ASSESSMENT IN
SECONDARY COMPUTING

Alan O'Donohoe and **John Woollard** offer practical, common-sense advice on how to assess Computing for ages 11 to 16

I t's important for teachers to be clear from the start about their reasons for assessment, so they can be certain that the assessment strategies they use are fit for purpose. Although the motivation for assessment can be intrinsic, it's more often driven by a strong outsider influence, such as the expectations of school leaders and parents or the need to meet performance targets. We'll look at three purposes for assessment in this article.

■ **Assessment of learning:** The purpose is to assess what the learners can now do, what they now know, their improved understanding and, importantly, their attitude to learning, with the intention of recording, tracking, and reporting this to others. This type of assessment may not be highly valued either by the teacher or the learner, but it is necessarily fed into the accountability agenda in schools, from school to school, across the school, across the subject, and across the teaching team. These assessment results are typically used to inform pupils and parents about the progress that has been made over a set time period. Therefore, it is vital that the

Regular assessment can lead to more engaged learners

measurements are viewed with the beginning of the time period in mind, as well as the end.

■ **Assessment for the learner:** The purpose of this is fundamentally to support each individual learner. When an individual learner can objectively observe their own progress, this will help them to understand where they are in terms of their own individual learning journey. Through regular analysis, learners can more accurately identify any gaps in their knowledge and understanding and take appropriate action to address these gaps. This can lead to much more engaged learners in class, who are better informed about their own abilities and progress.

■ **Assessment for teaching:** This is intended to inform the teacher in order to help shape their teaching plans. Assessments focus on the success criteria for teaching and might include measures of learner engagement, attainment, and progress. However, they may also be based on a professional judgement of what constitutes a 'good lesson' and the reasons for that judgement.

It is likely that some assessment is taking place to fulfil each of the reasons listed; it could be your own professional judgement about how well the learners are doing when you teach in a particular way, informal monitoring of outputs, or casual feedback to students about their attainment in particular tasks.

Three dangers to watch out for

Danger 1: Don't seek the holy grail of assessment. Be wary of the dangers of being oversold apparently attractive assessment solutions by enthusiastic advocates. Some solutions that work extremely well, perhaps for a teacher in one particular context with boundless energy and motivation, are probably unsustainable in the long term. In reality these solutions may have:

■ High start-up costs in terms of investing time to learn to use the system and adapt the resources

■ High ongoing maintenance costs in capturing and inputting data

■ Low value in terms of informing stakeholders
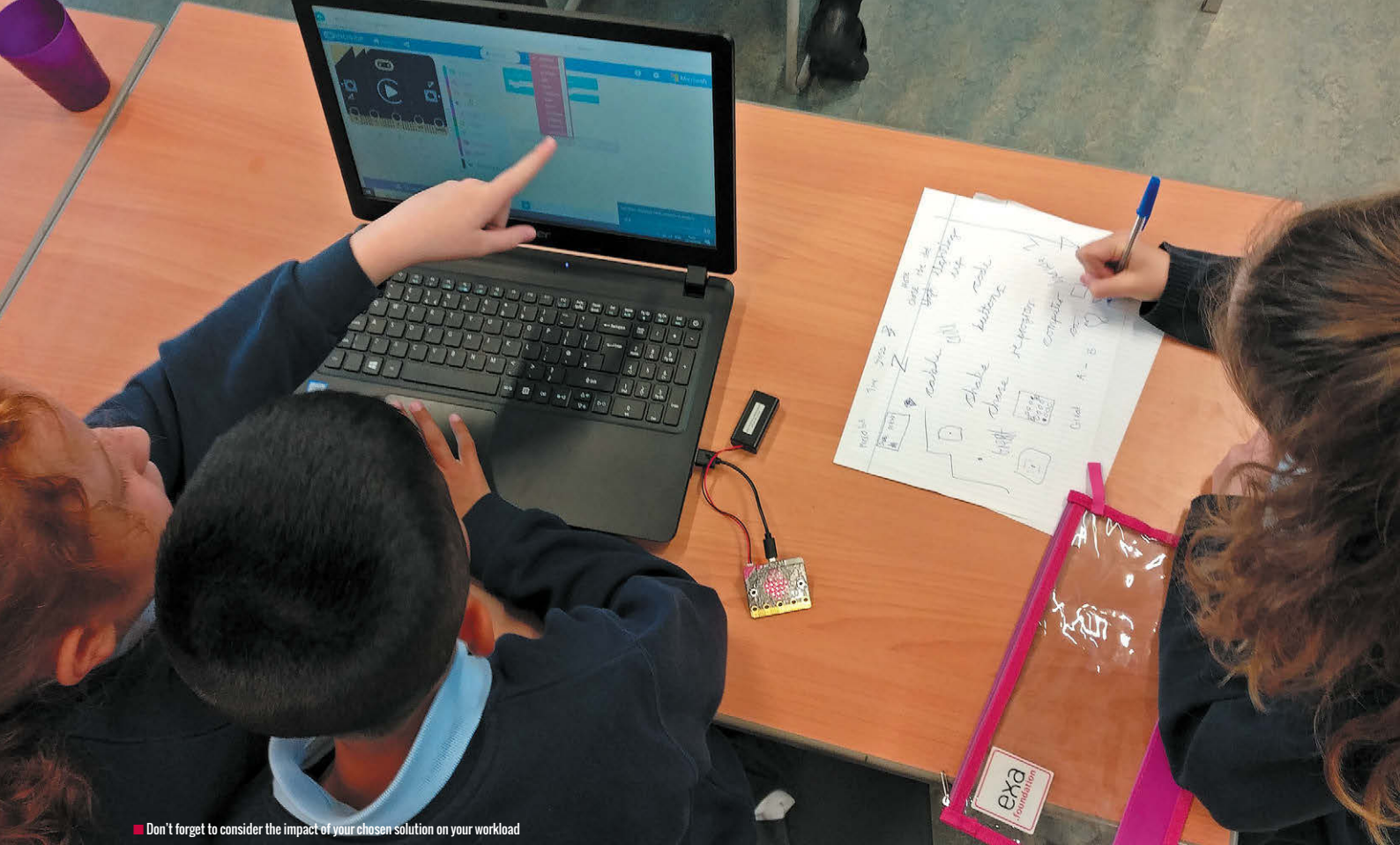
■ Don't forget to consider the impact of your chosen solution on your workload

1 DON'T DISMISS SIMPLE SOLUTIONS, AS THESE MAY BE THE ONES THAT WORK BEST FOR YOU

It's really about finding an approach that you think will work for you and your learners in your setting, and then refining and developing it to get the most from it. If this is the way you approach assessment, then the holy grail will eventually come and find you!

Danger 2: Consider the workload impact. Your well-being is incredibly important, and there is little value in creating a wonderful-sounding assessment strategy if it is impractical to use on a regular basis. It would be wise to calculate how much time would be needed for you to keep on top of a solution, and then consider this in terms of all the classes you teach. 'Little and often' is the key with assessment. Do not dismiss simple solutions, as these are often the ones that will work best for you. Solutions that are 'just good enough' are the most likely to serve you well in the longer term. You can always tweak and improve a system that is just good enough once it becomes embedded into your regular routine.

Danger 3: Beware false success. Some commercially available assessment solutions do not limit or control students' attempts at multiple choice quizzes, meaning that students can choose to repeat the tests until they score 100%. These can be popular with
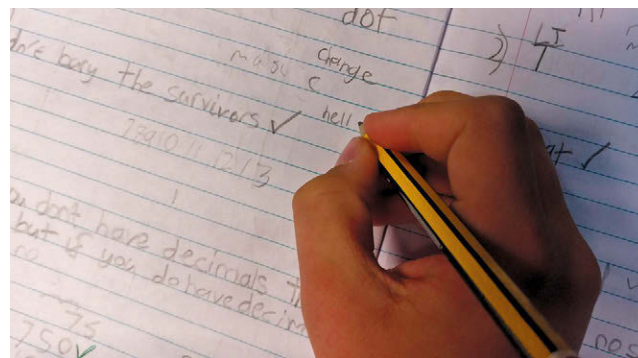
■ We have suggested four tried and tested assessment strategies

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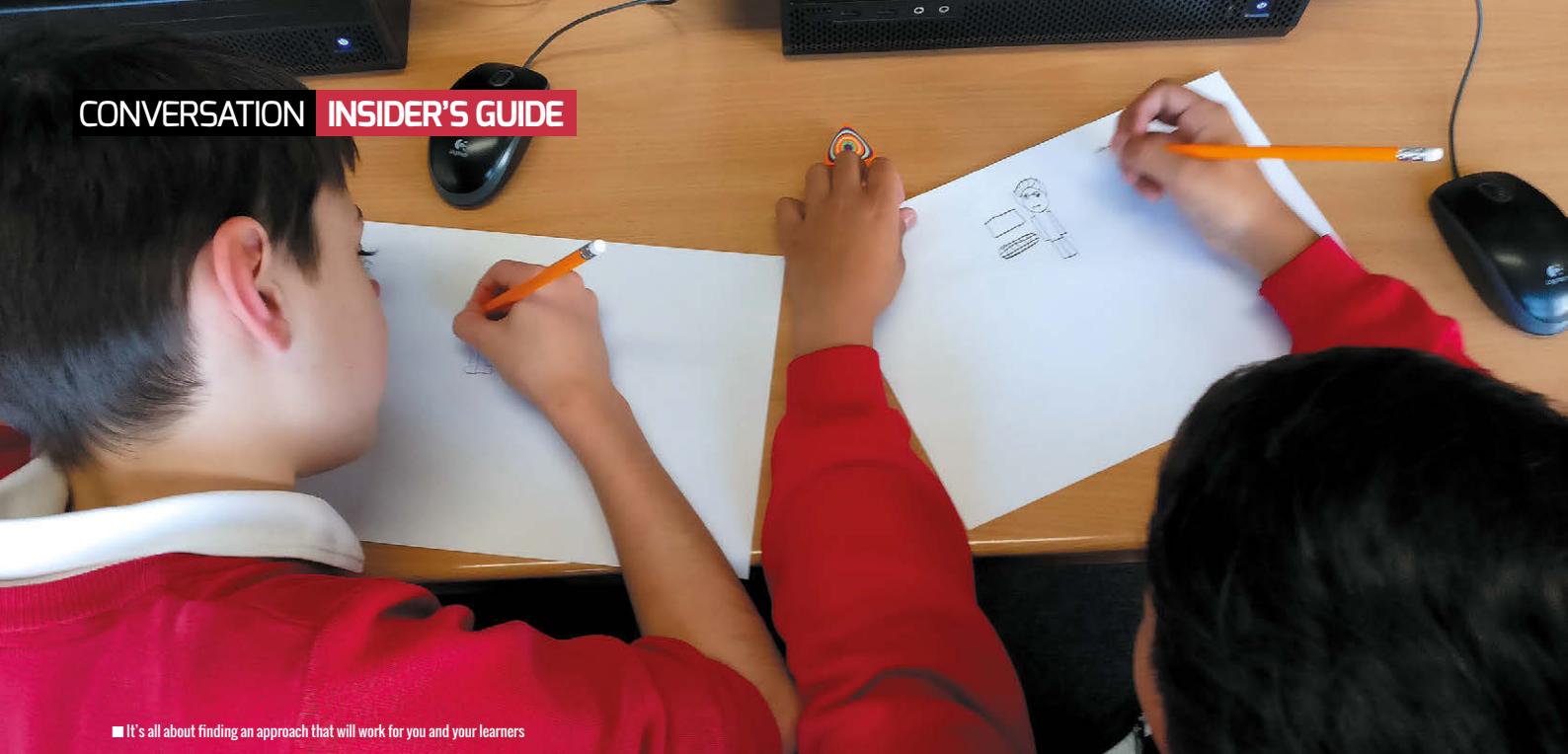
■ It's all about finding an approach that will work for you and your learners

students, who love the rewards of achieving high scores in tests. However, this creates a dangerous, false sense of success in which students have only learnt the answers to the tests by rote, and this learning does not convert to the same success in an exam that is designed to assess their understanding. If you are using one of these systems, take steps to prevent your students from repeating the quizzes too many times. It's best not to use a particular question or quiz more than three times a year.

Recommended strategies

In this article, we are recommending four strategies to consider.

Multiple choice quizzes (MCQs): Instant quantitative results

Multiple choice quizzes should be a prominent feature of assessment in all Computing classrooms. Computer-marked assessments provide teachers and learners with a rapid means of achieving instant quantitative results that can be used to inform learners of their progress and provide data to help teachers diagnose gaps in understanding. It's important that the same questions are used before a period of study as well as after. There is an initial time investment in importing or creating the quizzes, but once they are set up, the software automates the assessment. If these are used regularly, over time they will help paint a picture of the learning landscape in your classroom.

Exam-style assessments

These are short, one-page exams lasting just ten minutes, presented in the style of an exam paper every four lessons, with a variety of questions worth one, two, four, and nine marks, to be completed either in exercise books or on paper. After the time has elapsed, students swap papers and mark them in class under the direction and supervision of the teacher, who then collects the papers for moderation. These give the students a more objective form of assessment in an exam-style experience; while these are not as easy to administer or assess as MCQs, they do provide valuable data that feeds into the assessment of learning.

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Attitude assessments

Every week, students are prescribed a set topic to study out of class. This is described in depth in the 'No Headaches Homework' article in Hello World issue 8. Students are expected to provide evidence of their studies in an agreed format every week, and this is graded out of five. If the teacher collects the books for grading every two weeks, it's possible to assess both pieces of work from a single class in less than 30 minutes. Over time, this generates another set of numeric data that teachers can use to inform their assessment judgements. As well as providing a rich programme of learning out of class, this strategy provides teachers with some valuable data about students' attitudes to learning.

Markbook

This is a subjective assessment that has the benefit of providing long-term data. At a convenient point during each lesson, take two minutes to scan the class and put a mark against each pupil's name:

- 0 means absent
- 1 means present but with little effort or achievement
- + means meeting expectations (whether it be for the pupil, class, or year group)
- * means exceeding expectations

Handwritten entries are easy to change: in this system, a '1' becomes a '+' by adding an extra line; a '+' becomes a '*' by adding an extra two lines.

In this strategy, we make professional judgements based on what we see, but importantly, these judgements are tempered with what

Aim to make the assessments you choose a habit, so that you rarely need to give them any further thought

we know about the individual learners, the task being undertaken, and the context of the lesson. This is a classic 'assessment without levels' approach. All judgements are made relative to that pupil, in that class, at that point in time.

The record reveals trends over time, both for the class and individuals, reveals topics that are not doing well, and, importantly, provides a good aide-memoire or baseline when the next stage of reporting takes place.

Assessment records in the form of spreadsheets or forms can be used for professional-looking communication with the subject lead or senior management.

Make assessment a habit

We have suggested four tried and tested strategies that you could use in your own teaching. Each of them can work very well in isolation, so you could start by introducing one of them into your teaching and concentrate on making it work for you before you begin trialling any of the others.

Whatever approaches you choose to use for assessment, aim to arrive at a position where the assessments become a habit, so that you rarely need to...

- Give the processes further thought;
- Provide additional time and/or effort; or
- Reintroduce the system to the learners

For more free, friendly advice about assessing Computing, contact the authors of this guide, Alan O'Donohoe, alan@exa.foundation, and John Woollard, John.Woollard@computingatschool.org.uk. (HW)

CS Teacher	04-Sep Intro to Python	11-Sep loops(1)	18-Sep hardware (inputs)	25-Sep etc.
Abigail	❘			
Addison	◯			
Alyssa	❘			
Ava	✛			
Benjamin	✳			
Chloe	◯			
David	❘			
Ella	✳			
Emily	✕			
Emma	✛			
Ethan				

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