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# An evaluation of the Mathematical Reasoning programme

| Submission date | Recruitment status | [_] Prospectively registered |
|---|---|---|
| 08/07/2016 | No longer recruiting | [X] Protocol |
| **Registration date** | **Overall study status** | [_] Statistical analysis plan |
| 12/07/2016 | Completed | [X] Results |
| **Last Edited** | **Condition category** | [_] Individual participant data |
| 19/08/2022 | Other | |

## Plain English summary of protocol

Background and study aims
Many children struggle with numeracy (mathematics), and fall behind their classmates at school. The Mathematical Reasoning programme helps to develop children's understanding of the logical principles underlying mathematics. Developed by Professor Terezinha Nunes and Professor Peter Bryant at the University of Oxford, the programme consists of 10 teaching units, delivered to pupils as part of their normal mathematics lessons, taking up approximately 12 lessons. Teachers receive training and are provided with lesson plans and materials to deliver the programme. Learning is also supported by online games, which can be used by pupils both at school and at home. The aim of this study is to find out whether the Mathematical Reasoning programme can help to improve attainment in mathematics in Year 2 children.

Who can participate?
State-funded primary schools in England, located within the eight Maths Hubs and Year 2 pupils whose parents have not opted for them to not be included in the study.

What does the study involve?
Schools participating in the trial are randomly allocated to one of two groups. Among schools in the first group, Year 2 teachers are trained in the delivery of the Mathematical Reasoning programme, which they then deliver to their pupils in the academic year 2016/17. Schools in the second group are expected to deliver 'business as usual' mathematics teaching for the duration of the study. They are then offered the opportunity to take part in the programme in the following school year (2017/18). At the end of Year 2, pupils attending all schools undertake a mathematics exam to test their mathematics attainment.

What are the possible benefits and risks of participating?
The main potential benefit of participating in the trial is the opportunity to improve pupil's mathematical attainment. The schools who do not take part in the programme during the study period also benefit from being able to run it in the following academic year. A potential risk of participating is that schools who do not receive the programme will have to wait another year to receive it.

Where is the study run from?
The study is run from the University of Oxford in partnership with the National Centre for Excellence in the Teaching of Mathematics. The study takles place in state-funded primary schools in England. The evaluation is being led by the National Institute of Economic and Social Research (NIESR). Administration of assessments is being undertaken by the National Centre for Social Research, working in partnership with NIESR. (UK)

When is the study starting and how long is it expected to run for?
August 2015 to March 2018

Who is funding the study?
Education Endowment Foundation (UK)

Who is the main contact?
Ms Lucy Stokes
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# Contact information

### Type(s)
Scientific

### Contact name
Ms Lucy Stokes

### Contact details
National Institute of Economic and Social Research
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# Additional identifiers

# Study information

### Scientific Title
Among Year 2 pupils, does the Mathematical Reasoning programme (compared to pupils not receiving the programme), improve mathematical attainment?

### Study objectives
The Mathematical Reasoning programme will improve children's mathematical attainment.

### Ethics approval required
Old ethics approval format

### Ethics approval(s)
Departmental Research Ethics Committee of the Department of Education at the University of Oxford, 26/02/2016

### Primary study design
Interventional

### Study design
Multi-centre cluster randomised controlled trial

### Study type(s)
Other

### Health condition(s) or problem(s) studied
Mathematical attainment in Year 2 pupils

### Interventions
Schools are randomly allocated to one of two study arms.

Treatment arm: Year 2 teachers will be trained in the delivery of the Mathematical Reasoning programme through Maths Hubs, working with the National Centre for Excellence in the Teaching of Mathematics (NCETM). Within each participating hub, Work Group leaders will be identified and trained in delivering the intervention. This will include Work Group leaders using the programme materials in the schools in which they work. Work Group leaders will then train teachers within the participating schools that have been randomly allocated to receive the intervention. These teachers will receive one day of training; Work Group leaders will provide further support to the teachers through a school visit during the period in which they are delivering the programme. Teachers in the intervention group will also have access to online resources made available by the Oxford team. Pupils attending these schools will receive the Mathematical Reasoning programme from the start of Year 2. Developed by Professor Terezinha Nunes and Professor Peter Bryant at the University of Oxford, the programme consists of 10 teaching units, delivered to pupils as part of their normal mathematics lessons, taking up approximately 12 lessons.

Control arm: Schools will be expected to deliver "business as usual" mathematics teaching and will be offered the opportunity to take part in the programme in the following school year.

Children in both groups have their mathematical attainment measured at the end of Year 2 (July-July 2017) using the GL Assessment Progress Test in Maths.

### Intervention Type
Behavioural

### Primary outcome(s)
Mathematical attainment is measured through the GL Assessment Progress Test in Maths (Level 7) post-intervention, towards the end of Year 2 (June-July 2017).

### Key secondary outcome(s)
No secondary outcome measures

### Completion date
31/03/2018

## Eligibility

### Key inclusion criteria
School inclusion criteria:
1. All English state primary and infant schools (includes schools with one class per year group as well as schools which have classes with mixed year groups) within selected Maths Hubs
2. Willing to fully comply with the requirements of the trial, including supplying the necessary pupil data

Participant inclusion criteria:
All Year 2 pupils attending participating schools are eligible to participate

### Participant type(s)
Other

### Healthy volunteers allowed
No

### Age group
Child

### Sex
All

### Key exclusion criteria
Schools exclusion criteria:
Independent schools.

Participant exclusion criteria:
Children whose parents have opted them out of participation in the study.

### Date of first enrolment
01/02/2016

### Date of final enrolment
30/04/2016

## Locations

### Countries of recruitment
United Kingdom

England

### Study participating centre
**National Institute of Economic and Social Research**
2 Dean Trench Street
London
United Kingdom
SW1P 3HE

**Study participating centre**
**National Centre for Excellence in the Teaching of Mathematics (NCETM)**
Tribal Education
St Mary's Court
55 St Mary's Road
Sheffield
United Kingdom
S2 4AN

**Study participating centre**
**University of Oxford, Department of Education**
University of Oxford
15 Norham Gardens
Oxford
United Kingdom
OX2 6PY

# Sponsor information

**Organisation**
Education Endowment Foundation

**ROR**
https://ror.org/03bhd6288

# Funder(s)

**Funder type**
Charity

**Funder Name**
Education Endowment Foundation

**Alternative Name(s)**
EducEndowFoundn, The Education Endowment Foundation (EEF), Education Endowment Foundation | London, EEF

**Funding Body Type**
Private sector organisation

### Funding Body Subtype
Trusts, charities, foundations (both public and private)

### Location
United Kingdom

## Results and Publications

### Individual participant data (IPD) sharing plan
Not provided at time of registration

### IPD sharing plan summary
Other

### Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Funder report results | results | | | No | No |
| Participant information sheet | Participant information sheet | 11/11/2025 | 11/11/2025 | No | Yes |
| Protocol file | | | 19/08/2022 | No | No |
| Study website | Study website | 11/11/2025 | 11/11/2025 | No | Yes |