

MATHEMATICAL ASSOCIATION



Supporting mathematics in education



9th September 2022

Joint MA/ATM Primary Group Advice to the Independent Commission on Assessment in Primary Education (ICAPE)

Dear Professor Bradbury and Professor Wyse,

On behalf of the Mathematical Association and Association of Teachers of Mathematics Joint Primary Working Group we would like to respond to your call for views on the current assessment and accountability measures used in primary schools in England.

To coordinate our response, in July, we surveyed our primary group members to gather views on the following four assessments that are directly concerned with primary mathematics:

- Baseline Assessment (Mathematics)
- End of KS1 Statutory Assessment (Mathematics)
- Multiplication Tables Check (MTC)
- End of KS2 Statutory Assessment (Mathematics)

34 members whose backgrounds represented early years and primary practitioners/teachers, early years and primary teacher educators in both initial teacher education and in-service teachers and primary mathematics education researchers, responded to our survey.

Our respondents identified several benefits to the current mathematics assessments:

- Teachers can use the KS1 tests flexibly with their pupils
- KS1 mathematics moderation of tests and TA can contribute to the teacher professional development
- KS1 and KS2 outcomes provide benchmarks for cohorts alongside a national picture
- The teacher assessment framework values the use of manipulatives in KS1
- Test frameworks for KS1 and KS2 are designed from item response theory (IRT) and meet Ofqual's common criteria
- The MTC has raised the profile of times tables, raised teacher aspirations and some pupils enjoy learning them
- KS2 assessments inform teacher aspiration

However, most of the respondents' comments expressed concerns about the value of the assessments. We identified three broad themes in the groups' responses from across all mathematics-related assessments:

1. Concerns about assessment validity and reliability, particularly:
 - I. Developmental appropriateness of constructs being assessed e.g. an emphasis on number and efficient calculation in favour of reasoning despite the name given to Papers 2&3
 - II. 'Pedagogically appropriate' administration – particularly for the baseline assessment

- III. Baseline and KS2 tests are unsuitable/unvalidated instrument for measuring mathematical 'progress' over time.
 - IV. Reinforcement of socio-economic inequalities
2. Concerns about impact on pupils, particularly,
- I. Timing of baseline when pupils should be settling into Reception;
 - II. Early (unhelpful) labelling particularly for socio-economically disadvantaged pupils;
 - III. Pressure on infant schools to 'push down' reception baseline scores so as to artificially inflate 'value added' at end of KS1;
 - IV. Distortion of pupils' perceptions of what mathematics is and what it means to be mathematical;
 - V. The negative impact of the timed element of the MTC.
3. Concerns about impact on teachers' practice, particularly
- I. Test content influencing what is taught – procedures vs understanding because of what is easily assessable;
 - II. Absence of manipulatives in KS1 tests means teachers feel the need to remove them in teaching with negative impact on the quality of children's mathematical understanding;
 - III. Assessment outcomes are not used formatively.

We also asked our members whether they believed there is or is not a place for statutory assessment of primary mathematics and if so, what this could 'look like' as an alternative to the current system. Our respondents were equally split in support of and opposing statutory primary mathematics assessment. Those opposing statutory assessment mentioned the following reasons:

- I. It drives the curriculum and distorts the focus to what can be easily measured.
- II. It promotes a narrow view of mathematics.
- III. It can contribute to wellbeing issues for students and staff.

Those in support suggested the following changes or improvements,

- I. Designed in collaboration with teachers;
- II. Promote a broader view of mathematics (e.g. problem solving, concrete applications) with a combination of assessment types suitable for all;
- III. Value teacher assessment or use low stakes tests to support teacher judgement.
- IV. Fewer assessment points
- V. Optional or national sampling rather than testing every child

From our respondents' views, we propose the following advice to ICAPE:

1. The baseline assessment for mathematics should be withdrawn - teachers/ EYs professionals should be supported and trusted to assess the pupils in their setting
2. KS1 mathematics assessments should be withdrawn as planned
3. The MTC should be withdrawn (this was supported by two-thirds of respondents)
4. Summative KS2 mathematics assessments should **not** be used as an accountability measure for school performance
5. Shift the balance in KS2 mathematics assessments from arithmetic procedures towards reasoning and understanding

We have attempted to draw attention to the key and common messages from our members, however we would be happy to engage with ICAPE in any further conversations to expand on our contribution above.

Yours sincerely,

Alison Borthwick (Chair of the MA and ATM Primary Group)