

# Numberella Data Trial

Boston Witham Academy

January – March 2018



**Boston Witham Academies Federation Trust**

Haven High Academy

Marian Road

Boston

Lincolnshire

PE21 9HB

U.K.

‘Data wise 100% improved their maths level / grade from January when they started, to our Term 4 data collection. Some have improved significantly.’

Kimberley Albelda, Deputy Head Teacher, Haven High Academy

Students Improving Grade: 100%

Maximum Improvement: 20% (3 grades out of 15)

Mean Improvement: 12% (1.8 Grades out of 15)



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## Trial Summary

Between January and March of 2018, six 11-12 year old children working (broadly speaking)<sup>1</sup> at the level of 9 year olds were withdrawn twice a week from their class in order to play Numberella. Pursuant to the policy of the school, these children were assessed before and after the intervention. At the end of the intervention, it was found that 100% of the children had improved their level, some by as much as 1 whole level.

### Explanation Of The BWAf Levels System

BWAF operate a 15 step grading system, where 1- is the lowest and 5+ is the highest. This system operates across two year groups (years 7 and 8). Level 1- is the equivalent of the expected level of a 9 year old, i.e. 2 academic years behind the standard expected.

### Responsible For The Trial

Kimberly Albelda is the Deputy Head of Haven High Academy and was responsible for overseeing the trial. The administration of the game and associated teaching was undertaken by a teacher's assistant (TA) at the school.

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<sup>1</sup> See Supporting Documents p.2



# Data Report

The BWAf grading system has 15 levels.

BWAf Grading Levels (over 2 academic years, lowest to highest)	Working level (years old)	Level as fraction of whole (x /15)
1-	9	1/15
1=		2/15
1+		3/15
2-		4/15
2=		5/15
2+		6/15
3-		7/15
3=		8/15
3+		9/15
4-		10/15
4=		11/15
4+		12/15
5-		13/15
5=		14/15
5+	12	15/15

Student	Level Jan	Level March	Levels Improved	Improvement % (Number of levels improved / starting level)
RL	1-	2-	+3	20
BH	2-	2+	+2	13
KB	1=	2-	+2	13
RT	2=	2+	+1	7
TN	1+	2=	+2	13
BN	1=	1+	+1	7



## Conclusion

The facts speak for themselves – 100% of students improved their grade after playing Numberella twice a week for 3 months. The anecdotal evidence from the TA – that there was a ‘positive impact in their usual lessons’ should not be taken lightly.

Numberella is designed to improve take up of mathematical information due to enhanced numerical fluency. This would appear to be happening.

The stand out individual result from the trial was that the student with the lowest starting grade made the greatest improvement, and by the end of the trial was no longer at the bottom of the group. The potential of Numberella to reach students at the bottom of the attainment scale is thus demonstrated, as is the fact that in a Numberella environment, no student is out of reach.

It’s also clear that the rules are not too complicated for children to understand. The lowest achieving students in this school ‘caught onto it all quickly’ – despite the fact that the rules ‘appeared a little complicated at first.’

The BWAFF trial was a resounding success. All elements of the game – accessibility and educational relevance – have been clearly demonstrated.





Alexander Newberry <[alex@numberella.club](#)>

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trial

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Kimberley.Albelda <[k.albelda@numberella.club](#)>

Mon, Apr 16, 2018 at 3:42 PM

To: Alexander Newberry <[alex@numberella.club](#)>

Hello

I have looked at the students who have had regular withdrawal input using Numberella. The feedback from them is positive and all say they have enjoyed using the game in these maths sessions. The TA who has used the game said, although the rules appeared a little complicated at first, she soon got into the swing of it and actually the kids caught onto it all quickly anyway.

Data wise 100% improved their maths level/grade from January when they started to our Term 4 data collection. Some have improved significantly. Their maths teacher has also said she can see an improved confidence with core skills which is having a positive impact in their usual lessons.

I haven't got data from the primary schools unfortunately, but I am going to work with some staff over there for you.

Kimberley

**From:** Alexander Newberry [mailto:[alex@numberella.club](mailto:alex@numberella.club)]

**Sent:** 16 April 2018 13:25

[Quoted text hidden]

[Quoted text hidden]



Alexander Newberry <--

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**trial**

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**Kimberley.Albelda** <kimberley.albelda@nsw.edu.au>  
To: Alexander Newberry <alex@nsw.edu.au>

Tue, Apr 17, 2018 at 5:22 PM

Withdrawal is when the teacher targets a group of students who are working either below target, or in this case below the level expected of their age. Our Maths TA took the small group for numberella twice a week. All students are aged 11-12 and are working at the level of a 9 year old in simplistic terms.

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**From:** Alexander Newberry [mailto:[alex@nsw.edu.au](mailto:alex@nsw.edu.au)]  
**Sent:** 17 April 2018 17:20

[Quoted text hidden]

[Quoted text hidden]



Alexander Newberry <alex@n

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**trial**

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**Kimberley.Albelda**

Fri, May 4, 2018 at 11:38 AM

To: alex@n

Sorry, I have been off site this week at a year 11 revision conference, just got back.

Here is the data for you

Name	Term 1	Term 4
RL	1-	2-
BH	2-	2+
KB	1=	2-
RT	2=	2+
TN	1+	2=
BN	1=	1+

-----Original Message-----

From: Kimberley.Albelda

Sent: 04 May 2018 11:30

To: Kimberley.Albelda <

Subject: FW: trial

-----Original Message-----

From: Alexander Newberry [mailto:alex@n

Sent: 03 May 2018 10:17

To: Kimberley.Albelda <

Subject: Re: trial

Hi Kimberley,

Hope you've had a good week. I was just wondering if you'd had chance to get the levels/data info you mentioned, I'm looking forward to trying to get my head around them!

best regards,

Alexander F.L Newberry  
Designer - Numberella

Learn more about Numberella <<https://youtu.be/jAkbS0MhKW0>> See kids playing Numberella <<https://youtu.be/3j8gn9qjXwQ>> Visit Numberella.Club <<http://numberella.club>>

On Wed, Apr 25, 2018 at 8:27 AM, Kimberley Albelda <

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We did get the level 3 boxes thanks.





Alexander Newberry <alex@n

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**trial**

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**Kimberley.Albelda** <kin  
To: Alexander Newberry <

Fri, May 4, 2018 at 12:39 PM

We have an internal levels system from 1- lowest to 5+ highest for years 7&8.

5+

5=

5-

4+

4=

4-

3+

3=

3-

2+

2=

2-

1+

1=

1-

The students below (whose names I have removed but included their initials instead) have all improved, some by a whole level some by sub-levels.

e.g. RL has moved from 1-, through 1= 1+ to finish on 2- whereas RT has only moved from 2= to 2+

