

EEF Promising Project

App-based maths learning (onebillion)

Implementation Manual



Aiming to raise attainment in maths
with self-paced apps



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UK | CHINA | MALAYSIA

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Purpose

This intervention is a promising way to raise standards in maths for children in Primary School.

By now, teachers should have identified children who would benefit from extra maths input to take part in this intervention.

This manual and accompanying website is to support schools to implement this intervention effectively. We suggest you implement the intervention for:

- 30 minutes per day
- 4 days a week
- over a 12-week period (excluding holidays)

However, you may decide to vary this to support your individual needs.

We also recommend that a Senior Leader at your school observes this intervention at least once during the 12-week period. This is to ensure delivery of this programme is as intended through the training. A Senior Leader Checklist for this observation is available to download from the training website.

The University of Nottingham and the Apple Regional Training Centre Nottingham (at Burton Joyce Primary School) is supporting schools to implement this EEF Promising Project.

Evidence of Success

This programme has been evaluated by the EEF and has been highlighted as Promising Project.

For further information about the EEF efficacy trial see:

<https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/onebillion-app-based-maths-learning/>

Implementation Support

We have developed some online resources to assist you with delivering the intervention.

Training website Online training including training videos, implementation manual, session logs, and Senior Leader Checklist can be found on the training website to download.

The training website can be accessed here:

<https://www.burtonjoyce.notts.sch.uk/page/?title=onebillion&pid=102>

Training videos For each section of this manual there is a short training video for you to watch. You can access these on the training website.

How to Implement Getting Started with the iPad



To switch on the iPad

- i. Press and hold the Sleep/Wake button until an Apple Logo appears on the screen.
- ii. After a moment, the iPad should fully start up and show the main screen

To switch off the iPad

- i. Press and hold the Sleep/Wake button for a few seconds upon which the screen will show the message "Slide to power off".
- ii. Slide to the right and release to shut down. Alternatively, you can press and hold both the Sleep/Wake button and Home Button together until the iPad switches off.



To connect the headphones to the iPad

Insert the headphone plug into the headphone jack located on the top edge of the device. Make sure the plug is completely inserted into the port, or else the iPad will continue playing the sound through the internal speakers.



To set the volume you can either press and hold the volume buttons or tap them slightly. Use the up button to increase the volume level and the down button to decrease the volume.

Or on the touchscreen of the iPad, a volume symbol will show with a bar indicating the volume level.

For further support with setting up your iPad, visit www.apple.com/uk/support.

How to Implement

Getting Started with the Apps



There are two maths apps that you will use in this trial:

- Maths 3 to 5, for schools
- Maths 4 to 6, for schools

These apps have been developed by the UK non-profit onebillion©. To find out more about onebillion visit www.onebillion.org.

Both apps should be installed on all of the iPads that have been assigned to the intervention in your school. You can add multiple children to each app on an iPad. Children need to use the app and iPad assigned to them each time they take part in this intervention. It is a good idea to label the iPads so that children can identify which iPad is theirs to use. They will select their name on screen to access the learning materials each day. When they first log in to their profile on the app, the virtual teacher greets them and takes them to the module they were last working on.



Maths 3 – 5 has 10 topics	Maths 4 – 6 has 18 topics
Sorting and Matching Counting to 3 Lines and patterns Counting 4 to 6 Where is it? Counting 7 to 10 Patterns and shapes Counting 1 to 10 Comparing Adding and taking away	Shape and position Counting to 20 Sharing More counting Telling the time Add and subtract Count in tens and fives How tall, how long? Count to 100 2D shapes Number lines Fractions Weigh it! More number work 3D shapes Measure time More + and - How much can it hold?

Within each module, there are up to seven activities and a quiz. When children complete an activity within a topic they will be rewarded with a star. Children need to complete all of the activities before they can access the quiz. When they answer all 10 quiz questions correctly, they will be rewarded with a certificate for the topic at the end of a completed quiz. You will need to record when a child receives a certificate in the session log, as described below.

If a child does not pass the quiz, try repeating the quiz with them and repeating the questions to them yourself. If they are still challenged by some quiz questions, the child may need practice the topic further by working through the activities again. This can be independently or with support from the adult running the intervention.

When a child completes a quiz, you will need to record which topic they have passed in the paper session log, as described below.

How to Implement Pedagogical Support

When running this intervention, some children may become challenged and they will need your help. We expect you to support them in their learning. We call your help 'Pedagogical Support' and we have designed 3 levels of pedagogical support to guide you.

Level 1:

If you observe that a child is challenged, we suggest that you remove their headphones and listen to the question together. Give the child an encouraging statement such as 'have another go!' Or 'listen carefully and try again'. Then observe their response.

Top Tip: Sometimes, the activity the child is using selects the correct/incorrect answer because the screen responds to their touch whilst they are counting. In this case, give the child an eraser tipped pencil or non-touch responsive pointer to practice the skills with before they select the answer.

Level 2:

If the child is still challenged on the same activity, you can start Level 2 of Pedagogical Support. At this level, you can repeat the question to them. You may even want to use local mathematical terms that they understand from your school's maths policy. You can also practice and repeat activities within the topic together. You can continue observing how the child progresses.

Level 3:

If the child remains challenged on the activity, you can start Level 3 of Pedagogical Support. This is where we encourage you to use familiar maths resources from the classroom. Remove the headphones and bring in resources that you know will help the child understand the concept. This is the highest level of Pedagogical Support and one that we see used rarely.

Remember, if a child becomes challenged on a new activity or topic, please start from Level 1 of pedagogical support again. Progress through the levels of pedagogical support if the child continues to be challenged on the same activity.

If a child is upset because the activity or topic is too challenging, and these levels of Pedagogical Support are not helping, please skip the activity or topic. The child can come back to it later and the following topics revisit previous teaching too.

These are suggestions of maths resources you may use for each topic:

Math 3-5		Maths 4-6	
Sorting and Matching	Pattern cards and templates Shape and colour Flashcards Coloured objects	Shape and position	Shape flashcards Plastic shapes Positional Language games
Counting to 3	Flash cards to 3 Numberlines Objects to count	Counting to 20	Numberlines to 20 Objects to count Resources to count 2s
Lines and patterns	Lines to trace Shape and colour flashcards Coloured objects	Sharing	Sorting circles Plastic food to share
Counting 4 to 6	Flashcards to 6 Numberlines Number flash cards Objects to count	More counting	Numberlines to 20 Objects to count Resources to count in 2s
Where is it?	Dolls house furniture and figures to place Positional language games Play 'Find the Teddy'	Telling the time	Plastic or paper clocks Time resources
Counting 7 to 10	Flashcards to 10 Numberlines Objects to count	Add and subtract	Objects to count number line Number shapes
Patterns and shapes	Repeated pattern cards Plastic shapes Flash cards for shapes or patterns	Count in tens and fives	Objects to count in 5s and 10s Number shapes
Counting 1 to 10	Numberlines Numberflash cards to 10 Number shapes Objects to count	How tall, how long?	Rulers Vocabulary flash cards
Comparing	Quantities of objects to count Vocabulary flashcards	Count to 100	100 Square Flash cards
Adding and taking away	Objects to count Numberlines	2D shapes	Plastic Shapes Flash cards
		Number lines	Number lines
		Fractions	Objects to count Fraction flashcards
		Weigh it!	Scales Vocabulary flashcards
		More number work	Counting resources Number flashcards
		3D shapes	Plastic 3D shapes Real 3D objects Vocabulary flashcards
		Measure time	Stop watches Time Counting games Races
		More + and -	Counting resources Number flashcards
		How much can it hold?	Capacity resources Vocabulary flashcards

How to Implement

Top Tips for Using the onebillion Apps

Listed below are some top tips for implementing this intervention into your daily classroom routine.

Where does onebillion best fit in a timetable?

onebillion best fits in the timetable outside of the usual maths teaching time. The intervention works best in the morning or afternoon, at the start or end of a session.

How long do you need for each session?

Children need 30 minutes using the app each session.

What do children need to do before the session?

There are 4 things children need to do:

1. Get their headphones.
2. Find their iPad at a table.
3. Select their name in the app.
4. Find their starting point in the app.

What do children need to do during the session?

There are 3 things children need to do:

1. Wear their headphones and check the volume.
2. Listen to the instructions from the virtual teacher in the app.
3. Work through the activities at their own pace.

What do children need to do after the session?

There are 2 things children need to do:

1. Press the back button until they return to the names screen.
2. Put their headphones away.

What does the adult need to do before the session?

There are 2 things the adult needs to do:

1. Make sure the iPads are fully charged.
2. Lay them on the tables with the app open for the children to use.

What does the adult need to do during the session?

There are 3 things the adult needs to do:

1. Give technical support to children, which might mean adjusting the volume or navigating the app.
2. Give pedagogical support: see video 4.
3. Complete the session log.

What does the adult need to do after the session?

There are 2 things the adult needs to do:

1. Put the iPads away.
2. Complete the session log to show which children were present, the support that they were given, and any certificates they received.

What to do when a child isn't passing a quiz?

If a child finds a particular activity difficult the adult can take the headphones off and listen to the instructions together. Let the child touch the screen to answer the question themselves.

What to do when having a problem with the equipment (iPad or Headphones)?

If children are having difficulty using the equipment the most important thing to do is keep calm. These things happen. Problems usually occur with sound. Wear the headphones to check that the sound is playing in the app. You may need to unplug the cables and insert them again to check for a secure connection. The headphones may have stopped working and you may need to swap them. You may also need to restart the app.

If problems continue with the sound, children can use the app without headphones for that session.

What to do when one child is helping another to get through activities?

If children are talking about they are doing in their learning, that's fine. The adult should only intervene when they observe children answering questions on another child's screen.

Remember to:

Charge the iPads at the end of each session so they are fully charged for the next day.

Have spare headphones available in case some children need a new set.

How to Implement

Monitoring Pupil Progress on Paper

Session logs.

At the end of each session there is a log to complete on pupil progress. This is to help you monitor pupil progress as they work through the apps. You can download the Session Logs needed from this implementation website, where you first log in.

Week 1 Session Log

Monday – Date:							
Name of Adult:							
Time of Session:							
iPad # - Pupil Initials	Present /Absent	Required Technical Assistance	Required Pedagogical Assistance	App Maths 3- 5	App Maths 4-6	Certificates Received	Comments (Please rate the child's confidence in the session H= high, L = low, M = mixed)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

For each child, you need to record the following information:

- Your name and the time of the session.
- If the child was present or absent.
- If you gave the child any technical support or pedagogical support.
- The app(s) the child was working on.
- Any certificates the child achieved in the session by listing the certificate number(s) they gained.
- Any observations on their learning behaviours.

If a child is absent, try to reschedule that child's session for later in the day or week.

How to Implement

Troubleshooting

This intervention is usually straightforward to implement but sometimes the following may arise:

What do I do if the app isn't responding?

Double tap the home button, close the app by swiping up on the thumbnail image of it, and restart the app.

What do I do if a child is absent?

You can reschedule the session for that child later in the day or week.

What happens if a child finds a specific activity too challenging?

If a child has attempted a quiz several times and again with your support, it is okay to move the child to the next topic. They can come back to attempt that quiz at another time.

What to do when a child needs to leave early?

Record this in the session log.

What happens if a child wants to stop in a session?

If a child wants to stop in a session, giving them a few minutes break can be good. Encourage them to return and continue learning with the app. If they really want to leave the session, record it in the session log, and try again in the next session.

When I open the apps, only Level 1 is unlocked. The rest of the topics show padlock symbols. How do I unlock them?

You have installed the wrong version of the apps. You need to purchase the licenses for an install:

Maths 3-5, For Schools

Maths 4-6, For Schools

I have the correct versions of the apps installed but they do not load past the 'onebillion' launch screen. What can I do?

Please ask your IT Support to follow this advice:

For the app to function correctly, it needs to access the internet to check on available languages and download new content if required. The URLs that the app needs to connect for this are as follows:

- <http://download.eurotalk.com>
- <https://eurotalk.com/>
- <https://onebillion.org>
- <https://www.google.com>

The following URLs are also necessary for the app to connect to the iTunes Store for purchases or restoring topics:

- itunes.apple.com
- ax.itunes.apple.com
- albert.apple.com
- gs.apple.com
-

For more information on how to setup a Wifi Firewall while using iOS apps, please follow this [link](#).

Some schools have advised that turning off Wi-Fi whilst using the apps allows them to load due to the way your caching server has been configured.

How to Implement

End of Intervention

At the end of the intervention you will need to record what we call the **stopping point**. The stopping point is the last activity that the child completed in the app. You will need to record this in the session log. At the end of the intervention, if a child is absent, their stopping point will be the last activity or certificate they completed.

This will help you to monitor pupil progress with this EEF Promising Project over the longer term if needed. Your SENCO may be interested in filing these session logs for any future cohort needs.

Task Checklist

	Task	Tips	Why?	Tick
1	Identify, and familiarise yourself with the set of iPads that you will be using for the intervention.	<p>Check where the key is kept for the storage of the iPads.</p> <p>Check that the iPads are charging correctly.</p>	You will need to collect and return the iPads for each session of this intervention.	
2	Label the iPads from 1 upwards so that you, and the children, recognise which iPad to use.		This will help children to get started quickly.	
3	<p>Download these apps:</p> <ul style="list-style-type: none"> • Maths 3-5, for schools • Maths 4-6, for schools <p>You may need to ask your Computing Leader or Technician to download the apps. If so, request that support now.</p>	<p>Maths 3-5, for schools and Maths 4-6, for schools are developed by onebillion.</p> <p>The Wi-Fi settings at your school may block the downloading of apps.</p> <p>Please request support from your Computing Leader or Technician when downloading the apps.</p>		
4	Timetable the use of the iPads.	Meet with your Computing Leader or Technician and the Class Teachers to identify when you will need access to this set of iPads.	<p>You need to know when you will be implementing this intervention in the school day/week.</p> <p>We recommend you run this intervention for 4 out of 5 days each week. Each session should last for 30 minutes.</p>	
5	Arrange a Senior Leader Observation once or twice during the 12-week intervention.	Download the Senior Leader Checklist in advance of the observation.	This is to ensure delivery is as intended by the training.	