

Arts participation

Low impact for low cost, based on moderate evidence.



+2

Aspiration interventions

Very low or no impact for moderate cost, based on very limited evidence.



0

Behaviour interventions

Moderate impact for moderate cost, based on extensive evidence.



+3

Block scheduling

Very low or no impact for very low cost, based on limited evidence.



0

Built environment

Very low or no impact for low cost, based on very limited evidence.



0

Collaborative learning

Moderate impact for very low cost, based on extensive evidence.



+5

Digital technology

Moderate impact for moderate cost, based on extensive evidence.



+4

Early years interventions

Moderate impact for very high cost, based on extensive evidence.



+5

Extending school time

Low impact for moderate cost, based on moderate evidence.



+2

Feedback

High impact for very low cost, based on moderate evidence.



+8

Homework (Primary)

Low impact for very low cost, based on limited evidence.



+2

Homework (Secondary)

Moderate impact for very low cost, based on limited evidence.



+5

Individualised instruction

Moderate impact for very low cost, based on moderate evidence.



+3

Learning styles

Low impact for very low cost, based on limited evidence.



+2

Mastery learning

Moderate impact for very low cost, based on moderate evidence.



+5

Mentoring

Very low or no impact for moderate cost, based on extensive evidence.



0

Metacognition and self-regulation

High impact for very low cost, based on extensive evidence.



+7

One to one tuition

Moderate impact for high cost, based on extensive evidence.



+5

Oral language interventions

Moderate impact for very low cost, based on extensive evidence.



+5

Outdoor adventure learning

Moderate impact for moderate cost, based on moderate evidence.



+4

Parental engagement

Moderate impact for moderate cost, based on moderate evidence.



+3

Peer tutoring

Moderate impact for very low cost, based on extensive evidence.



+5

Performance pay

Low impact for low cost, based on limited evidence.



+1

Phonics

Moderate impact for very low cost, based on very extensive evidence.



+4

Reading comprehension strategies

High impact for very low cost, based on extensive evidence.



+6

Reducing class size

Moderate impact for high cost, based on moderate evidence.



+3

Repeating a year

Negative impact for very high cost, based on moderate evidence.



-4

School uniform

Very low or no impact for very low cost, based on very limited evidence.



0

Setting or streaming

Negative impact for very low cost, based on limited evidence.



-1

Small group tuition

Moderate impact for moderate cost, based on limited evidence.



+4

Social and emotional learning

Moderate impact for moderate cost, based on extensive evidence.



+4

Sports participation

Low impact for moderate cost, based on limited evidence.



+2

Summer schools

Low impact for moderate cost, based on extensive evidence.



+2

Teaching assistants

Low impact for high cost, based on limited evidence.



+1

Within-class attainment grouping

Moderate impact for very low cost, based on limited evidence.



+3

Arts participation



+2

Low impact for low cost, based on moderate evidence.

Arts participation is defined as involvement in artistic and creative activities, such as dance, drama, music, painting, or sculpture. It can occur either as part of the curriculum or as extra-curricular activity. Participation may be organised as regular weekly or monthly activities, or more intensive programmes such as summer schools or residential courses. Whilst these activities have educational value in themselves, this Toolkit entry focuses on the benefits of arts participation for core academic attainment.

How effective is it?

Overall, the impact of arts participation on academic learning appears to be positive but low. Improved outcomes have been identified in English, mathematics and science. Benefits have been found in both primary and secondary schools, with greater effects on average for younger learners and, in some cases, for disadvantaged pupils.

Some arts activities have been linked with improvements in specific outcomes. For example, there is some evidence of a positive link between music and spatial awareness and between drama and writing.

Wider benefits such as more positive attitudes to learning and increased well-being have also consistently been reported.

How secure is the evidence?

There are a number of systematic reviews and meta-analyses which have found small benefits for arts participation. The two months' progress figure reflects this pattern of findings. The evidence quality is rated as moderate because although there are five reviews, based on experimental studies, effect sizes vary widely.

A recent systematic review of arts education studies, conducted for the EEF, concluded that there were no individual studies of sufficient quality to establish that the intervention actually caused the reported effect. The summary presented here is based on a number of reviews, which, on average, suggest such interventions have a small positive impact. If the quality of studies included in those reviews is unusually low, then the average months progress reported here may be hard to achieve in practice.

What are the costs?

Costs vary considerably from junior drama groups with small annual subscriptions (about £20) and organised dance groups for young people at about £5 per session, to high quality music tuition at about £35 per hour (more than £1,500 per year for a weekly session). Overall, costs are estimated as low.

Arts participation: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. The research evidence shows a wide range of effects from the programmes studied. What is the link between your chosen arts intervention and the outcomes you want to improve, and how will you tell if it's successful?
2. Improvements in learning appear to be more achievable with younger learners.
3. The evidence supporting the academic impact of learning to play an instrument is particularly promising.
4. Arts-based approaches may offer a route to re-engage older pupils in learning, but this does not always translate into better attainment. How will you use increased engagement to improve teaching and learning for these pupils?
5. Arts interventions have educational value in themselves, but they are not, on average, a highly effective way to raise core academic attainment.

Aspiration interventions



Very low or no impact for moderate cost, based on very limited evidence.

By aspirations we mean the things children and young people hope to achieve for themselves in the future. To meet their aspirations about careers, university, and further education, pupils often require good educational outcomes. Raising aspirations is therefore often believed to incentivise improved attainment.

Aspiration interventions tend to fall into three broad categories:

1. interventions that focus on parents and families;
2. interventions that focus on teaching practice; and
3. out-of-school interventions or extra-curricular activities, sometimes involving peers or mentors.

The approaches used in these interventions are diverse. Some aim to change aspirations directly by exposing children to new opportunities and others aim to raise aspirations by developing general self-esteem, motivation, or self-efficacy. For interventions that focus on self-efficacy and motivation specifically in a learning context please see [Metacognition and self-regulation](#).

How effective is it?

The relationship between aspirations and attainment is complex but, on average, interventions which aim to raise aspirations appear to have little or no positive impact on educational attainment. This may seem counterintuitive but there are three main reasons why this might be the case.

First, evidence suggests that most young people already have high aspirations, suggesting that much underachievement results not from low aspiration but from a gap between aspirations and the knowledge, skills, and characteristics required to achieve them. Second, where pupils do have lower aspirations, it is not clear that any targeted interventions have consistently succeeded in raising their aspirations. Third, where aspirations begin low and are successfully raised by an intervention, it is not clear that an improvement in learning necessarily follows. As a result it may be more helpful to focus directly on raising attainment. In aspiration programmes which do raise attainment, additional academic support is generally present.

How secure is the evidence?

The evidence base on aspiration interventions is very limited. More rigorous studies are required, particularly focusing on pupil-level rather than school-level interventions. There are no meta-analyses of interventions to raise aspirations that report impact on attainment or learning. There are two relevant systematic reviews. These indicate that the relationship between aspirations and attainment is complex and that the evidence for a clear causal connection between learning, changing aspirations, and attitudes to school is weak.

This lack of strong evidence does not mean that impact is not achievable, but schools considering aspiration interventions cannot assume that raising aspirations will be straightforward or will necessarily increase attainment.

The majority of studies come from the USA. There has been little robust research on the impact of aspiration interventions in English schools.

What are the costs?

Costs vary widely and are hard to estimate precisely, but overall they are estimated as moderate. After school programmes typically cost about £5 to £10 per session, so a weekly programme lasting 20 weeks might cost up to £200 per pupil. [Parental engagement](#) programmes typically cost between about £200 per child per year when the school covers the staffing costs, and about £850 per child per year for family support involving a full-time support worker. Mentoring approaches aiming to raise aspirations in the USA have been estimated at \$900 per student per year or about £630.

Aspiration interventions: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. The relationship between aspirations and attainment is not straightforward. In general, approaches to raising aspirations have not translated into increased learning.
2. Most young people have high aspirations for themselves. Ensuring that students have the knowledge and skills to progress towards their aspirations is likely to be more effective than intervening to change the aspirations themselves.
3. The attitudes, beliefs, and behaviours that surround aspirations in disadvantaged communities are diverse, so avoid generalisations.
4. Effective approaches almost always have a significant academic component, suggesting that raising aspirations in isolation will not be effective.
5. Have you considered how you will monitor the impact on attainment of any interventions or approaches?

Behaviour interventions



+3

Moderate impact for moderate cost, based on extensive evidence.

Behaviour interventions seek to improve attainment by reducing challenging behaviour. This entry covers interventions aimed at reducing a variety of behaviours, from low-level disruption to aggression, violence, bullying, substance abuse and general anti-social activities. The interventions themselves can be split into three broad categories:

1. approaches to developing a positive school ethos or improving discipline across the whole school which also aim to support greater engagement in learning;
2. universal programmes which seek to improve behaviour and generally take place in the classroom; and
3. more specialised programmes which are targeted at students with specific behavioural issues.

Other approaches, such as **Parental engagement** and **Social and emotional learning** programmes, are often associated with reported improvements in school ethos or discipline, but are not included in this summary, which is limited to interventions that focus directly on behaviour.

How effective is it?

Evidence suggests that, on average, behaviour interventions can produce moderate improvements in academic performance along with a decrease in problematic behaviours. However, estimated benefits vary widely across the categories of programme described above. Impacts are larger for targeted interventions matched to specific students with particular needs or behavioural issues than for universal interventions or whole school strategies. School-level behaviour approaches are often related to improvements in attainment, but there is a lack of evidence to show that the improvements are actually caused by the behaviour interventions, rather than other school interventions happening the same time. Parental and community involvement programmes are often associated with reported improvements in school ethos or discipline and so are worth considering as alternatives to direct behaviour interventions.

Approaches such as improving teachers' behaviour management and pupils' cognitive and social skills seem to be equally effective.

The majority of studies report higher impact with older pupils. There is some anecdotal evidence about the benefits of reducing problematic behaviour of disruptive pupils on the attainment of their classmates, but this is an understudied dimension in evaluations of behaviour programmes.

How secure is the evidence?

Overall, it is clear that reducing challenging behaviour in schools can have a direct and lasting effect on pupils' learning. This is based on a number of meta-analyses that review robust studies of interventions in schools.

Some caution is needed in interpreting the headline finding as the majority of the meta-analyses of behaviour interventions focus on pupils diagnosed with specific emotional or behavioural disorders, not on low-level classroom disruption. Further research is needed to investigate links between universal approaches to improving general classroom behaviour and better learning outcomes.

What are the costs?

Costs will be highly dependent on the type of intervention. Teacher-led behavioural interventions in the classroom are the least expensive (the only cost is likely to be that of relevant continuing professional development for the teachers) but the also least effective. One to one support is more expensive but more effective (about £40 per hour, or £600 per pupil for 15 sessions). The cost rating presented here relates to the cost of the more intensive interventions. Overall, costs are estimated as moderate.

Behaviour interventions: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Targeted interventions for those diagnosed or at risk of emotional or behavioural disorders produce the greatest effects.
2. Programmes of two to six months seem to produce more long-lasting results.
3. The wide variation in impact suggests that schools should look for programmes with a proven track record of impact.
4. Have you considered what training and professional development is required for any programmes you plan to adopt?
5. Have you explored how to involve parents or communities in behaviour programmes? This appears to increase impact.

Block scheduling



0

Very low or no impact for very low cost, based on limited evidence.

Block scheduling is an approach to school timetabling in secondary schools. It typically means that pupils have fewer classes (4-5) per day, for a longer period of time (70-90 minutes). The three main types of block schedules found in the research are:

4x4 block scheduling: 4 blocks of extended (80–90 minute) classes each day, covering the same 4 subjects each day. Students take 4 subjects over 1 term, and 4 different subjects in the following term. **A/B block scheduling:** 3 or 4 blocks of extended (70–90 minute) classes each day, covering the same 3 or 4 subjects on alternating days. Students take 6 or 8 subjects each term. **Hybrid:** a hybrid of traditional models and 3/4-class-per-day approaches. Students have 5 classes per day, of between 60 and 90 minutes.

How effective is it?

There is no consistent pattern in the evidence. A 2010 systematic review concluded that the 4x4 pattern seemed to produce higher overall achievement than traditional schedules, though this may mask differences between subjects. More detailed analysis suggests that in science the A/B block scheduling approach resulted in higher results than traditional schedules (two to five months of additional progress). In mathematics and English the evidence was unclear with studies showing both better and worse results for any type of block scheduling compared with traditional scheduling.

The evidence suggests that how teachers use the time they are allocated is more important than the length of lesson or the schedule of lessons, and hence that the introduction of block scheduling is unlikely to raise attainment by itself. It may also be that when different timetable patterns are introduced, the changes will only be beneficial if teachers alter the way they teach to get the best from the time allocation. Teachers and students often perceive that timetabling changes are beneficial, especially when it appears to increase one to one interaction. However, these perceptions are not clearly linked with improved learning outcomes.

How secure is the evidence?

There are two recent meta-analyses which have looked at the evidence of the impact of timetabling and scheduling changes on students' learning but these rely on a small number of studies which have limited security.

Timetabling mainly affects secondary schools, though the time spent on different areas of the curriculum is also relevant at primary level. The research has mainly looked at impact on mathematics, English and science.

What are the costs?

The costs of making alterations to the timetable are mainly in terms of organisational effort and time and involve minimal financial outlay.

Block scheduling: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Timetabling changes alone are not sufficient to improve learning.
2. Teachers need to alter the way that they teach, and should plan and organise different kinds of learning activities to obtain benefits.
3. Have timetabling changes been matched to curriculum goals and teaching and learning objectives (such as longer lessons for science experiments)?
4. Have you considered how longer lessons may provide opportunities for other promising approaches, such as improving the amount of feedback that students get from the teacher or from each other?

Built environment



Very low or no impact for low cost, based on very limited evidence.

The built environment is the school building and the physical conditions of the school. Related interventions include moving to a new school building and improving the design, air quality, noise, light, or temperature of an existing building or classroom.

How effective is it?

Overall, changes to the built environment of schools are unlikely to have a direct effect on learning except at the extremes: impact is minimal once an adequate building standard has been achieved.

Moving to a new building could be an effective part of a whole school change that seeks to improve behaviour and establish new norms (similar to introducing or changing **School Uniform**), but there is no evidence that new buildings or particular aspects of architecture directly improve learning. Where a new building is being used as a catalyst for change, there is some evidence supporting co-design, or involving teachers and other staff in the process to help them take responsibility for learning spaces and change their behaviours as they adapt to new settings.

Most individual factors in the physical environment show a relationship with learning only at the extremes. If the noise levels are very high (such as under the flight path of an airport) then there can be a measurable detrimental effect on learning. Very warm (particularly above 30°C) and very humid conditions can cause a loss of concentration and drowsiness. Very low lighting levels can be a barrier to reading and writing but it appears that lighting in schools is usually adequate.

The evidence suggests low internal air quality does have a negative impact on attainment (reducing word recognition by 15% in one study). Low air quality can occur due to the build-up of carbon dioxide in poorly ventilated classrooms.

How secure is the evidence?

The research on the impact of the built environment on learning is generally weak, and is mainly based on correlational studies or drawn as inferences from wider environmental research. There are very few rigorous experimental designs, and this makes it hard to establish causal claims about the impact of physical changes.

Regarding air quality, there is evidence that some English classrooms have higher CO₂ concentrations than the average recommended levels. Given that the link between air quality and academic achievement is better established than other aspects of the physical environment, this may be a worthwhile area for future study.

What are the costs?

It is very difficult to estimate the costs of changes to the built environment as they are usually part of capital spending, rather than a recurrent part of a school budget. A new secondary school costs about £15 million for 1,500 pupils or £10,000 per pupil. However, several generations of pupils are likely to use the building. Improving air quality can be done relatively cheaply with better ventilation, filtration, and the use of dehumidifiers where necessary. Overall, costs are estimated as low.

Built environment: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Most environmental factors have an impact on classrooms only at the extremes.
2. Air quality is likely to be the most significant factor affecting learning, particularly where there is poor ventilation or high levels of dust and other pollutants.
3. High levels of external noise may also have a negative effect on pupils' performance.
4. If you have a new learning environment, it provides an opportunity to change the expectations and behaviour of pupils, but it is unlikely to have a direct impact on learning without other changes. Have you considered how you will take advantage of any new environment to bring about improvements in expectations and behaviours?

Collaborative learning

**+5**

Moderate impact for very low cost, based on extensive evidence.

A collaborative (or cooperative) learning approach involves pupils working together on activities or learning tasks in a group small enough for everyone to participate on a collective task that has been clearly assigned. Pupils in the group may work on separate tasks contributing to a common overall outcome, or work together on a shared task.

Some collaborative learning approaches put mixed ability teams or groups to work in competition with each other in order to drive more effective collaboration. There is a very wide range of approaches to collaborative and cooperative learning involving different kinds of organisation and tasks. **Peer tutoring** can also be considered as a type of collaborative learning, but in the Toolkit it is reviewed as a separate topic.

How effective is it?

The impact of collaborative approaches on learning is consistently positive. However, the size of impact varies, so it is important to get the detail right. Effective collaborative learning requires much more than just sitting pupils together and asking them to work in a group; structured approaches with well-designed tasks lead to the greatest learning gains. There is some evidence that collaboration can be supported with competition between groups, but this is not always necessary, and can lead to learners focusing on the competition rather than the learning it aims to support. Approaches which promote talk and interaction between learners tend to result in the best gains.

How secure is the evidence?

Over 40 years a number of systematic reviews and meta-analyses have provided consistent evidence about the benefits of collaborative learning. In addition to direct evidence from research into collaborative approaches, there is also indirect evidence that has shown that collaboration can increase the effectiveness of other approaches such as **Mastery learning** or **Digital technology**. Collaborative learning appears to work well for all ages if activities are suitably structured for learners' capabilities and positive evidence has been found across the curriculum. Not all of the specific approaches to collaborative learning adopted by schools have been evaluated, so it is important to evaluate any new initiative in this area.

What are the costs?

Overall the costs are estimated as very low. Ongoing training for teachers is advisable, with estimated costs of about £500 per teacher, or £20 per pupil per year for a class of 25 pupils.

Collaborative learning: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Pupils need support and practice to work together; it does not happen automatically.
2. Tasks need to be designed carefully so that working together is effective and efficient, otherwise some pupils will try to work on their own.
3. Competition between groups can be used to support pupils in working together more effectively. However, overemphasis on competition can cause learners to focus on winning rather than succeeding in their learning.
4. It is particularly important to encourage lower achieving pupils to talk and articulate their thinking in collaborative tasks to ensure they benefit fully.
5. Have you considered what professional development is required to support effective use of these approaches?

Digital technology

+4

Moderate impact for moderate cost, based on extensive evidence.

By digital technology we mean the use of computer and technology assisted strategies to support learning within schools. Approaches in this area vary widely, but generally involve:

- technology for students, where learners use programmes or applications designed for problem solving or open-ended learning; or
- technology for teachers, such as interactive whiteboards or learning platforms.

How effective is it?

Studies consistently find that digital technology is associated with moderate learning gains: on average, an additional four months' progress. However, there is considerable variation in impact.

Evidence suggests that technology approaches should be used to supplement other teaching, rather than replace more traditional approaches. It is unlikely that particular technologies bring about changes in learning directly, but some have the potential to enable changes in teaching and learning interactions. For example, they can support teachers to provide more effective feedback or use more helpful representations, or they can motivate students to practise more.

Studies suggest that approaches which individualise learning with technology (such as one to one laptop provision where pupils work through learning activities at their own pace, or individual use of drill and practice software) may not be as helpful as small group learning with technology or the collaborative use of technology.

There is clear evidence that digital technology approaches are more beneficial for writing and mathematics practice than spelling and problem solving, and there is some evidence that they are more effective with young learners.

How secure is the evidence?

There is extensive evidence of positive effects across age groups and for most areas of the curriculum. However, the variation in impact and the range of technologies available suggest that it is always important to monitor the impact on learning of any new approach.

The pace of technological change means that the evidence is usually about yesterday's technology rather than today's, but average effects have remained consistent for some time, suggesting that the general message of – on average – moderate positive impact is likely to remain relevant.

What are the costs?

The total costs of using digital technologies – including all hardware – can be high, but most schools are already equipped with hardware such as computers and interactive whiteboards.

Digital technology approaches often require additional training and support for teachers which can be essential in ensuring the technology is properly used and learning gains are made.

Expenditure for an average programme is estimated at £300 per pupil for new equipment and technical support and a further £500 per class (£20 per pupil) for professional development and support. Costs are therefore estimated as moderate.

Digital technology: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Effective use of digital technology is driven by learning and teaching goals rather than a specific technology: the technology is not an end in itself. You should be clear about how any new technology will improve teaching and learning interactions.
2. New technology does not automatically lead to increased attainment.
3. How will any new technology support pupils to work harder, for longer, or more efficiently, to improve their learning?
4. Pupils' motivation to use technology does not always translate into more effective learning, particularly if the use of the technology and the desired learning outcomes are not closely aligned.
5. Teachers need support and time to learn to use new technology effectively. This involves more than just learning how to use the hardware or software; training should also support teachers to understand how it can be used for learning.

Early years interventions

+5

Moderate impact for very high cost, based on extensive evidence.

Early years or early childhood interventions aim to ensure that young children have educational pre-school or nursery experiences which prepare them for school and academic success. The research summarised here concentrates on the impact of 'packages' of early years provision (known as multi-component programmes) rather than on individual early years interventions. Many of the researched programmes and approaches focus on disadvantaged children. Some also offer parental support.

For more information about the impact of different aspects of early years provision please see the [Early Years Toolkit](#).

How effective is it?

Overall, the evidence suggests that early years and pre-school interventions have a positive impact, delivering an average of around five additional months' progress. The approach appears to be particularly beneficial for children from low income families.

Once early years provision is in place, improving the quality of provision, for example by training staff to improve the interaction between staff and children, appears to be more promising than increasing the quantity of provision (by providing extra hours in the day), or changing the physical environment of early years settings.

In most studies, the impact on attainment tends to reduce over time, although the time this takes varies by approach. This means that even interventions which are effective in narrowing the attainment gap between disadvantaged children and their peers will not be sufficient to prevent the gap opening up again in later years. Where an impact on attitudes to school has been found, it tends to be more lasting.

How secure is the evidence?

There are a number of systematic reviews and meta-analyses which have looked at the impact of early childhood intervention. Most of these are from the USA, however, where children tend to start school at a relatively late age.

Evaluations of Sure Start early years provision in the UK do not show consistent positive effects and indicate that some caution is needed when generalising from exceptionally successful examples. However, overall the evidence supporting early childhood intervention is robust.

What are the costs?

Understandably the costs are very high, as adult/child ratios in pre-school provision tend to be higher than in school classes. Family interventions have similarly high costs. The average cost per child of a Sure Start Local Programme was £1,300 in 2009-2010, so the estimates are in the region of £1,000-£2,000 per child. The average annual cost of sending a child over the age of two to a nursery is about £5,800.

Early years interventions: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. High quality provision with well-qualified and well-trained staff is essential.
2. High quality provision is likely to be characterised by the development of positive relationships between staff and children and by engagement of the children in activities which support pre-reading, the development of early number concepts and non-verbal reasoning.
3. Extended attendance (one year or more) and an earlier starting age (three years old) are more likely to have an impact than shorter periods starting later, which deliver lower benefits on average.
4. Disadvantaged children benefit from high quality programmes, especially where these include a mixture of children from different social backgrounds and a strong educational component.

Extending school time

+2

Low impact for moderate cost, based on moderate evidence.

This summary focuses on extending core teaching and learning time in schools and the use of targeted before and after school programmes. Other approaches to increasing learning time are included in other sections of the Toolkit, such as [Homework](#), [Early years intervention](#) and [Summer schools](#).

The research focuses on three main approaches to extending teaching and learning time in schools:

- extending the length of the school year;
- extending the length of the school day; and
- providing additional time for targeted groups of pupils, particularly disadvantaged or low-attaining pupils, either before or after school.

How effective is it?

The evidence indicates that, on average, pupils make two additional months' progress per year from extended school time and in particular through the targeted use of before and after school programmes. There is some evidence that disadvantaged pupils benefit more, making closer to three months' additional progress. There are also often wider benefits for low-income students, such as increased attendance at school, improved behaviour, and better relationships with peers.

In addition to providing academic support, some school programmes aim to provide stimulating environments and activities or develop additional personal and social skills. These programmes are more likely to have an impact on attainment than those that are solely academic in focus. However, it is not clear whether this is due to the additional activities or to improved attendance and better engagement.

The research also indicates that attracting and retaining pupils in before and after school programmes is harder at secondary level than at primary level. To be successful, any increases in school time should be supported by both parents and staff, and extreme increases (for example more than nine hours of schooling per day in total) do not appear to be additionally beneficial.

How secure is the evidence?

The evidence is moderately secure. Decisions to lengthen the school year or school day are often one component of wider approaches to school reform. This makes attributing any learning gains to the additional time itself difficult. Gains are not consistent across studies, indicating that additional time alone is not enough — it must be used effectively. Discrete or targeted programmes are more likely to have been evaluated robustly than other ways of extending learning time, and even here there is substantial variation in impact.

Most of the evaluations of extending school time come from the USA. The reviews all note the need for more rigorous evaluations with outcome measures that demonstrate direct impact on learning. Evidence from the UK is relatively scarce.

What are the costs?

Overall, costs are estimated as moderate. The average cost of teaching a pupil is about £2,500 a year (£13 per day) in primary school and about £3,500 a year (£18 per day) in secondary. Extending the school year by two weeks would therefore require about £260 per pupil per year for primary schools and about £360 per pupil per year for secondary. Estimates suggest after school clubs cost, on average, £7 per session per pupil. A weekly session would therefore cost £273 per pupil over the course of a 39-week school year. The use of well-qualified and trained staff may increase these cost estimates.

Extending school time: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Planning to get the most from the extra time is important. It should meet pupils' needs and build on their capabilities.
2. After school programmes with a clear structure, a strong link to the curriculum, and well-qualified and well-trained staff are more clearly linked to academic benefits than other types of extended hours provision.
3. After school programmes could give the opportunity to carry out some more intensive tuition (see entries for [One to one](#) or [Small Group Tuition](#))
4. Enrichment activities without a specific focus on learning can have an impact on attainment, but the link is not well-established and the impact of different interventions can vary a great deal (see entries for [Sports](#) or [Arts participation](#))
5. Have you explored how the quality of teaching and learning during school time can be improved? It might be cheaper and more efficient to try introducing more evidence-based programmes or practices into the existing school day first.

Feedback

High impact for very low cost, based on moderate evidence.



+8

Feedback is information given to the learner or teacher about the learner's performance relative to learning goals or outcomes. It should aim towards (and be capable of producing) improvement in students' learning. Feedback redirects or refocuses either the teacher's or the learner's actions to achieve a goal, by aligning effort and activity with an outcome. It can be about the output of the activity, the process of the activity, the student's management of their learning or self-regulation, or them as individuals (which tends to be the least effective). This feedback can be verbal or written, or can be given through tests or via digital technology. It can come from a teacher or someone taking a teaching role, or from peers (see [Peer tutoring](#)).

How effective is it?

Feedback studies tend to show very high effects on learning. However, it also has a very high range of effects and some studies show that feedback can have negative effects and make things worse. It is therefore important to understand the potential benefits and the possible limitations of feedback as a teaching and learning approach. In general, research-based approaches that explicitly aim to provide feedback to learners, such as Bloom's 'mastery learning', tend to have a positive impact. Feedback has effects across all age groups. Research in schools has focused particularly on its impact on English, mathematics and, to a lesser extent, science.

Research evidence about feedback was part of the rationale for Assessment for Learning (AfL). One evaluation of AfL indicated an impact of half of a GCSE grade per student per subject is achievable, which would be in line with the wider evidence about feedback.

Other studies reporting lower impact indicate that it is challenging to improve the quality of feedback in the classroom. This has also been demonstrated in a recent EEF pilot study where teachers tried to apply the evidence on feedback through an action research approach.

How secure is the evidence?

There is a substantial number of reviews and meta-analyses of the effects of feedback. Educational (rather than psychological or theoretical) studies tend to identify positive benefits where the aim of feedback is to improve learning outcomes in reading or mathematics or in recall of information. A recent meta-analysis of studies focusing on formative assessment in schools indicates the gains can be more modest, suggesting that an improvement of about three months' additional progress is achievable in schools or nearer four months when the approach is supported with professional development. However, some areas of the curriculum may benefit more from feedback than others. A recent meta-analysis of the impact of formative assessment on writing indicates gains of 8 months' progress are achievable, which is more consistent with other feedback research.

What are the costs?

The costs of providing more effective feedback are not high. However, it is likely to require sustained professional development to improve practice, and this includes active inquiry and evaluation. Overall, costs are estimated as under £80 per pupil and very low.

Feedback: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Providing effective feedback is challenging. These findings from the broader research may help you to implement it well. Effective feedback tends to be: specific, accurate and clear (e.g. "It was good because you..." rather than just "correct"); compare what a learner is doing right now with what they have done wrong before (e.g. "I can see you were focused on improving X as it is much better than last time's Y..."); encourage and support further effort; be given sparingly so that it is meaningful; provide specific guidance on how to improve and not just tell students when they are wrong; be supported with effective professional development for teachers.
2. Broader research suggests that feedback should be about complex or challenging tasks or goals as this is likely to emphasise the importance of effort and perseverance as well as be more valued by the pupils.
3. Feedback can come from peers as well as adults (see [Peer tutoring](#)).
4. Have you considered the challenges of implementing feedback effectively and consistently in your school?
5. What professional development is likely to be necessary for successful implementation of feedback in your school?

Homework (Primary)



+2

Low impact for very low cost, based on limited evidence.

Homework refers to tasks given to pupils by their teachers to be completed outside of usual lessons. Common homework activities in primary schools tend to be reading or practising spelling and number facts, but may also include more extended activities to develop inquiry skills or more directed and focused work such as revision for tests.

How effective is it?

It is certainly the case that schools whose pupils do homework tend to be more successful. However it is not clear whether use of homework is a reason for this success. A number of reviews and meta-analyses have explored this issue. There is stronger evidence that it is helpful at secondary level [see [Homework \(secondary\)](#)], but there is much less evidence of benefit at primary level.

There is some evidence that when homework is used as a short and focused intervention it can be effective in improving students' attainment, but this is limited for primary age pupils. Overall the general benefits are likely to be modest if homework is more routinely set.

The quality of the task set appears to be more important than the quantity of work required from the pupil.

How secure is the evidence?

Homework has been extensively researched. There is a relatively consistent picture that pupils in schools which give more homework perform better, although for primary age pupils the difference is small. However, there are only a small number of studies which have investigated whether this relationship is due to the homework itself, rather than other school factors. These studies compare classes where homework is introduced to similar classes where homework is not given. They tend to show that homework can be beneficial, but this finding is less secure than the first, because of the smaller number of studies and the quality of the evidence.

What are the costs?

There are few costs associated with homework, though there are implications for staff time for preparation and marking. With younger children there may be additional resources required (such as reading books or games for children to take home). Overall costs are estimated as very low.

Homework (Primary): What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Overall, homework in primary schools does not appear to lead to large increases in learning.
2. Effective homework is associated with greater parental involvement and support. How will you design homework to encourage [Parental engagement?](#)
3. The broader evidence base suggests that short focused tasks or activities which relate directly to what is being taught, and which are built upon in school, are likely to be more effective than regular daily homework.
4. Have you made the purpose of homework clear to children?

Homework (Secondary)

**+5**

Moderate impact for very low cost, based on limited evidence.

Homework refers to tasks given to pupils by their teachers to be completed outside of usual lessons. Common homework activities in secondary schools include completing tasks assigned in lessons, preparing for tasks in future lessons, routine coursework, and revision for tests and examinations. Our definition also includes activities such as 'homework clubs' where pupils have the opportunity to complete homework in school but outside normal school hours, and 'flipped learning' models, where pupils prepare at home for classroom discussion and application tasks.

How effective is it?

The evidence shows that the impact of homework, on average, is five months' additional progress. However, beneath this average there is a wide variation in potential impact, suggesting that how homework is set is likely to be very important.

There is some evidence that homework is most effective when used as a short and focused intervention (e.g. in the form of a project or specific target connected with a particular element of learning) with some exceptional studies showing up to eight additional months' positive impact on attainment. Benefits are likely to be more modest, up to two to three months' progress on average, if homework is more routinely set (e.g. learning vocabulary or completing practice tasks in mathematics every day).

Evidence also suggests that how homework relates to learning during normal school time is important. In the most effective examples homework was an integral part of learning, rather than an add-on. To maximise impact, it also appears to be important that students are provided with high quality feedback on their work (see [Feedback](#)).

Some studies indicate that there may be an optimum amount of homework of between one and two hours per school day (slightly longer for older pupils), with effects diminishing as the time that students spend on homework increases.

How secure is the evidence?

Homework has been extensively researched. There is a relatively consistent picture that pupils in schools which give more homework perform better. However, there are only a small number of studies which have investigated whether this relationship is due to the homework itself, rather than other school factors. These studies compare classes where homework is introduced to similar classes where homework is not given. They tend to show that homework can be beneficial, but this finding is less secure than the first, because of the smaller number of studies and the quality of the evidence.

What are the costs?

There are few costs associated with homework, though there are implications for staff time for preparation and marking. Overall costs are estimated as very low.

Homework (Secondary): What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Planned and focused activities are more beneficial than homework which is more regular but may be routine or not linked with what is being learned in class.
2. The broader evidence suggests that homework should not be used as a punishment or penalty for poor performance.
3. A variety of tasks with different levels of challenge is likely to be beneficial.
4. The broader evidence suggests that the quality of homework is more important than the quantity. Pupils should receive specific and timely feedback on homework.
5. Have you made the purpose of homework clear to children (e.g. to increase a specific area of knowledge, or fluency in a particular area)?

Individualised instruction



+3

Moderate impact for very low cost, based on moderate evidence.

Individualised instruction involves different tasks for each learner and support at the individual level. It is based on the idea that all learners have different needs, and that therefore an approach that is personally tailored — particularly in terms of the activities that pupils undertake and the pace at which they progress through the curriculum — will be more effective. Various models of individualised instruction have been tried over the years in education, particularly in subjects like mathematics where pupils can have individual sets of activities which they complete, often largely independently. More recently, digital technologies have been employed to facilitate individual activities and feedback.

How effective is it?

On average, individualised instruction has a positive effect on learners, although there is large variation across studies, with some showing small negative impacts.

For classroom-based approaches, it appears that the role of the teacher may become more managerial, with the increased requirements for organising and monitoring learning activities leaving less time for high quality pedagogical interaction. This may explain some of the variation in impact. Because of this, individualised instruction may be better used as a supplement to usual class teaching, rather than a standard replacement.

Some recent studies have found higher impacts. These projects have tended to employ **Digital technology** to individualise instruction, and the use of this might explain the higher impacts. For example, technology may enable more immediate feedback on the individualised tasks (for more detail on the impact of Feedback see [here](#)).

How secure is the evidence?

There have been several meta-analyses which support the conclusion that individualising learning for whole classes can have moderate positive impacts. There is, however, some variation, with a number of meta-analyses showing smaller effects.

There is some research from other connected fields, such as computer-based learning, and Bloom's 'mastery learning', where students have instructions broken down into steps, receive feedback on their learning, and only move on when they have 'mastered' a particular step. In both fields, small group approaches appear to be more effective than individualised approaches.

The evidence is mostly drawn from secondary school studies and studies in mathematics, though there is also evidence from other curriculum subjects such as science, history and geography.

What are the costs?

The costs of implementing individualised learning are usually very low. Approaches using technology, such as online tutoring programmes or integrated learning systems, have become less expensive in recent years. Overall, costs are therefore estimated as very low.

Individualised instruction: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. How will you ensure that there is sufficient time for direct teacher interaction with all pupils — individually and as a class — given the increased requirements on the teacher to organise and monitor individual activities?
2. It may be that individualised instruction is only effective for pupils who are skilled in managing their own learning (see [Metacognition and self-regulation](#)). What are the implications of this for your pupils?
3. Using digital technology to deliver individualised learning activities can provide learners with effective practice, but learners also need direct instruction from a teacher when learning new content, or when they are not making progress.
4. Have you considered small group learning as a way to meet differing learner needs without reducing the total amount of teaching time that pupils receive?

Learning styles

Low impact for very low cost, based on limited evidence.



+2

The idea underpinning learning styles is that individuals all have a particular approach to or style of learning. The theory is that learning will therefore be more effective or more efficient if pupils are taught using the specific style or approach that has been identified as their learning style. For example, pupils categorised as having a 'listening' learning style, could be taught more through storytelling and discussion and less through traditional written exercises.

How effective is it?

There is very limited evidence for any consistent set of learning 'styles' that can be used reliably to identify genuine differences in the learning needs of young people, and evidence suggests that it is unhelpful to assign learners to groups or categories on the basis of a supposed learning style.

Overall the evidence shows an average impact of two months' progress for learning style interventions. However, given the limited evidence for the existence of 'learning styles', it is reasonable to conclude that these gains may be the result of pupils taking responsibility for their own learning (see [Metacognition](#)) or from teachers using a wider range of activities to teach the same content, rather than the result of different learning styles.

Learning preferences do change in different situations and over time and there is some evidence that cognitive preference and task type may be connected (for example, visualisation is particularly valuable for some areas of mathematics). However, studies where teaching activities are targeted towards particular learners based on an identified learning 'style' have not convincingly shown any major benefit, particularly for low attaining pupils. Impacts recorded are generally low or negative.

The lack of impact of learning styles has been documented at all stages of education but it is particularly important not to label primary age pupils or for them to believe that their lack of success is due to their learning style.

How secure is the evidence?

Overall the picture is consistent though rigorous research is limited. The evidence for the lack of impact (and in some cases detrimental effect) of using learning styles approaches has been shown in a number of studies. The lack of validity and reliability of learning styles tests has also been the focus of a number of reviews.

What are the costs?

The costs are very low, usually involving preparation of a greater range and variety of teaching and learning materials, though some of the available tests of learning styles require purchase. Typically, these cost about £5 per pupil, although it is important to be aware of the limitations of these tests, given the lack of evidence for the existence of learning styles noted above.

Learning styles: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Learners are very unlikely to have a single learning style, so restricting pupils to activities matched to their reported preferences may damage their progress. This is especially true for younger learners in primary schools whose preferences and approaches to learning are still very flexible.
2. Labelling students as particular kinds of learners is likely to undermine their belief that they can succeed through effort and to provide an excuse for failure.
3. It appears to be more promising to focus on other aspects of motivation to engage pupils in learning activities.
4. It certainly appears to be beneficial to have different representations of ideas when developing understanding, but this does not demonstrate that individual learners have a learning style.
5. How are you encouraging pupils to take responsibility for identifying how they can succeed in their learning and develop their own successful strategies and approaches?

Mastery learning

Moderate impact for very low cost, based on moderate evidence.



Traditional teaching keeps time spent on a topic constant and allows pupils' 'mastery' of curriculum content to vary. Mastery learning keeps learning outcomes constant but varies the time needed for pupils to become proficient or competent at these objectives.

Mastery learning breaks subject matter and learning content into units with clearly specified objectives which are pursued until they are achieved. Learners work through each block of content in a series of sequential steps and must demonstrate a high level of success on tests, typically about 80%, before progressing to the next unit. Those who do not reach the required level are provided with additional tuition, peer support, small group discussions, or homework, so that they can reach the expected level.

How effective is it?

There are a number of meta-analyses which indicate that, on average, mastery learning approaches are effective, leading to an additional five months' progress.

The effects of mastery learning tend to cluster at two points; two of the meta-analyses show little or no impact, while the rest show an impact of up to six months' additional progress. This variation implies that making mastery learning work effectively is challenging.

Mastery learning appears to be particularly effective when pupils work in groups or teams and take responsibility for supporting each other's progress (see also [Collaborative learning](#) and [Peer tutoring](#)). It also seems to be important that a high bar is set for achievement of 'mastery' (usually 80% to 90% on the relevant test). By contrast, the approach appears to be much less effective when pupils work at their own pace (see also [Individualised instruction](#)).

Mastery learning may also be more effective when used as an occasional or additional teaching strategy: programmes with durations of less than 12 weeks have tended to report a higher impact than longer programmes. Schools may wish to consider using mastery learning for particularly challenging topics or concepts, rather than for all lessons.

Mastery learning appears to be a promising strategy for narrowing the attainment gap. Low-attaining pupils may gain one or two more months of additional progress from this strategy than high-attaining students. Teachers need to plan carefully for how to manage the time of pupils who make progress more quickly.

How secure is the evidence?

The evidence base is of moderate security. There is a large quantity of research on the impact of mastery learning, though much of it is relatively dated and findings are not consistent. In addition, most meta-analyses examining mastery learning use older statistical techniques that may be less accurate.

Despite these potential limitations, the average effect size is consistent with a more recent study in the US, which found that mastery learning approaches can increase learning by six months or more in mathematics for pupils aged 13 to 14.

In February 2015, the Education Endowment Foundation (EEF) published an evaluation of the Mathematics Mastery programme, based on two randomised controlled trials conducted in English schools. It found that, on average, pupils in classes where the approach was used made one additional month's progress compared to similar classes that did not.

It is possible that this lower estimate of progress is more relevant to English schools than some of the older studies. An alternative explanation is that the Mathematics Mastery programme did not include some of the features of programmes that were previously associated with higher impacts. For example, although additional support was provided to struggling pupils, classes did not delay starting new topics until a high level of proficiency had been reached by all pupils.

What are the costs?

Few additional resources are required to introduce a mastery learning approach. Professional development and additional support for staff is recommended, particularly in the early stages of setting up a programme. Estimates are less than £80 per pupil, indicating very low overall costs.

Additional small group tuition and one to one support are also likely to be needed for those pupils who take longer to learn a topic. Many schools will provide this support using existing staff and resources without incurring extra financial cost. However, school leaders should be aware of the extra staff time required and think carefully about other activities they might need to cut back on in order to provide this additional support.

Mastery learning: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

-
1. Implementing mastery learning is not straightforward. How will you plan for changes and assess whether the approach is successful within your context?
 2. A high level of success should be required before pupils move on to new content – how will you monitor and communicate pupil progress?
 3. How will you provide opportunities for pupils to take responsibility for helping each other with mastering content?
 4. Mastery learning seems to be effective as an additional teaching strategy. How will you decide which topics and concepts are appropriate for a mastery learning approach?
 5. How will you provide additional support to pupils who take longer to reach the required level of knowledge for each unit?

Mentoring



0

Very low or no impact for moderate cost, based on extensive evidence.

Mentoring in education involves pairing young people with an older peer or volunteer, who acts as a positive role model. In general, mentoring aims to build confidence, develop resilience and character, or raise aspirations, rather than to develop specific academic skills or knowledge.

Mentors typically build relationships with young people by meeting with them one to one for about an hour a week over a sustained period, either during school, at the end of the school day, or at weekends.

Activities vary between different mentoring programmes. While some mentoring programmes include some direct academic support with homework or other school tasks, approaches focused primarily on direct academic support are not covered in this strand. See [One to one tuition](#) and [Peer tutoring](#).

Mentoring has increasingly been offered to young people who are deemed to be hard to reach or at risk of educational failure or exclusion.

How effective is it?

On average, mentoring appears to have little or no positive impact on academic outcomes. The impacts of individual programmes vary. Some studies have found positive impacts for pupils from disadvantaged backgrounds, and for non-academic outcomes such as attitudes to school, attendance and behaviour. However, there are risks associated with unsuccessful mentor pairings, which may have a detrimental effect on the mentee, and some studies report negative overall impacts.

School-based mentoring programmes appear to be less effective than community-based approaches, possibly because school-based mentoring can result in fewer opportunities for young people to develop more lasting and trusting relationships with adult role models.

Programmes which have a clear structure and expectations, provide training and support for mentors, and use mentors from a professional background, are associated with more successful outcomes.

How secure is the evidence?

The evidence is extensive. Five meta-analyses have been published in the last ten years, and estimates of average impact have been fairly consistent over the last decade. The quality of individual studies has improved in recent years with more experimental — rather than correlational — studies available for inclusion in reviews.

Most of the studies come from the USA and focus on secondary school pupils, with a few studies from the UK and other European countries such as Portugal. A recent rigorous study of mentoring for reading with eight-to-nine-year-olds in Northern Ireland found small improvements of about two months' progress in fluency, but not in reading comprehension. Further rigorous evaluation in the UK is needed to assess varying approaches to mentoring across different age groups.

What are the costs?

Overall, costs are estimated as moderate. They mainly cover mentor training and support, and the organisation and administration of the programme. Community-based programmes tend to be more expensive than school-based programmes as schools tend to absorb some of the costs, such as space costs or general administration. Estimates in the USA are between \$1000–\$1500 per student per year or about £700–£1050.

Mentoring: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. The impact of mentoring varies but, on average, it is likely to have very little impact on attainment.
2. Positive effects tend not to be sustained once the mentoring stops, so care must be taken to ensure that benefits are not lost.
3. Community-based approaches tend to be more successful than school-based approaches.
4. Mentor drop-out can have detrimental effects on mentees. What steps have you taken to assess the reliability of mentors?
5. What training and support have you provided for mentors?

Metacognition and self-regulation



High impact for very low cost, based on extensive evidence.

Metacognition and self-regulation approaches aim to help pupils think about their own learning more explicitly, often by teaching them specific strategies for planning, monitoring and evaluating their learning. Interventions are usually designed to give pupils a repertoire of strategies to choose from and the skills to select the most suitable strategy for a given learning task.

Self-regulated learning can be broken into three essential components:

- cognition - the mental process involved in knowing, understanding, and learning;
- metacognition - often defined as 'learning to learn'; and
- motivation - willingness to engage our metacognitive and cognitive skills.

How effective is it?

Metacognition and self-regulation approaches have consistently high levels of impact, with pupils making an average of seven months' additional progress.

These strategies are usually more effective when taught in collaborative groups so that learners can support each other and make their thinking explicit through discussion.

The potential impact of these approaches is high, but can be difficult to achieve in practice as they require pupils to take greater responsibility for their learning and develop their understanding of what is required to succeed.

The evidence indicates that teaching these strategies can be particularly effective for low achieving and older pupils.

How secure is the evidence?

A number of systematic reviews and meta-analyses have consistently found strategies related to metacognition and self-regulation to have large positive impacts. Most studies have looked at the impact on English or mathematics, though there is some evidence from other subject areas like science, suggesting that the approach is likely to be widely applicable.

The approaches that have been tested tend to involve applying self-regulation strategies to specific tasks involving subject knowledge, rather than learning generic 'thinking skills'.

The EEF has evaluated a number of programmes that seek to improve 'learning to learn' skills. The majority have found positive impacts, although smaller in size (around 2 months' progress on average) than the average seen in the wider evidence base. For three of these programmes there were indications that they were particularly beneficial for pupils from low income families.

A 2014 study, [Improving Writing Quality](#), used a structured programme of writing development based on a self-regulation strategy. The evaluation found gains, on average, of an additional nine months' progress, suggesting that the high average impact of self-regulation strategies is achievable in English schools.

Guidance report

The EEF has published guidance on applying the evidence EEF on metacognition and self-regulation in the classroom. The guidance report can be found [here](#).

What are the costs?

Overall, costs are estimated as very low. Many studies report the benefits of professional development for teachers, and using an inquiry approach where teachers actively evaluate strategies and approaches as they learn to use them in their teaching. Most projects are estimated as costing under £80 per pupil, including the necessary professional development for teachers.

Metacognition and self-regulation: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Which explicit strategies can you teach your pupils to help them plan, monitor, and evaluate specific aspects of their learning?
2. How can you give them opportunities to use these strategies with support, and then independently?
3. How can you ensure you set an appropriate level of challenge to develop pupils' self-regulation and metacognition in relation to specific learning tasks?
4. In the classroom, how can you promote and develop metacognitive talk related to your lesson objectives?
5. What professional development is needed to develop your knowledge and understanding of these approaches? Have you considered professional development interventions which have been shown to have an impact in other schools?

One to one tuition

Moderate impact for high cost, based on extensive evidence.



+5

One to one tuition involves a teacher, teaching assistant or other adult giving a pupil intensive individual support. It may happen outside of normal lessons as additional teaching – for example as part of **Extending school time** or a **Summer school** – or as a replacement for other lessons.

How effective is it?

Evidence indicates that one to one tuition can be effective, delivering approximately five additional months' progress on average.

Short, regular sessions (about 30 minutes, three to five times a week) over a set period of time (six to twelve weeks) appear to result in optimum impact. Evidence also suggests tuition should be additional to, but explicitly linked with, normal teaching, and that teachers should monitor progress to ensure the tutoring is beneficial. Studies comparing one to one with small group tuition show mixed results. In some cases one to one tuition has led to greater improvement, while in others tuition in groups of two or three has been equally or even more effective. The variability in findings may suggest it is the particular type or quality of teaching enabled by very small groups that is important, rather than the precise size of the group.

Programmes involving **Teaching assistants** or volunteers can have a valuable impact, but tend to be less effective than those using experienced and specifically trained teachers, which have nearly twice the effect on average. Where tuition is delivered by volunteers or teaching assistants there is evidence that training and the use of a structured programme is advisable.

How secure is the evidence?

Overall, the evidence is consistent and strong, particularly for younger learners who are behind their peers in primary schools, and for subjects like reading and mathematics (there are fewer studies at secondary level or for other subjects). Effects on pupils from disadvantaged backgrounds also tend to be particularly positive.

In the UK, four recent evaluations of one to one tuition interventions (see **Catch Up Numeracy**, **Catch Up Literacy**, **REACH**, and **Switch-on Reading**) found average impacts of between three and six months' additional progress, suggesting that positive impacts can be successfully replicated in English schools.

For full references, please click [here](#).

What are the costs?

A typical effective programme might involve 30 minutes tuition, five times a week, for 12 weeks. This would require about four full days of a teacher's time, which is estimated to cost approximately £700 per pupil. These costs would be reduced by using a teaching assistant to deliver the programme, but the evidence suggests that impacts are generally higher when delivered by teachers. Overall the cost is rated as high.

There is some evidence that **Small group tuition** can deliver similar benefits at a lower cost.

One to one tuition: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. One to one tuition is very effective in helping learners catch up, but is relatively expensive. Have you considered using **Small group tuition** instead and evaluating the impact?
2. Tuition is more likely to make an impact if it is additional to and explicitly linked with normal lessons.
3. Have you considered how you will support pupils and regular class teachers to ensure the impact is sustained once they return to normal classes?
4. For one to one tuition led by teaching assistants, interventions are likely to be particularly beneficial when the teaching assistants are experienced and well-trained. What training and support have you provided?
5. A number of one to one programmes delivered by teaching assistants have been rigorously evaluated and shown to be **effective**. If you are buying a programme, have you considered one of these?

Oral language interventions

**+5**

Moderate impact for very low cost, based on extensive evidence.

Oral language interventions emphasise the importance of spoken language and verbal interaction in the classroom. They are based on the idea that comprehension and reading skills benefit from explicit discussion of either the content or processes of learning, or both. Oral language approaches include:

- targeted reading aloud and book discussion with young children;
- explicitly extending pupils' spoken vocabulary;
- the use of structured questioning to develop reading comprehension; and
- the use of purposeful, curriculum-focused, dialogue and interaction.

Oral language interventions aim to support learners' articulation of ideas and spoken expression. Oral language interventions therefore have some similarity to approaches based on **Metacognition** which make talk about learning explicit in classrooms (such as Philosophy for Children), and to **Collaborative learning** approaches which promote pupils' talk and interaction in groups (such as Thinking Together).

How effective is it?

Overall, studies of oral language interventions consistently show positive impact on learning, including on oral language skills and reading comprehension. On average, pupils who participate in oral language interventions make approximately five months' additional progress over the course of a year.

All pupils appear to benefit from oral language interventions, but some studies show slightly larger effects for younger children and pupils from disadvantaged backgrounds (up to six months' additional progress).

Some types of oral language interventions appear to be more effective than others, on average. Interventions which are directly related to text comprehension or problem-solving appear to have greater impact. There is also consistent evidence supporting reading to young children and encouraging them to answer questions and to talk about the story with a trained adult. A number of studies show the benefits of trained teaching assistants effectively supporting both oral language skills and reading outcomes.

In contrast, more general 'whole language' approaches, which focus on meaning and personal understanding, do not appear to be as successful as those involving more interactive and dialogic activities.

For all oral language interventions, certain factors are associated with higher learning gains, suggesting that careful implementation is important. For example, approaches which explicitly aim to develop spoken vocabulary work best when they are related to current content being studied in school, and when they involve active and meaningful use of any new vocabulary. Similarly, approaches that use technology are most effective when the technology is used as a medium to encourage collaborative work and interaction between pupils, rather than in a direct teaching or tutoring role. Most studies comment on the importance of training and teacher development or support with implementation.

How secure is the evidence?

There is an extensive evidence base on the impact of oral language interventions, including a substantial number of meta-analyses and systematic reviews. The evidence is relatively consistent, suggesting that oral language interventions can be successful in a variety of environments. Although the majority of the evidence relates to younger children, there is also clear evidence that older learners, and particularly disadvantaged pupils, can benefit.

The evidence base includes a number of high quality studies in UK schools. Additional evidence about matching specific programmes or approaches to particular learners' needs, either by age or by attainment, would also be useful.

Guidance report

The EEF has published guidance on improving literacy in Key Stages 1 and 2. Improving Literacy in Key Stage One can be found [here](#) and Improving Literacy in Key Stage Two [here](#).

What are the costs?

Overall, the costs are estimated as very low: typically around £40 per pupil. Direct financial costs are limited to additional resources, such as books for discussion, and professional development for teachers, which is likely to enhance the benefits for learning. For a number of recent UK evaluations, the median per pupil cost per year was £40.

Oral language interventions: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. How can you help pupils to make their learning explicit through verbal expression?
2. How will you match the oral language activities to learners' current stage of development, so that it extends their learning and connects with the curriculum?
3. What training should the adults involved receive to ensure they model and develop pupils' oral language skills?
4. If you are using technology, how will you ensure that pupils talk about their learning and interact with each other effectively?

Outdoor adventure learning

**+4**

Moderate impact for moderate cost, based on moderate evidence.

Outdoor adventure learning typically involves outdoor experiences, such as climbing or mountaineering; survival, ropes or assault courses; or outdoor sports, such as orienteering, sailing and canoeing. These can be organised as intensive residential courses or shorter courses run in schools or local outdoor centres.

Adventure education usually involves **collaborative learning experiences** with a high level of physical (and often emotional) challenge. Practical problem-solving, explicit reflection and discussion of thinking and emotion (see also **Metacognition and self-regulation**) may also be involved.

Adventure learning interventions typically do not include a formal academic component, so this summary does not include forest schools or field trips.

How effective is it?

Overall, studies of adventure learning interventions consistently show positive benefits on academic learning. On average, pupils who participate in adventure learning interventions make approximately four additional months' progress. There is also evidence of an impact on non-cognitive outcomes such as self-confidence.

The evidence suggests that the impact is greater for more vulnerable students and older learners (teenagers), longer courses (more than a week), and those in a 'wilderness' setting, though other types of intervention still show some positive impacts.

Understanding why adventure learning interventions appear to improve academic outcomes is not straightforward. One assumption might be that non-cognitive skills such as perseverance and resilience are developed through adventure learning and that these skills have a knock-on impact on academic outcomes. If adventure learning interventions are effective because of their impact on non-cognitive skills, then explicitly encouraging students to actively apply these skills in the classroom is likely to increase effectiveness. However, it should be noted that the wider evidence base on the relationship between these non-cognitive skills and pupil achievement is underdeveloped.

How secure is the evidence?

The evidence on adventure learning interventions is moderately secure. The range of effect sizes is fairly wide but all the studies included in the meta-analysis show a positive effect.

What are the costs?

Costs vary, with a six-day adventure sailing experience costing about £600 and a seven-day outdoor adventure course about £550 per pupil. An adventure ropes course costs about £30 for half a day. Overall, costs are estimated at £500 per pupil per year and therefore as moderate.

Outdoor adventure learning: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. A wide range of adventure activities are linked with increased academic achievement.
2. Experiences that last over a week tend to have greater impact and tend to produce effects of a longer duration.
3. It is important to work with well-trained and well-qualified staff as adventure experiences can pose very different physical and emotional risks to those experienced in schools.
4. Outdoor adventure experiences could have positive impacts on self-confidence, self-efficacy and motivation. How will you maximise the impact on learning by ensuring pupils apply these skills when they return to the classroom?

Parental engagement



+3

Moderate impact for moderate cost, based on moderate evidence.

We define parental engagement as the involvement of parents in supporting their children's academic learning. It includes:

- approaches and programmes which aim to develop parental skills such as literacy or IT skills;
- general approaches which encourage parents to support their children with, for example reading or homework;
- the involvement of parents in their children's learning activities; and
- more intensive programmes for families in crisis.

How effective is it?

Although parental engagement is consistently associated with pupils' success at school, the evidence about how to improve attainment by increasing parental engagement is mixed and much less conclusive, particularly for disadvantaged families.

Two recent meta-analyses from the USA suggested that increasing parental engagement in primary and secondary schools had on average two to three months' positive impact. There is some evidence that supporting parents with their first child will have benefits for siblings. However, there are also examples where combining parental engagement strategies with other interventions, such as extended early years provision, has not been associated with any additional educational benefit. This suggests that developing effective parental engagement to improve their children's attainment is challenging and needs careful monitoring and evaluation.

Parents' aspirations also appear to be important for pupil outcomes, although there is limited evidence to show that intervening to change parents' aspirations will raise their children's aspirations and achievement over the longer term.

The EEF has tested a number of interventions designed to improve pupils' outcomes by engaging parents in different types of skills development. The consistent message from these has been that it is difficult to engage parents in programmes. By contrast, a trial which aimed to prompt greater parental engagement through text message alerts delivered a small positive impact, and at very low cost.

How secure is the evidence?

The association between parental engagement and a child's academic success is well established and there is a long history of research into parental engagement programmes. However, there is surprisingly little robust evidence about the impact of approaches designed to improve learning through increased parental engagement.

The evidence is predominantly from primary level and the early years, though there are studies which have looked at secondary schools. Impact studies tend to focus on reading and mathematics attainment.

What are the costs?

The costs of different approaches vary enormously. Running parent workshops (about £80 per session) and improving communications between parents and school (**Texting Parents** costs about £6 per year per pupil) are relatively cheap, while intensive family support programmes with specially trained staff are more costly. A specialist community teacher or home/school liaison teacher who can work with a number of families at once costs about £35,000. Overall, costs per pupil are estimated as moderate.

Parental engagement: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Engagement is often easier to achieve with parents of very young children. How will you maintain parental engagement as children get older?
2. Have you provided a flexible approach to allow parental engagement to fit around parents' schedules? Parents of older children may appreciate short sessions at flexible times.
3. How will you make your school welcoming for parents, especially those whose own experience of school may not have been positive?
4. What practical support, advice and guidance can you give to parents who are not confident in their ability to support their children's learning, such as simple strategies to help early readers?

Peer tutoring

Moderate impact for very low cost, based on extensive evidence.



+5

Peer tutoring includes a range of approaches in which learners work in pairs or small groups to provide each other with explicit teaching support, such as:

- cross-age tutoring, in which an older learner takes the tutoring role and is paired with a younger tutee or tutees;
- peer assisted learning, which is a structured approach for mathematics and reading with sessions of 25–35 minutes two or three times a week; and
- reciprocal peer tutoring, in which learners alternate between the role of tutor and tutee.

The common characteristic is that learners take on responsibility for aspects of teaching and for evaluating their success.

Peer assessment involves the peer tutor providing feedback to the tutee relating to their performance and can take different forms, such as reinforcing learning or correcting misunderstandings.

How effective is it?

Overall, the introduction of peer tutoring approaches appears to have a positive impact on learning, with an average positive effect equivalent to approximately five additional months' progress. Studies have identified benefits for both tutors and tutees, and for a wide range of age groups. Though all types of pupils appear to benefit from peer tutoring, there is some evidence that pupils who are low-attaining and those with special educational needs make the biggest gains.

Peer tutoring appears to be particularly effective when pupils are provided with support to ensure that the quality of peer interaction is high: for example, questioning frames to use in tutoring sessions, and training and feedback for tutors. In cross-age peer tutoring some studies have found that a two-year age gap is beneficial and that intensive blocks of tutoring are more effective than longer programmes.

Peer tutoring appears to be more effective when the approach supplements or enhances normal teaching, rather than replaces it. This suggests that peer tutoring is most effectively used to consolidate learning, rather than to introduce new material.

How secure is the evidence?

There have been extensive studies done on peer tutoring, the majority of which show moderate to high average effects. High-quality reviews have explored the impact of peer tutoring at both primary and secondary level, and in a variety of subjects.

Though overall the evidence base related to peer tutoring is consistently positive, most recent studies of peer tutoring have found lower average effects, suggesting that monitoring the implementation and impact of peer tutoring is valuable. Overall, the evidence is rated as extensive.

Two randomised controlled trials conducted in English schools and published in 2015 found that the introduction of new peer tutoring programmes did not lead to any improvement in attainment. This evidence may reinforce previous findings that factors such as the amount or type of support provided to tutors are important, or may indicate that some forms of peer tutoring that have been effective elsewhere are less effective in English schools. It is also possible that the introduction of new peer tutoring programmes will have less of an impact in schools where peer tutoring or collaborative learning is already commonplace. It would be valuable to assess these possibilities through further research.

What are the costs?

The direct costs of running peer tutoring in schools are very low, as few additional materials are required (£10–20 per pupil per year). Professional development and additional support for staff is recommended, particularly in the early stages of setting up a programme. Estimates are less than £80 per pupil, indicating very low overall costs.

Peer tutoring: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Are the activities sufficiently challenging for the tutee to benefit from the tutor's support?
2. What support will the tutor receive to ensure that the quality of peer interaction is high?
3. Training for staff and tutors is essential for success. How will you ensure sufficient time to train both staff and tutors, and to identify and implement improvements as the programme progresses?
4. How will you ensure peer tutoring is being used to review or consolidate learning, rather than to introduce new material?
5. Four to ten week intensive blocks appear to provide maximum impact for both tutors and tutees. Can you arrange for your peer tutoring to follow this structure?

Performance pay

Low impact for low cost, based on limited evidence.



+1

Performance pay schemes aim to create a direct link between teacher pay and the performance of their class in order to incentivise better teaching and so improve pupil outcomes.

A distinction can be drawn between awards, where improved performance leads to a higher permanent salary, and payment by results, where teachers get a bonus for higher test scores.

Approaches also differ in how performance is measured and how closely those measures are linked to outcomes for learners. In some schemes, students' test outcomes are the sole factor used to determine performance pay awards. In others, performance judgements can also include information from lesson observations or feedback from pupils, or be left to the discretion of the headteacher. Some performance schemes incentivise individuals, others incentivise groups of teachers.

How effective is it?

The results of rigorous evaluations, such as those with experimental trials or with well-controlled groups, suggest that the average impact of performance pay schemes has been just above zero months' progress. Approaches making use of loss aversion – where awards have to be paid back if student results fall below a certain level – have shown greater impact.

There is some evidence that impact may also be greater in developing countries. Overall, evaluations of a number of performance pay schemes in the USA, where the approach is also known as 'merit pay', have been unable to find a clear link with improved pupil learning outcomes.

A related approach that has shown promise is using bonuses or enhanced pay to attract teachers to challenging schools.

There are some concerns that performance pay schemes can create unintended consequences. For example, that they may encourage teachers to focus only on tested outcomes, leading to a narrowing of the curriculum, or to focus on groups of pupils near a particular assessment threshold.

Overall, approaches which simply assume that incentives will make teachers work more effectively are not well supported by existing evidence.

How secure is the evidence?

The evidence is limited. Although there has been extensive research into performance pay, much of this is either from correlational studies that link national pay levels with general national attainment, or from naturally occurring experiments. More recent randomized trials have had mixed results. Overall, it is hard to make definitive causal claims about the impact of performance pay on attainment, on the basis of the existing evidence.

The English threshold assessment was introduced in 2000 and was designed to reward high quality teaching. Evaluations of the threshold assessment offer a cautious endorsement of approaches which use financial incentives to encourage the most skilled and qualified teachers to work with disadvantaged pupils.

What are the costs?

Sums of between \$15,000 and \$5,000 have been awarded in merit pay schemes in the US. In England, performance pay generally means schools using staff performance to allocate teacher progression within existing pay ranges. Some academies have paid one-off performance bonuses of between £100 and £2,000 per teacher (or between £4 and £80 per pupil across a class of 25). Overall, costs are estimated as low.

Performance pay: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Have you considered other, more cost effective, ways to improve teacher performance, such as high quality continuing professional development?
2. Given the lack of evidence that performance pay significantly improves the quality of teaching, resources may be better targeted at identifying and recruiting high quality teachers.
3. How will you make sure that performance pay does not lead to a narrower focus on the measures used to assess teacher performance, or to teachers focusing on the performance of particular groups of pupils?

Phonics

+4

Moderate impact for very low cost, based on very extensive evidence.

Phonics is an approach to teaching reading, and some aspects of writing, by developing learners' phonemic awareness. This involves the skills of hearing, identifying and using phonemes or sound patterns in English. The aim is to systematically teach learners the relationship between these sounds and the written spelling patterns, or graphemes, which represent them. Phonics emphasises the skills of decoding new words by sounding them out and combining or 'blending' the sound-spelling patterns.

How effective is it?

Phonics approaches have been consistently found to be effective in supporting younger readers to master the basics of reading, with an average impact of an additional four months' progress. Research suggests that phonics is particularly beneficial for younger learners (4-7 year olds) as they begin to read. Teaching phonics is more effective on average than other approaches to early reading (such as whole language or alphabetic approaches), though it should be emphasised that effective phonics techniques are usually embedded in a rich literacy environment for early readers and are only one part of a successful literacy strategy.

For older readers who are still struggling to develop reading skills, phonics approaches may be less successful than other approaches such as Reading comprehension strategies and Meta-cognition and self-regulation. The difference may indicate that children aged 10 or above who have not succeeded using phonics approaches previously require a different approach, or that these students have other difficulties related to vocabulary and comprehension which phonics does not target.

Qualified teachers tend to get better results when delivering phonics interventions (up to twice the effectiveness of other staff), indicating that pedagogical expertise is a key component of successful teaching of early reading.

How secure is the evidence?

Overall, the evidence base related to phonics is very secure. There have been a number of studies, reviews and meta-analyses that have consistently found that the systematic teaching of phonics is beneficial. There is some evidence that approaches informed by synthetic phonics (where the emphasis is on sounding out letters and blending sounds to form words) may be more beneficial than analytic approaches (where the sound/symbol relationship is inferred from identifying patterns and similarities by comparing several words). However, the evidence here is less secure and it is probably more important to match the teaching to children's particular needs and systematically teach the sound patterns with which they are not yet confident.

Several robust studies of phonics programmes in English have been published in recent years. The findings show that phonics programmes can be effective in English schools, but also underline the importance of high quality implementation. Recent evaluations of Switch-on Reading, a programme involving phonics components delivered by teaching assistants, and Fresh Start, showed that both had an average impact of three additional months' progress. However two other programmes, both targeting struggling, older readers, did not improve reading outcomes.

Guidance reports

The EEF has published guidance on improving literacy in Key Stages 1 and 2. Improving Literacy in Key Stage One can be found [here](#) and Improving Literacy in Key Stage Two [here](#).

What are the costs?

Overall, the costs are estimated as very low. The costs associated with teaching phonics arise from the need for specific resources and professional training. Evidence suggests that the effectiveness of phonics is related to the pupil's stage of reading development, so it is also important that teachers have professional development in effective assessment as well as in the use of particular phonic techniques and materials.

Phonics: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

-
1. Phonics can be an important component in the development of early reading skills, particularly for children from disadvantaged backgrounds. However, it is also important that children are successful in making progress in all aspects of reading including vocabulary development, comprehension and spelling, which should be taught separately and explicitly.
 2. The teaching of phonics should be explicit and systematic to support children in making connections between the sound patterns they hear in words and the way that these words are written.
 3. The teaching of phonics should be matched to children's current level of skill in terms of their phonemic awareness and their knowledge of letter sounds and patterns (graphemes).
 4. Phonics improves the accuracy of the child's reading but not the comprehension. How are you planning on developing wider literacy skills such as comprehension?

Reading comprehension strategies

High impact for very low cost, based on extensive evidence.



+6

Reading comprehension strategies focus on the learners' understanding of written text. Pupils are taught a range of techniques which enable them to comprehend the meaning of what they read. These can include: inferring meaning from context; summarising or identifying key points; using graphic or semantic organisers; developing questioning strategies; and monitoring their own comprehension and identifying difficulties themselves (see also [Metacognition and self-regulation](#)).

How effective is it?

On average, reading comprehension approaches deliver an additional six months' progress. Successful reading comprehension approaches allow activities to be carefully tailored to pupils' reading capabilities, and involve activities and texts that provide an effective, but not overwhelming, challenge.

Many of the approaches can be usefully combined with [Collaborative learning](#) techniques and [Phonics](#) to develop reading skills. The use of techniques such as graphic organisers and drawing pupils' attention to text features are likely to be particularly useful when reading expository or information texts.

There are some indications that computer-based tutoring approaches can be successful in improving reading comprehension (although the evidence is less robust in this area), particularly when they focus on the development of strategies and self-questioning skills.

Comparative findings indicate that, on average, reading comprehension approaches appear to be more effective than [Phonics](#) or [Oral language](#) approaches for upper primary and secondary pupils, for both short-term and long-term impact. However, supporting struggling readers is likely to require a coordinated effort across the curriculum and a combination of approaches. No particular strategy should be seen as a panacea, and careful diagnosis of the reasons why an individual pupil is struggling should guide the choice of intervention strategies.

How secure is the evidence?

There is extensive evidence in this area from a range of studies over the last 30 years. The majority of studies are from the USA and focus on pupils aged between 8 and 18 who are falling behind their peers or have difficulties with reading.

In the UK, recent evaluations of programmes that have included a focus on teaching reading comprehension strategies have not found such an extensive impact, though there is evidence that children from disadvantaged backgrounds may benefit more.

Guidance report

The EEF has published guidance on improving literacy in Key Stages 1 and 2. Improving Literacy in Key Stage One can be found [here](#) and Improving Literacy in Key Stage Two [here](#).

What are the costs?

The cost of the resources and professional training required to deliver reading comprehension strategies is estimated as very low. Evidence suggests that reading comprehension approaches need to be tailored to a pupil's current reading capabilities, so it is important that teachers receive professional development in effective diagnosis as well as training in the use of particular techniques and materials. The cost for an intervention with this type of training is estimated at £1,200 per teacher or £48 per pupil.

Reading comprehension strategies: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. A key issue for teachers is identifying the level of difficulty for comprehension activities that is required to extend pupils' reading capabilities. How will you ensure the texts used provide an effective challenge?
2. Effective diagnosis of reading difficulties is important in identifying possible solutions, particularly for older struggling readers. Pupils can struggle with decoding the words, understanding the structure of the language used, or understanding particular vocabulary, which may be subject-specific. What techniques will you use to identify particular pupils' needs?
3. A wide range of strategies and approaches can be successful, but they need to be taught explicitly and consistently. How are you going to identify the strategies that will meet the needs of your pupils and how will these be reinforced?
4. How can you focus learners' attention on developing comprehension strategies that they can apply more widely?

Reducing class size



+3

Moderate impact for high cost, based on moderate evidence.

As the size of a class or teaching group gets smaller it is suggested that the range of approaches a teacher can employ and the amount of attention each student will receive will increase, improving outcomes for pupils.

How effective is it?

Reducing class size appears to result in around three months' additional progress for pupils, on average. Intuitively, it seems obvious that reducing the number of pupils in a class will improve the quality of teaching and learning, for example by increasing the amount of high quality feedback or one to one attention learners receive. However, overall, the evidence does not show particularly large or clear effects until class size is reduced substantially to fewer than 20 or even 15 pupils. It appears to be very hard to achieve improvements from modest reductions in class size to numbers above 20, for example from 30 to 25.

The key issue appears to be whether the reduction is large enough to permit the teacher to change their teaching approach when working with a smaller class and whether, as a result, the pupils change their learning behaviours. If no change occurs then, perhaps unsurprisingly, learning is unlikely to improve. When a change in teaching approach does accompany a class size reduction (which appears hard to achieve until classes are smaller than about 20) then benefits on attainment can be identified, in addition to improvements on behaviour and attitudes. In some studies, these benefits persist for a number of years (from early primary school through to at least the end of primary school).

There is some evidence that reducing class sizes is more likely to be effective when accompanied by professional development for teachers focusing on teaching skills and approaches. Some evidence suggests slightly larger effects are documented for lower achievers and, for very young pupils, those with lower socio-economic status.

Smaller class sizes may also provide more opportunities for teachers to develop new skills and approaches.

How secure is the evidence?

Overall, there is a relatively consistent finding that smaller classes are associated with slightly higher attainment when other factors are controlled for and when class sizes have been deliberately reduced in experimental evaluations.

One difficulty in interpreting the evidence about class size is that many countries or schools already teach lower-attaining pupils in smaller groups.

The strongest evidence comes from research into primary schools in the USA where the benefits appear to be sustained for three to four years when classes are reduced below 18. There is some evidence that pupils in disadvantaged areas in the UK benefit from classes of fewer than 20 pupils in primary schools.

What are the costs?

Reducing class sizes to a level where a significant benefit is likely is expensive. The evidence suggests that typical classes would need to be reduced to between 15 and 20 pupils. The additional teacher costs of splitting a class of 30 pupils into two classes of 15 pupils would be around £1,150 per pupil. This does not take into account the cost of additional classrooms. Overall, costs are estimated as high.

Reducing class size: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Small reductions in class size (for example, from 30 to 25 pupils) are unlikely to be cost-effective relative to other strategies.
2. Reducing class sizes for younger children may provide longer term benefits.
3. Smaller classes only impact upon learning if the reduced numbers allow teachers to teach differently. Have you considered how you will adjust your teaching strategies and what professional development will be required?
4. The gains from smaller class sizes are likely to come from the increased flexibility for organising learners and the quality and quantity of feedback the pupils receive (see [Feedback](#)). Have you considered how you will organise learning in smaller classes and how you will improve feedback to your pupils?
5. As an alternative to reducing class sizes, have you considered changing the way you deploy staff (both teachers and teaching assistants) so that teachers can work more intensively with smaller groups (see [Small group tuition](#))?

Repeating a year



-4

Negative impact for very high cost, based on moderate evidence.

Repeating a year is also known as “grade retention”, “non-promotion”, or “failing a grade”. Pupils who do not reach a given standard of learning at the end of a year are required to repeat that year of learning by joining a class of younger students the following academic year. For students at secondary school level, repeating a year is usually limited to the particular subject or classes that a student has not passed.

Repeating a year is very rare in the UK, but it is relatively common in the USA, where the No Child Left Behind Act (2002) recommended that students be required to demonstrate a set standard of achievement before progressing to the next grade level. Students can also be required to repeat a year in some European countries including Spain, France, and Germany. In some countries, such as Finland, pupils can repeat a year in exceptional circumstances, but this decision is made collectively by teachers, parents, and the student, rather than on the basis of end of year testing.

How effective is it?

Evidence suggests that, in the majority of cases, repeating a year is harmful to a student’s chances of academic success. In addition, studies consistently show greater negative effects for students from disadvantaged backgrounds, suggesting that the practice is likely to increase educational inequality. Repeating a year is also likely to lead to greater negative effects when used in the early years of primary school, for students from ethnic minorities, or for pupils who are relatively young in their year group (often referred to as ‘summer born’ pupils in the US and European literature).

Pupils who repeat a year make an average of four months’ less academic progress over the course of a year than pupils who move on. In addition, studies suggest that students who repeat a year are unlikely to catch up with peers of a similar level who move on, even after completing an additional year’s schooling. Studies also suggest that students who repeat a year are more likely to drop out of school prior to completion.

Although the overall average impact is negative, some studies suggest that in individual circumstances some students can benefit, particularly in the short term. However, it does not appear to be easy to identify which students will benefit, suggesting that repeating a year is a significant risk.

How secure is the evidence?

There are no studies that have used an experimental design. However, overall, there are a number of high quality evidence reviews which show that negative effects have been found consistently over the last fifty years in both Europe and North America. The evidence is therefore rated as moderate.

What are the costs?

These costs are estimated on the basis of an additional year of schooling. Annual costs of schooling vary widely in England with secondary school costs tending to fall between £4,000 and £9,000, and primary school costs between £3,000 and £8,000. Costs are therefore estimated at £6,000 per pupil per year.

Repeating a year: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Negative effects are rare for educational interventions, so the extent to which pupils who repeat a year make less progress is striking.
2. Negative effects are disproportionately greater for disadvantaged pupils, for pupils from ethnic minorities, and for pupils who are relatively young in their year group.
3. Have you considered alternative interventions such as intensive tuition or one to one support? They are considerably cheaper and may make repeating a school year unnecessary (see [One to one tuition](#)).
4. Negative effects tend to increase with time and repeating more than one year significantly increases the risk of students dropping out of school.

School uniform



Very low or no impact for very low cost, based on very limited evidence.

School uniform is the clothing pupils are required to wear at school. Uniforms vary from the very formal (requiring blazers) to more informal (involving just a school sweatshirt). Schools vary as to how strictly a uniform policy is enforced.

How effective is it?

There is a general belief in many countries that school uniform supports the development of a whole school ethos and therefore supports discipline and motivation. However, there is no robust evidence that introducing a school uniform will, by itself, improve academic performance, behaviour, or attendance. There are studies that show changes in these outcomes after the introduction of a school uniform policy. However, in these cases uniform was usually one factor amongst several improvement measures, such as changes in **behaviour policy** or other aspects teaching and learning. Therefore it is not possible to claim that changes in outcomes were caused by the introduction of a uniform.

There are cultural issues about how a school uniform is perceived which play an important role in determining its acceptability and pupils' compliance. There is some evidence that free school uniforms improve attendance in areas of very high poverty, however this does not appear to be true in all cases. In some cultures, school uniforms are associated with regulation and the loss of individuality, so care must be taken when generalising from studies in different contexts.

How secure is the evidence?

There are no systematic reviews or meta-analyses of well-controlled studies of school uniform policy. The evidence rests mainly on correlational studies that have compared the performance of schools with uniforms to those without, or that have examined a school's trajectory of improvement after the introduction of school uniform. One of the problems in interpreting this evidence is that schools in challenging circumstances often choose a school uniform policy as part of a broader range of improvement measures. The most rigorous reviews and analyses have so far been unable to establish a causal link, but speculate that adoption of a uniform policy may provide a symbolic and public commitment to school improvement.

What are the costs?

The costs for schools associated with introducing a school uniform are very low. Normally the costs are borne by parents who must buy the required clothes.

School uniform: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Wearing a uniform is not, on its own, likely to improve learning, but can be successfully incorporated into a broader school improvement process which includes the development of a school ethos and the improvement of behaviour and discipline. If you are planning to implement a uniform policy, have you considered how you will embed it in a wider school policy which will improve learning?
2. There is a general belief that school uniform leads to improvements in pupils' behavior. It is important to remember that improved behaviour, on its own, does not necessarily lead to better learning, though it may be an important precondition (see **Behaviour interventions**).
3. Staff commitment to upholding and enforcing a uniform policy is crucial to successful implementation.

Setting or streaming



-1

Negative impact for very low cost, based on limited evidence.

The terms 'setting' and 'streaming' are used to describe a variety of approaches by which pupils with similar levels of current attainment are consistently grouped together for lessons.

- 'Setting' usually involves grouping pupils in a given year group into classes for specific subjects, such as mathematics and English, but not across the whole curriculum.
- 'Streaming' (also known as 'tracking' in some countries) usually involves grouping pupils into classes for all or most of their lessons, so that a pupil is in the same group regardless of the subject being taught.

Pupils in different sets or streams sometimes follow a different curriculum, particularly when different national tests, different examination levels or different types of academic and vocational qualifications are available.

The aim of setting and streaming approaches is to enable more effective and efficient teaching by narrowing the range of pupil attainment in a class.

In the UK, setting and streaming are more common in secondary school than in primary school.

Although these practices are sometimes described as 'ability grouping', we refer here to 'attainment' rather than 'ability', as schools generally use measures of current performance, rather than measures of ability, to group pupils.

Setting and streaming are combined in this Toolkit entry because these practices are usually combined in the evidence reviews on attainment grouping. Both involve regular and consistent grouping of pupils into classes based on attainment.

For evidence on the impact of grouping pupils by attainment *within classes*, see the [Within-class attainment grouping](#) Toolkit entry. Other types of attainment grouping, such as grouping by attainment across year groups, and teaching high attaining pupils with older year groups, are not covered in the Toolkit as they are less commonly used.

How effective is it?

On average, pupils experiencing setting or streaming make slightly less progress than pupils taught in mixed attainment classes.

The evidence suggests that setting and streaming has a very small negative impact for low and mid-range attaining learners, and a very small positive impact for higher attaining pupils. There are exceptions to this pattern, with some research studies demonstrating benefits for all learners across the attainment range.

Overall the effects are small, and it appears that setting or streaming is not an effective way to raise attainment for most pupils.

Setting or streaming may also have an impact on wider outcomes such as confidence. Some studies from the broader evidence base conclude that grouping pupils on the basis of attainment may have longer term negative effects on the attitudes and engagement of low attaining pupils, for example, by discouraging the belief that their attainment can be improved through effort.

One of the challenges of attainment grouping is ensuring that pupils are correctly allocated to groups. Some studies from the UK suggest that misallocation is a particular problem for pupils from disadvantaged backgrounds, who are at greater risk of misallocation to lower attaining groups, and the negative impact which can accompany this.

A recent EEF project aimed to improve outcomes for pupils by tackling poor setting practices, including misallocation. The project had no overall impact on attainment, but this appeared to be largely because it was a challenge for schools to change their setting practices.

How secure is the evidence?

The evidence on setting and streaming has accumulated over at least 50 years and there are a large number of experimental studies. The conclusions on the impact of setting and streaming are relatively consistent across different evidence reviews. However, most of the reviews present relatively basic analysis. They do not explore whether effects vary between different types of study and different interventions and the evidence base would benefit from new reviews which address these issues in more depth. Overall, the evidence is rated as limited.

The majority of the experimental evidence comes from the USA, and there are few rigorous experimental studies from other countries.

There is more evidence from secondary schools than primary schools, as setting and streaming are more commonly used for older pupils.

A large correlational study in the UK found no overall effects on GCSE performance of setting in English, mathematics or science. However, disadvantaged pupils are likely to do relatively worse when in sets organised by attainment.

What are the costs?

Setting and streaming are organisational strategies that have few associated financial costs. Additional expenditure may be needed if setting or streaming results in greater numbers of classes or requires additional resources for different groups. Overall the costs are estimated as very low.

Setting or streaming: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Have you considered alternative approaches to tailoring teaching and learning? One to one and small group tuition are targeted interventions which have positive impacts on attainment.
2. How will you ensure that your setting or streaming approach enables more effective teaching for all pupils, including lower attaining pupils? Which groups will your most experienced teachers be allocated to?
3. How will you ensure that all pupils follow a challenging curriculum, including lower attaining pupils?
4. How will you minimise the risk of allocating pupils to the wrong group? Have you assessed whether your grouping criteria could disadvantage certain pupils? For younger children, have you taken their relative age within the year group into account?
5. How flexible are your grouping arrangements? Pupils progress at different rates and so regular monitoring and assessment is important to minimise misallocation and ensure challenge for all pupils.
6. How will you monitor the impact of setting or streaming on pupil engagement and attitudes to learning, particularly for lower attaining pupils?

Small group tuition



+4

Moderate impact for moderate cost, based on limited evidence.

Small group tuition is defined as one teacher or professional educator working with two to five pupils together in a group. This arrangement enables the teacher to focus exclusively on a small number of learners, usually in a separate classroom or working area. Intensive tuition in small groups is often provided to support lower attaining learners or those who are falling behind, but it can also be used as a more general strategy to ensure effective progress, or to teach challenging topics or skills.

How effective is it?

Overall, evidence shows that small group tuition is effective and, as a rule of thumb, the smaller the group the better. Tuition in groups of two has a slightly higher impact than in groups of three, but a slightly lower impact than one to one tuition. Some studies suggest that greater feedback from the teacher, more sustained engagement in smaller groups, or work which is more closely matched to learners' needs explains this impact. Once group size increases above six or seven there is a noticeable reduction in effectiveness.

However, although the above pattern is broadly consistent, there is some variability in impact within the existing evidence. For example, in reading, small group teaching can sometimes be more effective than either one to one or paired tuition. It may be that in these cases reading practice can be efficiently organised so that all the pupils stay fully engaged as each take their turn, such as in Guided Reading.

The variability in findings suggests two things. First, the quality of the teaching in small groups may be as or more important than the precise group size (there is evidence of the benefits of staff professional development on pupil outcomes). Second, it is important to evaluate the effectiveness of different arrangements, as the specific subject matter being taught and composition of the groups may influence outcomes.

Given the uncertainty and the lower cost, small group tuition may be a sensible approach to trial before considering to one to one tuition.

How secure is the evidence?

The evidence mainly relates to low-attaining pupils receiving additional support to catch up with their peers. More research has been undertaken into paired tuition than other kinds of small group tuition, so the evidence for small group teaching across varying sizes of groups and at different levels of intensity is not conclusive and mainly comes from single studies. There are very few studies where group size has been varied systematically to explore the effects beyond one to two and one to three, so more research would be useful in this area. Overall, the evidence is limited.

To date, the majority of the evidence comes from the USA. However, in recent years a growing number of rigorous UK studies have been conducted. In a 2014 evaluation Year 6 and 7 pupils made an additional three months' progress with Switch-on Reading, a structured programme involving small group tuition. In addition, an intensive coaching programme that involved one to one and small group tuition had an average impact of five additional months' progress.

A 2011 evaluation of Every Child Counts also found that the programme had a positive impact when delivered on a one to one basis or with groups of two or three, with all group sizes making similar amounts of progress.

What are the costs?

Overall, costs are estimated as moderate. Costs decrease as group size increases because the majority of the costs are for staff time. The cost of paired tuition is approximated as £350 per pupil per term (based on two pupils receiving 30 minutes of tuition, five times a week for 12 weeks) plus any resource or equipment costs, with one to three cheaper still (£233 per pupil).

Small group tuition: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Small group tuition is most likely to be effective if it is targeted at pupils' specific needs. How will you assess pupils' needs accurately before adopting a new approach?
2. One to one tuition and small group tuition are both effective interventions. However, the cost effectiveness of one to two and one to three indicates that greater use of these approaches may be worthwhile. Have you considered trying one to two or one to three as an initial option?
3. Training and support are likely to increase the effectiveness of small group tuition. Have those delivering the small group tuition been trained in the programme they are using?

Social and emotional learning

Moderate impact for moderate cost, based on extensive evidence.



+4

Interventions which target social and emotional learning (SEL) seek to improve pupils' interaction with others and self-management of emotions, rather than focusing directly on the academic or cognitive elements of learning. SEL interventions might focus on the ways in which students work with (and alongside) their peers, teachers, family or community.

Three broad categories of SEL interventions can be identified:

- universal programmes which generally take place in the classroom;
- more specialised programmes which are targeted at students with particular social or emotional needs; and
- school-level approaches to developing a positive school ethos, which also aim to support greater engagement in learning.

How effective is it?

On average, SEL interventions have an identifiable and valuable impact on attitudes to learning and social relationships in school. They also have an average overall impact of four months' additional progress on attainment.

Although SEL interventions are almost always perceived to improve emotional or attitudinal outcomes, not all interventions are equally effective at raising attainment. Improvements appear more likely when SEL approaches are embedded into routine educational practices and supported by professional development and training for staff. In addition, the implementation of the programme and the degree to which teachers are committed to the approach appear to be important.

SEL programmes appear to be particularly beneficial for disadvantaged or low-attaining pupils.

SEL approaches have been found to be effective in primary and secondary schools, and early years settings.

How secure is the evidence?

There is extensive international research in this area, including a number of meta-analyses. More research has been undertaken in primary than in secondary schools, and a number of studies have specifically evaluated the impact on pupils who are low-attaining or disadvantaged.

In England, a number of studies have identified a link between SEL interventions and academic outcomes, although a recent EEF study of a popular US programme did not show a positive impact overall.

What are the costs?

The main financial cost of implementing a whole-school social and emotional learning approach will be the cost of professional development. In EEF-funded programmes, the average cost of professional development is well under £80 per pupil. However, targeted programmes are likely to be much more expensive, so the overall average cost is rated as moderate.

Social and emotional learning: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. How will you link the teaching of social and emotional skills with academic content?
2. How will you provide appropriate professional development for teachers and other school staff to effectively support SEL approaches?
3. How will you ensure that you support all staff to consistently apply aspects of SEL more widely in school and embed them in routine school practices?
4. How will you sensitively target social and emotional approaches to benefit at-risk or vulnerable pupils?
5. The impact on attainment of social and emotional aspects of learning is not consistent, so it is important to evaluate the impact of any initiative. Have you considered how you will do this?

Sports participation



+2

Low impact for moderate cost, based on limited evidence.

Sports participation interventions engage pupils in sports as a means to increasing educational engagement and attainment. This might be through organised after school activities or a programme organised by a local sporting club or association. Sometimes sporting activity is used as a means to encourage young people to engage in additional learning activities, such as football training at a local football club combined with study skills, ICT, literacy, or mathematics lessons.

How effective is it?

The overall impact of sports participation on academic achievement tends to be positive but low (about two additional months' progress). However, there is recent evidence from the UK that sports participation can have a larger effect on, for example, mathematics learning when combined with a structured numeracy programme (with one study showing an impact of up to ten months' additional progress). In this circumstance the 'participation' acted as an incentive to undertake additional instruction.

The variability in effects suggests that the quality of the programme and the emphasis on, or connection with, academic learning may make more difference than the specific type of approach or sporting activities involved. Participating in sports and physical activity is likely to have wider health and social benefits.

How secure is the evidence?

There have been a number of reviews linking the benefits of participation in sport with academic benefits. There is, however, considerable variation in impact, including some studies which show negative effects. Overall, the evidence is rated as limited.

What are the costs?

Cost are estimated at about £300 to £400 per pupil per year excluding clothing, equipment, and travel costs. These costs vary according to equipment, venue, and group size. There would also be a difference in cost between providing sports activities on school premises, and pupils attending existing provision. Overall, costs are estimated as moderate.

Sports participation: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Being involved in extra-curricular sporting activities may increase attendance and retention.
2. Impact varies considerably between different interventions, and participation in sports does not straightforwardly transfer to academic learning. It is likely that the quality of the programme and the emphasis on or connection with academic learning may make more difference than the specific type of approach or activities involved.
3. Planned extra-curricular activities which include short, regular, and structured teaching in literacy and mathematics (either tutoring or group teaching) as part of a sports programme, such as an after school club or summer school, are much more likely to offer academic benefits than sporting activities alone.
4. If you are considering sports participation as an approach to improving attendance, engagement and attainment, have you considered how you will evaluate the impact?

Summer schools



Low impact for moderate cost, based on extensive evidence.

Summer schools are lessons or classes during the summer holidays. They are often designed as catch-up programmes, although some do not have an academic focus and concentrate on sports or other non-academic activities. Others have a specific aim, such as supporting pupils at the transition from primary to secondary school or preparing high-attaining pupils for university.

How effective is it?

On average, evidence suggests that pupils who attend a summer school make approximately two additional months' progress compared to similar pupils who do not.

Greater impacts (as much as four additional months' progress) can be achieved when summer schools are intensive, well-resourced, and involve small group tuition by trained and experienced teachers. In contrast, summer schools without a clear academic component are not usually associated with learning gains. Other variables, such as whether the teacher is one of the student's usual teachers, seem to make less difference on average.

How secure is the evidence?

Overall, the level of evidence related to summer schools is extensive. There are a number of meta-analyses, which consistently find small average effects. Studies include both primary and secondary school pupils and mainly focus on reading and literacy. Some studies indicate that gains are greater for disadvantaged pupils, but this is not consistent.

Most studies have taken place in the USA. However, a meta-analysis combining findings from three recent evaluations of summer schools in England indicates that average gains in literacy of an additional two months' progress are also achievable in the UK.

A recent evaluation for the Department for Education in the UK concluded that one of the greatest barriers to summer schools having impact was achieving high levels of attendance.

What are the costs?

Overall, costs are estimated as moderate. They include the employment of teachers for the duration of the summer school, hiring a venue and providing resources (for example, books and photocopying). Courses typically cost in the region of £250 –£300 per week per student. Recent evaluations of summer school programmes in England estimated the costs as being slightly higher for a summer programme at between £1,370 and £1,750 per pupil over four weeks (£340 to £440 per pupil, per week). However, overall costs are estimated as moderate, (less than £720 per pupil per year), because these particular programmes were unusually long.

Summer schools: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Summer school provision that aims to improve learning needs to have an academic component. Does your summer school include an intensive teaching component (small group or one to one)?
2. Summer schools are relatively expensive. Have you considered providing additional learning time during the school year, which may achieve similar benefits for a lower cost?
3. Maintaining high attendance at summer schools can be a challenge. What steps will you take to engage pupils and their families?

Teaching assistants

Low impact for high cost, based on limited evidence.



+1

Teaching assistants (also known as TAs or classroom support assistants) are adults who support teachers in the classroom. Teaching assistants' duties can vary widely from school to school, ranging from providing administrative and classroom support to providing targeted academic support to individual pupils or small groups.

How effective is it?

Evidence suggests that TAs can have a positive impact on academic achievement. However, effects tend to vary widely between those studies where TAs provide general administrative or classroom support, which on average do not show a positive benefit, and those where TAs support individual pupils or small groups, which on average show moderate positive benefits. The headline figure of one additional month's progress lies between these figures.

Research that examines the impact of TAs providing general classroom support suggests that students in a class with a teaching assistant present do not, on average, outperform those in one where only a teacher is present. This average finding covers a range of impacts. In some cases teachers and TAs work together effectively, leading to increases in attainment. In other cases pupils, particularly those who are low attaining or identified as having special educational needs, can perform worse in classes with teaching assistants.

Where overall negative impacts have been recorded, it is likely that support from TAs has substituted rather than supplemented teaching from teachers. In the most positive examples, it is likely that support and training will have been provided for both teachers and TAs so that they understand how to work together effectively, e.g. by making time for discussion before and after lessons.

Research which focuses on teaching assistants who provide one to one or small group support shows a stronger positive benefit of between three and five additional months on average. Often support is based on a clearly specified approach which teaching assistants have been trained to deliver. Though comparisons with qualified teachers suggest that teaching assistants tend not to be as effective in terms of raising attainment (achieving, on average about half the gains), studies suggest that benefits are possible across subjects and at both primary and secondary level.

How secure is the evidence?

Overall, the level of evidence related to teaching assistants is limited. A number of systematic reviews of the impact of support staff in schools have been conducted. However, there are no meta-analyses specifically looking at the impact of teaching assistants on learning.

Correlational studies looking at the impact of TAs providing general classroom support have shown broadly similar effects. One of the most recent studies, conducted in England, suggests that on average low attaining pupils do less well in a class with a TA present, compared to a class where only a teacher is present. More recent intervention studies, including two randomised controlled trials conducted in England in 2013, provide a strong indication that TAs can improve learning if they are trained and deployed carefully. Given the limited amount of existing evidence, these studies made a substantial contribution to the overall evidence base, changing the overall average impact from zero to one additional months' progress.

What are the costs?

The average cost of employing a teaching assistant, including salary and on-costs, is estimated at about £18,000. Overall, costs are estimated as high.

Teaching assistants: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. Have you identified the activities where TAs can support learning, rather than simply managing tasks?
2. Have you provided support and training for teachers and TAs so that they understand how to work together effectively?
3. How will you ensure that teachers do not reduce their support or input to the pupils supported by TAs?
4. Have you considered how you will evaluate the impact of how you deploy your TAs?

Within-class attainment grouping



+3

Moderate impact for very low cost, based on limited evidence.

Within-class attainment grouping involves organising pupils within their usual class for specific activities or topics, such as literacy. Pupils with similar levels of current attainment are grouped together, for example, on specific tables, but all pupils are taught by their usual teacher and support staff, and they usually all follow the same curriculum.

The aim of this type of grouping is to match tasks, activities and support to pupils' current capabilities, so that all pupils have an appropriate level of challenge.

In the UK, within-class attainment grouping tends to be more common in primary schools than in secondary schools.

Within-class grouping can involve the use of other approaches such as [collaborative learning](#) or targeted strategies (see [Reading comprehension strategies](#)).

Although within-class grouping is sometimes described as 'ability grouping', we refer here to 'attainment' rather than 'ability', as schools generally use measures of current performance, rather than measures of ability, to group pupils.

For evidence on the impact of grouping pupils by attainment *into different classes*, see the '[Setting or streaming](#)' Toolkit entry. Other types of attainment grouping, such as grouping by attainment across year groups, and teaching high attaining pupils with older year groups, are not covered in the Toolkit as they are less commonly used.

How effective is it?

The evidence on within-class attainment grouping indicates that it is likely to be beneficial for all learners, providing an average benefit of three months' additional progress. However, there appears to be less benefit for lower attaining pupils than others.

Within-class attainment grouping may also have an impact on wider outcomes such as confidence. Some studies from the broader evidence base conclude that grouping pupils on the basis of attainment may have longer term negative effects on the attitudes and engagement of low attaining pupils, for example, by discouraging the belief that their attainment can be improved through effort.

How secure is the evidence?

The evidence has accumulated over at least 50 years, and there are a large number of experimental studies. The conclusions on the impact of within-class attainment grouping are relatively consistent across different evidence reviews. However, most of the reviews present relatively basic analysis. They do not explore whether effects vary between different types of study and different types of grouping interventions and the evidence base would benefit from new reviews which considered these issues in more depth. Overall, the evidence is rated as limited.

The majority of the experimental evidence comes from the USA, and there are few rigorous experimental studies from other countries.

There is more evidence from primary schools than secondary schools, as within-class grouping is more commonly used for younger pupils.

Studies which measure the impact of within-class attainment grouping often compare it with mixed attainment whole-class teaching. This means it is possible that the positive impact observed is partly or wholly due to *grouping*, rather than to *attainment grouping*. To know whether this is the case requires more studies which compare within-class attainment grouping with within-class grouping which is not based on attainment.

Because lower attaining pupils appear to benefit less than others from within-class attainment grouping, it is important to consider the wider evidence on supporting these particular pupils when developing strategies to improve their attainment. See for example [Small group tuition](#) and [One to one tuition](#).

What are the costs?

Within class grouping by attainment has few associated financial costs. Additional expenditure may be required for additional teaching resources for different groups. Overall the costs are estimated as very low.

Within-class attainment grouping: What should I consider?

Before you implement this strategy in your learning environment, consider the following:

1. How will you decide which subjects or activities are grouped by current level of attainment and which are not?
2. How will you ensure that all pupils receive high quality teaching when different groups are doing different tasks or require different teaching strategies?
3. How will you minimise the risk of allocating pupils to the wrong group? Have you assessed whether your grouping criteria could disadvantage certain pupils? For younger children, have you taken their relative age within the year group into account?
4. How flexible are your grouping arrangements? Pupils progress at different rates so regular monitoring and assessment is important to minimise misallocation and ensure challenge for all pupils.
5. How will you monitor the impact of grouping on pupils' engagement and attitudes to learning, particularly for lower attaining pupils?