

# Success @Arithmetic



## Annual Report

September 2018 to July 2019

**all schools**

based on data recorded by 27/09/2019



Edge Hill  
University

## 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 over 6,000 schools to raise more than 140,000 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 by schools to the University's online data collection and analysis system. Its purpose is to inform evaluations of 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  
all schools**

	SAA Number Sense	SAA Calculation	all	Percentage of Entrants
<b>Entry</b>				
Pupils who began a programme	11	129	140	
<i>School Year</i>				
Y6		7	7	5%
Y5	1	55	56	40%
Y4		34	34	24%
Y3	2	17	19	14%
Y2	6	1	7	5%
<i>other or not recorded</i>		3	3	2%
<b>Exit</b>				
Pupils who completed a programme	9	97	106	
Pupils who had not completed a programme	2	32	34	

Entered: all pupils who began a programme

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

**Table 1.2 Schools providing Success@Arithmetic support  
all schools**

	SAA Number Sense	SAA Calculation	either
Schools	4	21	17
Staff	4	17	21
Local Authorities	4	15	15

all schools that recorded entry data for at least one pupil

## 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  
all schools**

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### Success@Arithmetic: Number Sense

<i>Number of pupils</i>	7
Average calendar weeks	23.3
Average calendar months	5.4
Average number of lessons	27.3
- delivered by a teacher	3.3
- delivered by a teaching assistant	24.0
Average group size	5.0

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### Success@Arithmetic: Calculation

<i>Number of pupils</i>	94
Average calendar weeks	18.5
Average calendar months	4.2
Average number of lessons	29.3
- delivered by a teacher	5.8
- delivered by a teaching assistant	25.6
Average group size	3.4

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### all pupils

<i>Number of pupils</i>	101
Average calendar weeks	18.9
Average calendar months	4.3
Average number of lessons	29.2
- delivered by a teacher	5.6
- delivered by a teaching assistant	25.5
Average group size	3.5

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

### 3. 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 3.1 shows outcomes calculated by schools or approximate outcomes calculated by Edge Hill University based on raw data reported by schools.

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 compares 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 3.1 Test outcomes  
all schools**

	<i>Number of Pupils</i>	<b>Entry Average</b>	<b>Exit Average</b>	<b>Gain Average</b>
<b>Success@Arithmetic: Number Sense</b>				
Age (months)	9	86.9	91.9	5.0
Number Age (months)	9	81.8	97.9	16.1
Standard Score	7	92.1	104.6	12.4
<b>Success@Arithmetic: Calculation</b>				
Age (months)	97	109.5	113.9	4.4
Number Age (months)	97	96.1	109.6	13.6
Standard Score	85	89.4	97.7	8.3
<b>all pupils</b>				
Age (months)	106	107.8	112.2	4.4
Number Age (months)	106	94.9	108.7	13.8
Standard Score	92	89.6	98.2	8.6

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

## 4. 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 4.1 Changes in pupils' attitudes towards mathematics  
(number of pupils)  
all schools**

	Pupils	Percent
<i>Number of pupils</i>	28	
Pupils who were more positive after the programme	25	89%
Pupils whose attitudes did not change	3	11%
Pupils who were less positive after the programme	0	0%
Net gain	25	89%

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

**Table 4.2 Changes in pupils' attitudes towards mathematics  
(number of aspects)  
all schools**

	Aspects
Average number of aspects in which pupils became more positive	4.8
Average number of aspects in which pupils' attitudes did not change	3.0
Average number of aspects in which pupils became less positive	0.2
Net gain	4.6

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

## 5. PUPIL CHARACTERISTICS

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

**Table 5.1 Pupils' background characteristics and key data all schools**

	----- Pupils -----		--- Programme ---		----- Progress -----				
	NUMBER	AGE	LENGTH	LESSONS	NUMBER AGE		ATTITUDE		
	%	months	months		Entry	Exit	Gain	Improved	
						months		proportion	
<b>All pupils</b>	<b>106</b>		107.8	4.3	29.2	94.9	108.7	13.8	89%
<b>School Year</b>									
Y6	7	8%	126.1	3.2	30.6	94.0	114.7	20.7	-
Y5	49	53%	113.9	4.8	29.4	102.1	116.0	13.9	100%
Y4	17	18%	104.4	3.6	33.3	98.1	105.2	7.1	2 / 5
Y3	12	13%	92.8	4.5	27.0	87.6	105.0	17.4	4 / 4
Y2	7	8%	80.3	5.4	21.7	74.7	89.6	14.9	7 / 7
<b>Gender</b>									
Boy	40	43%	107.4	4.5	31.5	95.8	110.0	14.3	92%
Girl	52	57%	108.1	4.5	27.7	97.5	110.8	13.3	87%
<b>Pupil Premium Entitlement</b>									
Yes	31	36%	106.7	4.9	28.9	95.5	106.5	10.9	77%
No	56	64%	109.1	4.1	29.5	97.9	112.6	14.8	100%
<b>Special Educational Need Status</b>									
Yes	17	20%	110.6	4.0	31.8	95.1	107.6	12.5	3 / 3
No	68	80%	107.4	4.5	28.5	97.6	111.1	13.5	88%
<b>First Language</b>									
English	73	83%	109.7	4.5	30.1	98.6	112.0	13.4	85%
Other	15	17%	97.7	4.4	26.1	88.7	103.3	14.5	8 / 8
<b>Season of Birth</b>									
Autumn	14	15%	116.0	4.0	29.5	96.4	109.0	12.6	1 / 2
Spring	33	36%	110.4	4.7	27.6	100.3	113.8	13.5	8 / 8
Summer	45	49%	103.3	4.4	30.6	94.2	108.4	14.2	89%

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