b>120.8</b>	<b>4.1</b>	<b>26.8</b>	<b>104.9</b>	<b>119.5</b>	<b>14.7</b>	<b>90%</b>
third quartile	2	115.0	2.8	24.0	99.0	112.8	8.2	85%



## 7. PUPIL SUMMARY

TABLE 7.1 summarises key data for each pupil who completed a programme during the reporting period.

**Table 7.1 Pupil Summary  
Sample School**

PUPIL	SCHOOL YEAR	AGE	---- Programme ---			----- Exit Outcomes -----						
			DATES	PROG LENGTH	LESSONS	ATTITUDE	NUMBER AGE			STANDARD SCORE		
			Entry Exit	months	months	Gain aspects	Entry months	Exit	Gain	Entry	Exit	Gain
<b>Intervention: Success@Arithmetic: Calculation</b>												
<b>Teacher: [ A ]</b>												
Pupil: [ A ]	Y5	112	08 Sep 10 Dec	3.0	26	2	109	129	20	98	111	13
Pupil: [ B ]	Y5	119	08 Sep 10 Dec	3.0	24	1	94	105	11	82	88	6
Pupil: [ C ]	Y5	117	08 Sep 15 Dec	3.2	21	2	91	100	9	81	86	5
Pupil: [ D ]	Y5	112	05 Jan 10 Mar	2.1	19	7	107	118	11	96	103	7
Pupil: [ E ]	Y5	119	05 Jan 10 Mar	2.1	20	6	109	127	18	93	104	11
Pupil: [ F ]	Y5	117	05 Jan 22 Mar	2.5	24	2	101	119	18	88	99	11
<b>Intervention: Success@Arithmetic: Number Sense</b>												
<b>Teacher: [ B ]</b>												
Pupil: [ G ]	Y4	112	22 Feb 14 Jul	4.7	49	4	98	113	15	76	98	22
Pupil: [ H ]	Y4	111	22 Feb 14 Jul	4.7	49	4	98	111	13	81	96	15
Pupil: [ I ]	Y4	109	22 Feb 13 Jul	4.7	49	5	102	124	22	91	108	17

pupils who completed a programme