



**DIGITAL
SCHOOLHOUSE**
together with



Digital Schoolhouse: Measuring the programme's impact

2018 - 2019

ukie



PlayStation.

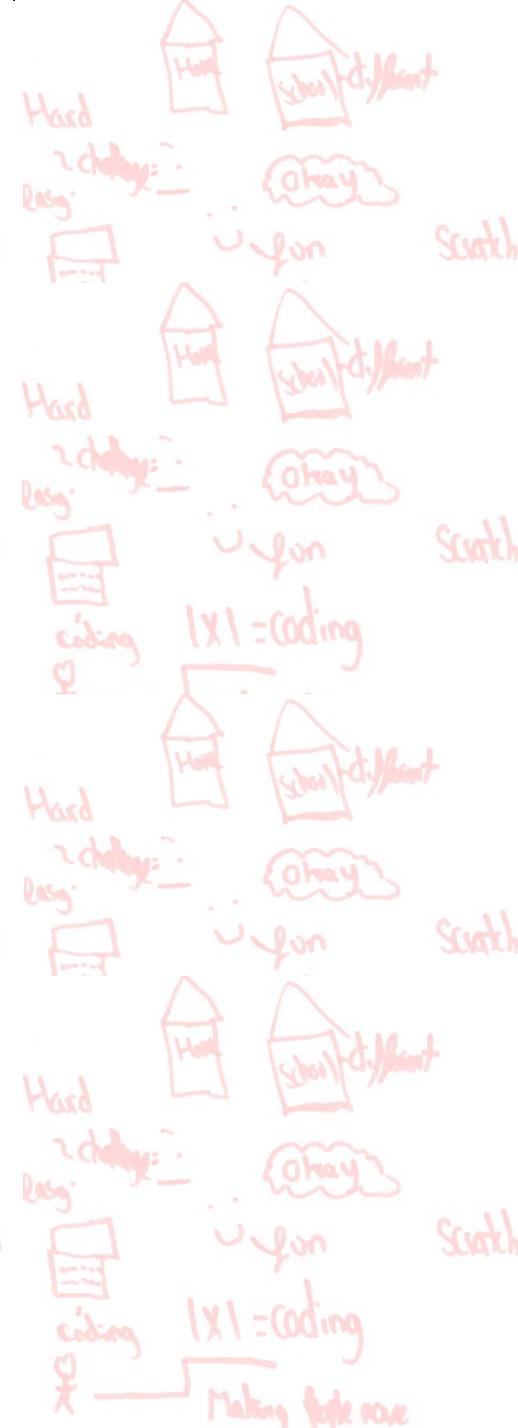
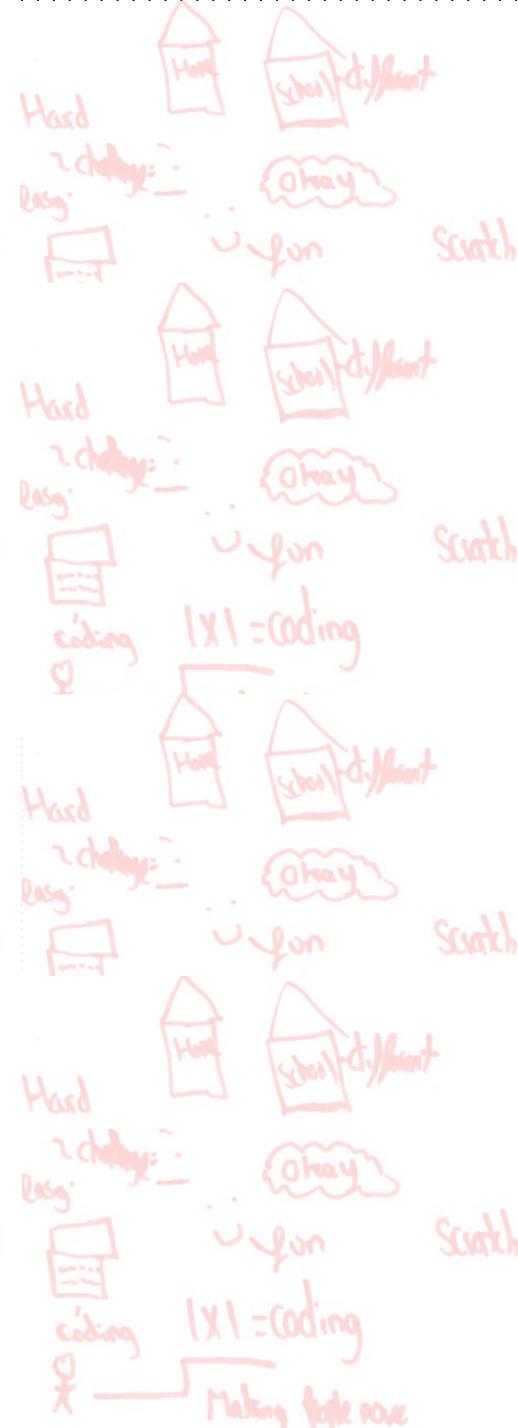
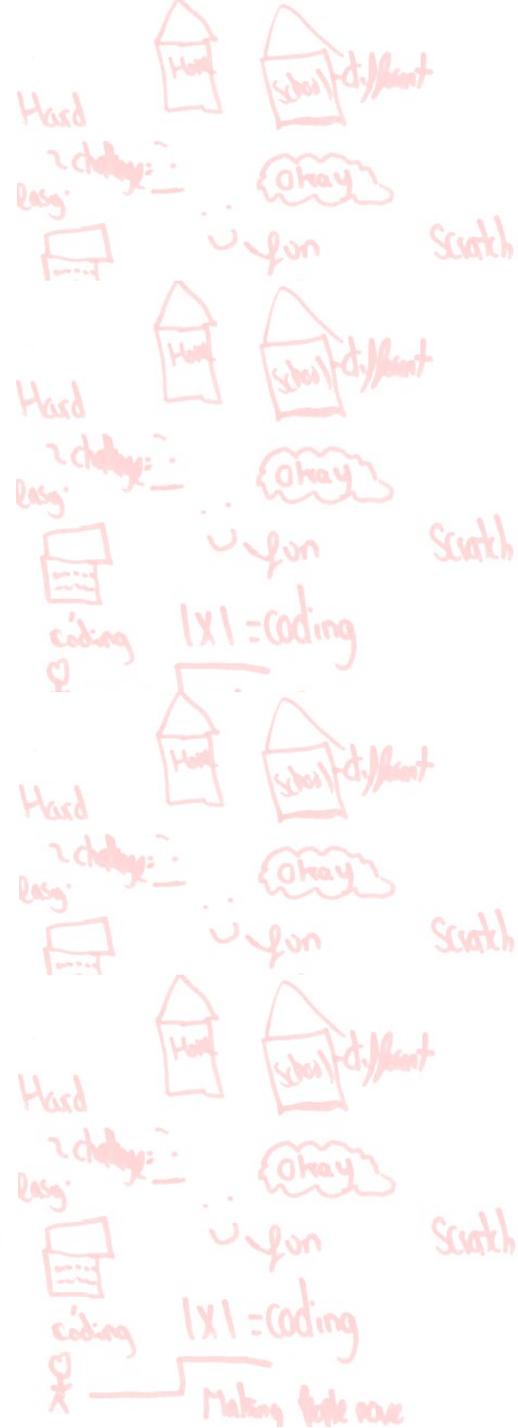
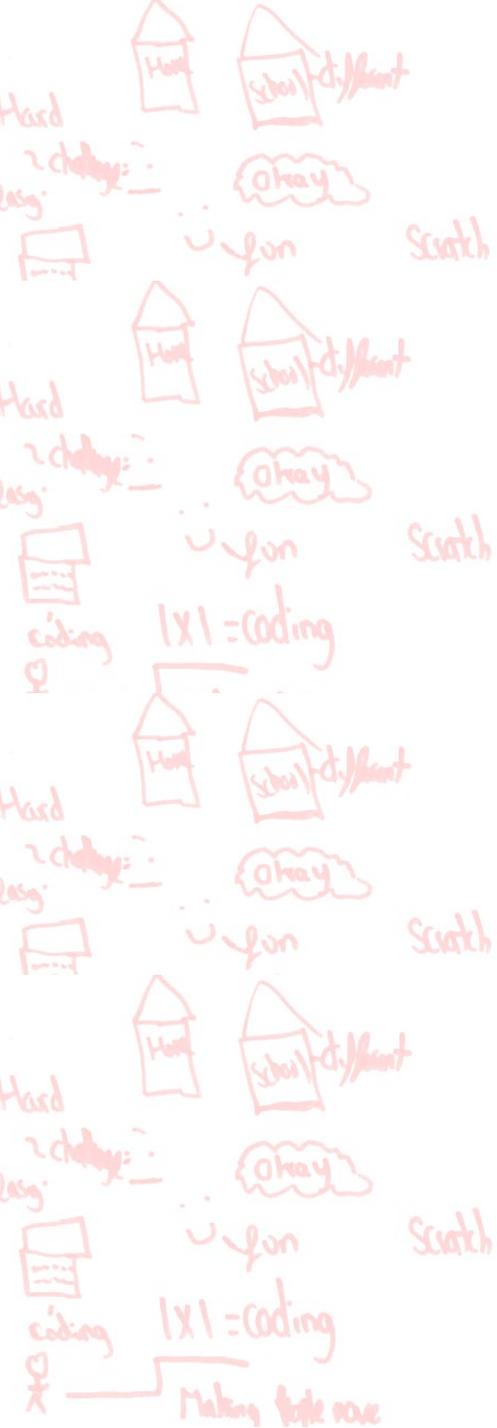
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About Digital Schoolhouse.

Digital Schoolhouse together with Nintendo UK, uses play-based learning to engage the next generation of pupils and teachers with the Computing curriculum. Digital Schoolhouse is delivered by the UK games industry trade body Ukie and is supported by the Department of Digital, Culture, Media and Sport (DCMS).

Ukie (UK Interactive Entertainment) is the trade body for the UK's games and interactive entertainment industry.

A not-for-profit, it represents over 450 businesses working across the games economy including small independent businesses, large multinational companies, service companies and charities.

Ukie also runs or supports a number of initiatives that aim to boost the UK games industry such as the Digital Schoolhouse (DSH) education programme, parental information site askaboutgames.com and Games London (created in partnership with Film London)

The logo for Ukie, consisting of the word "ukie" in a bold, lowercase, sans-serif font.

**DIGITAL
SCHOOLHOUSE**
together with



About this report.

Research aims

The research looks to understand the impact of the Digital Schoolhouse programme in the school year 2018 - 2019. Specifically, it sets out how far the programme is having an impact on pupils, teachers and whole schools that are involved in the programme.

It also looks to identify and recommend areas in which to improve the programme going forwards into the next school year.

This report sets out the findings that Digital Schoolhouse commissioned from EdComs, a consultancy specialising in children and young people, in 2019.

Measuring the impact of the programme.



Case studies

We conducted four case study visits to Digital Schoolhouse schools in England (3) and Northern Ireland (1).

Within these case study visits we conducted focus groups with, visiting school pupils and lead school pupils who were engaged with the programme as a visiting school.

We also conducted in-depth interviews with lead teacher & supporting teachers within the lead Visiting teachers.

Surveys

This report also reflects data collected by Ukie and analyses a survey among visiting school pupils both before a Digital Schoolhouse workshop, and immediately after.

In addition, we analysed data from a lead teacher survey after they had engaged with the programme.

Please note that base sizes within this sample are small and findings should be taken as indicative.

Key findings.





96% of lead teachers feel that the programme met or exceeded their expectations.

Lead teachers value the insight they gain from being in a primary school setting. The programme helped them to understand KS2 curriculum and eventually enabled them to develop their KS3 content more accordingly.

74% of teachers feel their school profile has been raised within the local community due to being part of Digital Schoolhouse. Lead teachers also value the programme for raising the profile of their school and helping to build links with feeder schools.

70% of lead teachers believe being part of the Digital Schoolhouse programme has had a highly positive impact on their teaching style and pedagogy. The workshops enable teachers to be more creative when teaching computing, and most go on and use Digital Schoolhouse workshop materials in their KS3 lessons.



There is an indication that being part of the programme has a positive affect on pupils, and may help to lessen the gender gap within the subject.

99% of visiting school pupils feel more prepared for secondary school after a Digital Schoolhouse workshop.

Survey results show a difference between male and female pupils' understanding of and confidence in computing prior to taking part in workshops. Post workshop data shows more similar results across male and female students. Though the gender gap still remains, and there is potential to understand how to lessen this further.

Pupils find the programme engaging and enjoyable to take part. The programme had a positive impact on pupils understanding of computing and their confidence in this area with

98% of visiting school pupils surveyed reporting feeling more confident in computing

after having been involved in a Digital Schoolhouse workshop.



Visiting Primary school teachers can benefit from an increase in confidence and learning new teaching skills.

Visiting Primary school teachers find the programme beneficial as it enables training opportunities without impacting on workload or disrupting a school day.

Visiting Primary school teachers also typically value the access to more advanced technology and a full computer suite as a result of being part of the Digital Schoolhouse programme.

There is opportunity for the programme to build on this positivity to support Visiting Primary school teachers to deliver long-term impact. There are Digital Schoolhouse resources available to support them with this and communicating this further to schools alongside additional support could drive the **long-term impact of the programme.**

Attitudes
to computing
prior to engagement
with the
Digital Schoolhouse
programme.

Prior to engaging in the programme, visiting teachers can find teaching computing a challenge.



“We are a smaller school here, so we have limited ICT resources. There are computers, but they some are better than the others”

Visiting schoolteacher

“Coding has always been an area where even as an ICT team leader I don't find it easy at all”

Visiting schoolteacher

Some visiting teachers we spoke to as part of this research can find it challenging to teach computing.

They are a few factors which have the potential to impact on this:

Limited support

Computing can be a lower priority than core subjects

Limited equipment

Access to computers in primary schools can be limited and often unreliable

Limited time

Teachers can be very time poor and may not have time to do more

Limited confidence

There can be a fear that pupils will know more than teachers

Prior to engaging in the programme, lead teachers can find it difficult to support pupils' transition from Primary to Secondary.

“We had no idea [what they were doing in Primary] before. We wanted to see what they were doing then start teaching from a position that they came in at”

Lead teacher

“I wanted to get into the primary schools to see what they were doing so we knew what sort of software they were using, what skill levels they had, to try and prep them in terms of coming up to us”

Lead teacher

Secondary computing leads can struggle to know how best to support the transition from primary to secondary without understanding what's being taught in primary in the first instance

They note finding it hard to bridge the gap and know the best way to teach computing to this level, meaning students can fall behind and lose interest early on

Teachers try to overcome these issues and set-up meetings with primary schools but due to time pressures on both sides and without clear benefits for both schools, nothing is resolved.

Prior to a Digital Schoolhouse workshop, **confidence in using algorithms and programming** are generally low, however, pupils feel they can be creative with technology.

Before a Digital Schoolhouse workshop, pupils level of confidence in programming is low with **58% saying they are either a little bit confident or not confident at all in programming.**

A similar trend is also present with the ability to use algorithms. **Over half (51%) are either not at all able or only a little bit able to use algorithms**

Despite reported lack of ability or confidence in use of algorithms or programming, pupils feel they can be creative with technology with **71% saying they are a lot or completely able to get creative with technology.**

Before taking part in a Digital Schoolhouse workshop...



■ Not all ■ A little bit ■ A lot ■ Completely

Prior to the Digital Schoolhouse programme **pupils level of understanding** on how computers work, communications and networks and using hardware is relatively high.



■ Not all ■ A little bit ■ A lot ■ Completely

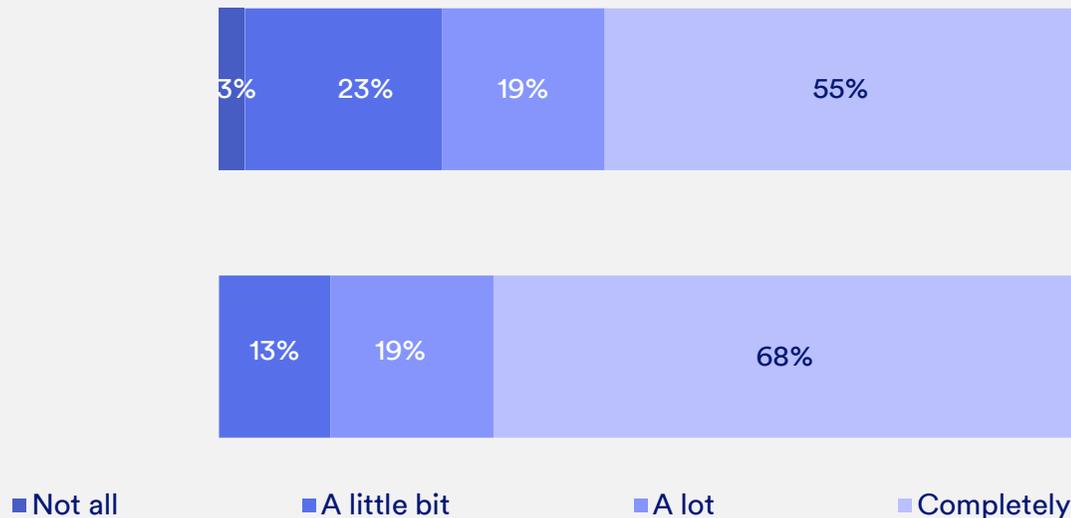
Q7. Before taking part in the Digital Schoolhouse...Pre (39) Base: all pupils pre (39)

Generally pupils think that they understand how computers work with over half saying that they think they completely understand it.

Compared to confidence in use of algorithm and programming, a higher proportion of pupils reported feeling completely confident (39%) about using hardware and understanding communications and networks.

Even though the proportion of those who said not at all is relatively small, just under 1 in 5 (19%) have a little bit of understanding of how computers work, 1 in 3 (32%) have a little bit or not at all confidence about using computer hardware and 3 in 10 (29%) have low level of understanding of communications and networks.

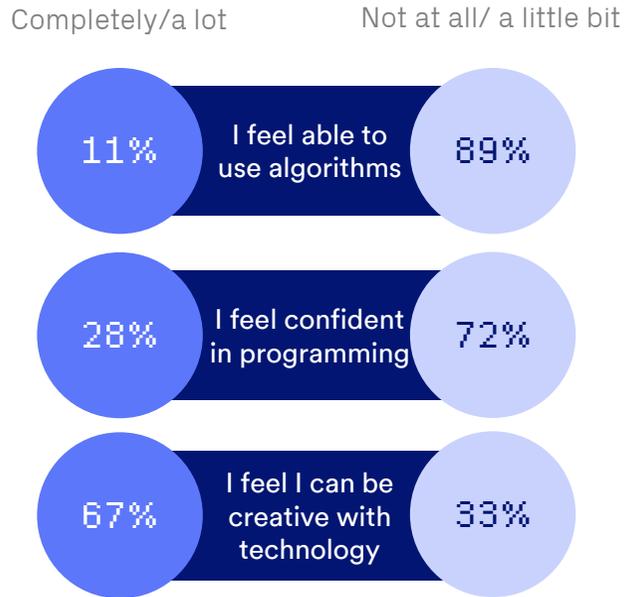
Prior to a Digital schoolhouse workshop pupils reported a high level of **confidence and knowledge on staying safe online** and knowing what to do if they face an issue.



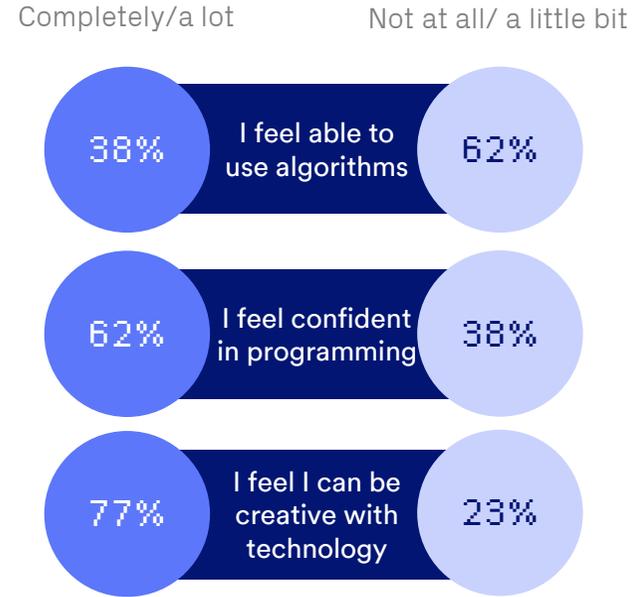
Almost 9 in 10 pupils say they completely know or know a lot about what to do if something bothers them online.

Even though high proportion of pupils reported **higher levels of confidence about staying safe online** (55% completely and 19% a lot), there is a quarter (26%) of the students who did not have much confidence about it.

Female pupils



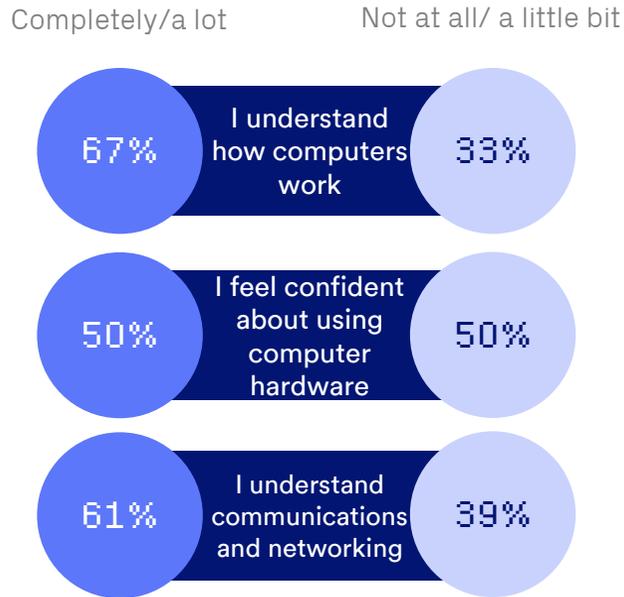
Male pupils



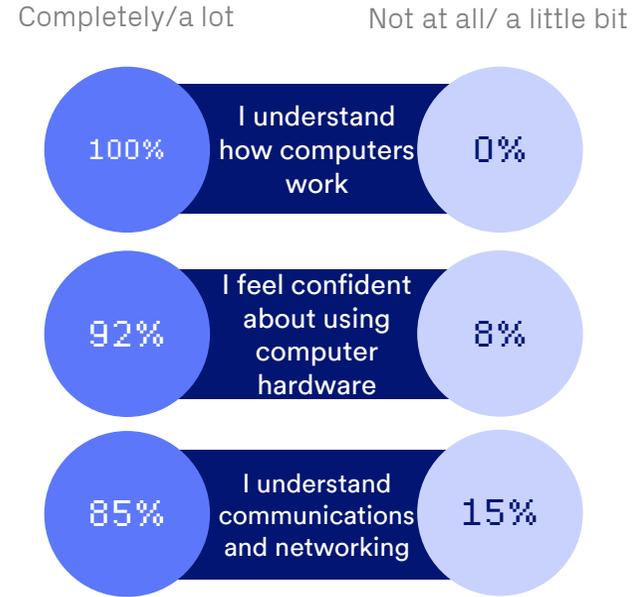
Q7. Before taking part in the Digital Schoolhouse...Pre (39) Base: all pupils pre (39)

Before taking part in the programme there is a difference between male and female pupils, particularly in **confidence with algorithms and programming**.

Female pupils



Male pupils



Q7. Before taking part in the Digital Schoolhouse...Pre (39) Base: all pupils pre (39)

Before taking part in the programme, there is a gap between male and female pupils in terms of **understanding of computers, hardware and communications and networks.**

Female pupils



Male pupils



Q7. Before taking part in the Digital Schoolhouse...Pre (39) Base: all pupils pre (39)

Even though a higher proportion of female pupils report feeling **confident about staying safe online** and knowing what to do if something bothers them, **the gender gap is still present.**

Expectations of the Digital Schoolhouse programme.



Qualitative findings demonstrate three key motivations for Digital Schoolhouses to become engaged in the programme.

Needs of lead teachers

KS3 students aren't at the level I would expect when they begin secondary school

Computing isn't always a priority in my school

I can find it challenging to think of fun and exiting ways to teach computing

I don't know the best way to engage my KS3 students

These needs directly feed into their motivation for joining the programme

1

SUPPORT

To help primary schools to teach computer science effectively and gain insight into KS2 lessons

2

PROFILE

To boost the schools profile and links with feeder schools

3

INSPIRATION

To learn how to be more creative with computer science through workshops and links with industry

“It’s quite fun, I thought it would be useful for my secondary students to have a different way of learning too”

Lead teacher

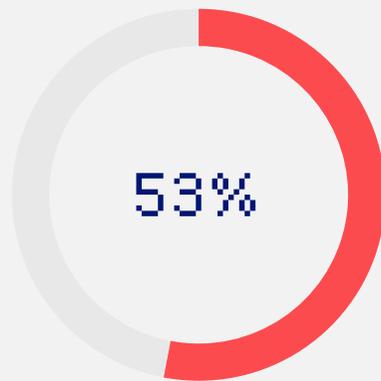


“[my expectations of the programme were to] Promote potential school with feeder schools”

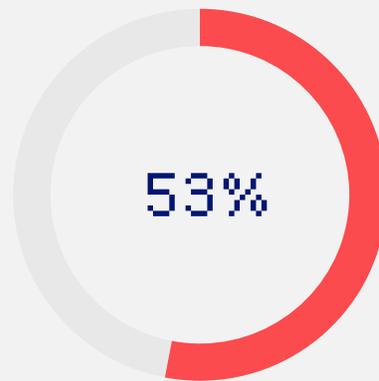
Lead teacher

Lead teachers expect the Digital Schoolhouse programme to impact on their **personal development of teaching style**.

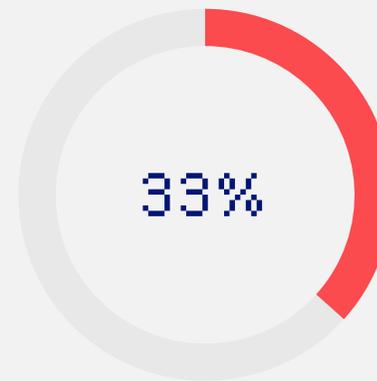
Original expectations of the programme:



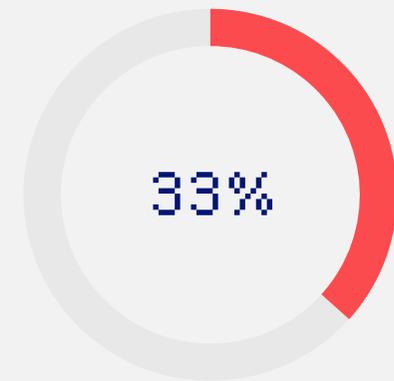
Help me improve my teaching and understanding of computing



To be more creative/innovative in the classroom



Make computing more attractive as an option to students in my school



Understand my future school intake better so I can create a more suitable KS3 curriculum



I wanted to learn more creative approach to teaching computing and my goal has been met. I have managed to incorporate many ideas raised by my colleagues during Ingenuity days into my KS3 curriculum.

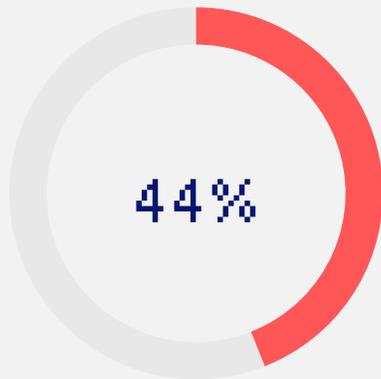


Lead teacher

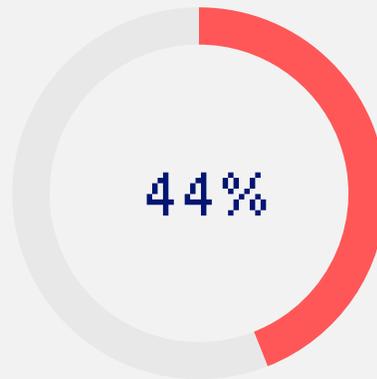


Despite an expectation for personal development; more teachers expect the **schools profile to be raised** than their own.

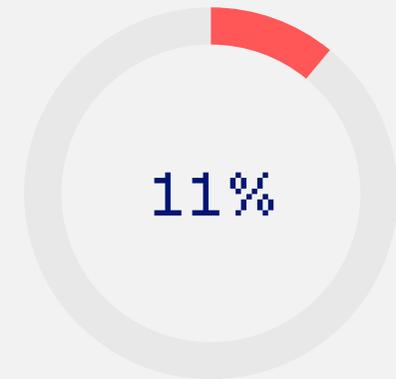
Original expectations of the programme:



Create links with
industry



Raise my school profile



Raise my profile



[my expectation was that DSH would] help support schools around the region and **teach art-based creative industry practices.**



Lead teacher

Qualitative findings demonstrate visiting schools expect extra support in the delivery of computing in schools.

Needs of visiting Primary school teachers

I have no time to learn computing

I don't know how to be more creative or innovative with my computing lessons

I don't have access to the advanced technology needed to teach computing

Computers at my school

These needs directly feed into their motivation for joining the programme

1

EFFICIENCY

To gain support within class time, and gain from a CPD opportunity

2

INNOVATION

To understand more innovative teaching techniques and use advanced technology such as micro-bits

3

ACCESS

Flexibility of non-computer based computing lessons enables teachers to continue learnings in the classroom

“I thought it’d be great to have some extra help and also to engage the children more in the subject”

Visiting schoolteacher

“We struggle so much with the computers we have here, they have a full ICT suite we can access so I thought why not?”

Visiting schoolteacher

What does this mean for the programme?



Visiting and lead teacher's expectations of being part of the programme align with its current objectives



They are aware of the benefits at both a personal and whole school level and understand there is opportunity for links with industry and a greater school profile from the programme



There is opportunity to develop teachers awareness of being able to promote their own profile as part of the programme



There is opportunity to communicate the potential to diversify computing uptake in schools

Whilst the programme is communicating objectives clearly and as such positively setting expectations; there is opportunity for more consistency across the programmes objective. This will not only help to ensure current lead and visiting teachers clearly understand the benefits of the Digital Schoolhouse programme but also that prospective schools know and understand its benefits too.

Delivery of the programme.



Each Digital Schoolhouse may deliver the programme in a different way.

Initial engagement with Digital Schoolhouse

Email an invite to join DSH to primary schools

or

Discuss with school clusters; incorporate DSH with transition visits

Liaise with visiting schools to organise school visits

or

Use a rota from a primary partnership of when schools are coming

Lead teacher delivers lesson, visiting teacher has free time

or

Lead school students deliver lesson, lead teacher supports

or

Lead teacher delivers lesson, visiting teacher supports

Follow up session the next day

or

Follow up on a weekly basis

or

Follow up on a termly basis

or

Follow up on an annual basis



Examples of delivery of the programme

Lead teachers like workshops that provide creative techniques and fun methods of learning computing.

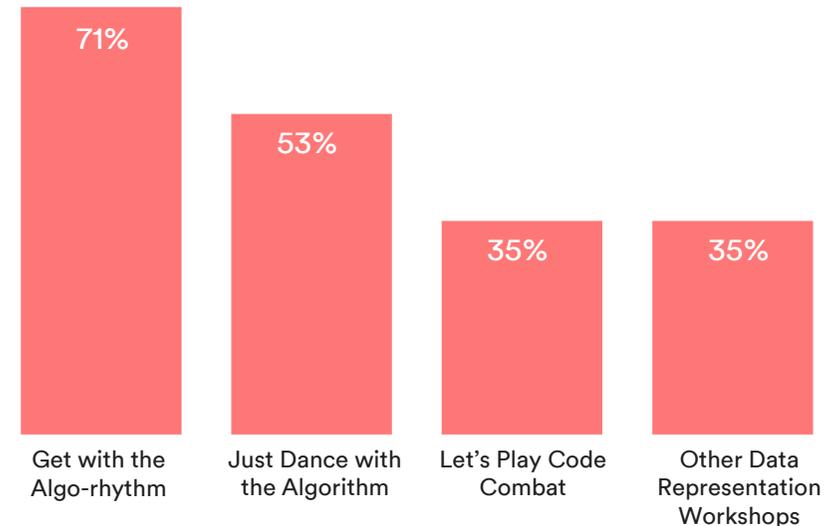
Qualitative analysis shows that programming and coding can be difficult for visiting schools to teach.

'Get with the Algo-rhythm' and 'Just Dance with the Algorithm' are popular because of their creative and fun ways of teaching programming.

In these lessons pupils can learn about programming and computer concepts without realising they are doing so, through a programming environment called Scratch

This can then help boost visiting teachers confidence and ability to teach programming or coding.

Workshops most commonly used by lead teachers





I think as soon as you mention 'programming' they're like, 'We don't know how to do that, can you please come in?' I've done some Micro:bit workshops with some primaries, and they're really interested because **they can't afford to buy Micro:bit, so I've got a class set I can take to them.**



Lead teacher



Qualitative findings demonstrate three key motivations for Digital Schoolhouses to become engaged in the programme.

Challenges lead teachers can face

It can be difficult to keep up with school correspondence
Emailing multiple schools can be time consuming

Recommended solutions

Affective use of the Digital Schoolhouse dashboard, helps teachers to keep track of correspondence

It can be difficult to prepare affectively for the workshop
Teachers aren't always aware of specific needs - i.e. SEND students prior to a visit

Adapting the dashboard to incorporate more detailed pupil information may be an efficient way to manage this

It can be difficult to fit in the evaluation of the workshops
A pre and post survey in workshops can take up a lot of teaching time

A retrospective post survey has potential to be a valuable method of evaluation which takes less time

The Digital Schoolhouse programme is typically flexible to individual school needs.

However, this flexibility in delivery can mean some teachers face some challenges during its delivery.

“I guess they [Primary schools] just aren't at their desks as much as we are so they don't seem to reply to emails in the same way I would. I have them on my phone so I can see at any point but I don't think that's true in Primary schools”

Lead teacher

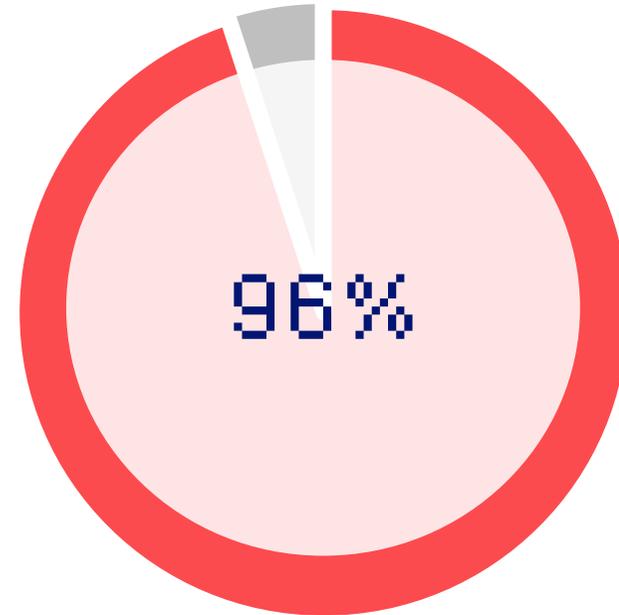
“Then they [Primary schools] change it sometimes as well. You turn up expecting laptops and they've got iPads, which is why we try and restrict the workshops we do, because we need to try and keep it generic, something that can be done on any device”

Lead teacher

Despite these challenges, **Digital Schoolhouse** is successful in meeting expectations and **gains overwhelmingly positive feedback.**

Case study visits support this, and highlighted the below benefits of the programme:

- Finding more creative and engaging ways to teach computer science
- Helping to build and grow industry links
- Understand visiting schools better



...of lead teachers felt that the programme had completely met or exceeded their expectations

“Digital Schoolhouse has brought us into contact with some of the best practitioners in teaching IT from across the UK. The level of training and sharing of good practice they have introduced me to is simply unrivalled by any other organisation I have encountered”

Lead teacher, survey

“DSH has been an excellent opportunity for both myself and the centre I work for to create links with other education and industry professionals. It's enabled me to create strong links between my centre and surrounding primary”

Lead teacher, survey

For **visiting schools**, the implementation of the programme is **simple and effective**.

Having the workshops during the school day means the programme is very time effective and fits nicely into their usual working hours.

Teaching computing is a requirement, so teachers are able to slot in the workshop during a time already allocated to the lesson.

Typically engaging in the programme requires **little to no additional work** for them beyond organising the date and booking an ICT suite.

For some the Digital Schoolhouse programme offers an opportunity to have some **free time within teaching hours** to catch up on marking or planning.

Whilst this doesn't cause an issue for the lead teacher nor the pupils, it does then limit the impact of the programme.

There is opportunity to consider how best to engage visiting teachers across all settings.

“We’ve been going across to the secondary school for year 5’s and 6’s anyway. So building in an ICT element of it wasn’t really that difficult”

Visiting schoolteacher

“They just emailed us and asked if we’d like to be involved. It sounded like something we could benefit from so we set up a date for them to visit, it was fairly straightforward”

Visiting schoolteacher

“Sometimes the Primary's don’t engage and you feel a little bit under-utilised. Then I have to balance that off with everything I’ve got here, and that can be quite a pain”

Visiting schoolteacher

What does this mean for the programme?



The flexibility in the delivery of the programme is well liked and should be continued



Supporting teachers to manage key challenges more, would be beneficial. For example, whilst there is a great deal of support available in the handbook and starter pack, more specific information about how to book in workshops would be useful. This should look to support:

- Communications to visiting schools
- Communication to lead teachers of the objectives they should be hitting in the workshops.



There is opportunity to learn from the way different teachers are implementing the programme, to understand if this could be a better way for programme delivery overall

Impact of the programme.



Lead teachers

Many lead teachers have a **strong sense of personal reward** from being part of the programme.

Being a lead teacher in the programme can be:

INFORMATIVE

Qualitative findings indicate that the programme helps lead teachers understand their KS3 students needs better

It also helps teachers to be more creative in their own teaching of computing, learning new skills and techniques themselves

ENGAGING

Qualitative analysis also indicates lead teachers having a sense of reward from supporting their local visiting school to teach computing efficiently.

Lead teachers can also find it enjoyable to have a change of scenery and be able to teach without the worry of exams or evaluation

Q11. Have you used Digital Schoolhouse workshops for teaching in your own lessons?: Base (27)

70% of lead teachers
went on to use the
Digital Schoolhouse
workshops in
their own lessons.

Q11. Have you used Digital Schoolhouse workshops for teaching in your own lessons?: Base (27)

Being a lead teacher in the programme can be:

INCLUSIVE

Being part of the Digital Schoolhouse network can have the following benefits:

- **Feeling part of a community** via the DSH WhatsApp group
- **Knowledge sharing:** interesting reports or research within the WhatsApp group
- **Meeting others face to face** and sharing experiences at ingenuity days

“DSH has been an **excellent opportunity to create links** with other education and industry professionals”

Lead teacher

“What's been really, really good, is we've got a WhatsApp group, and if there's something you're not sure of, like, I was looking for a scheme of work for something, and they'd got one, and passed it over, rather than writing my own thing.

We share resources and experiences”

Lead teacher

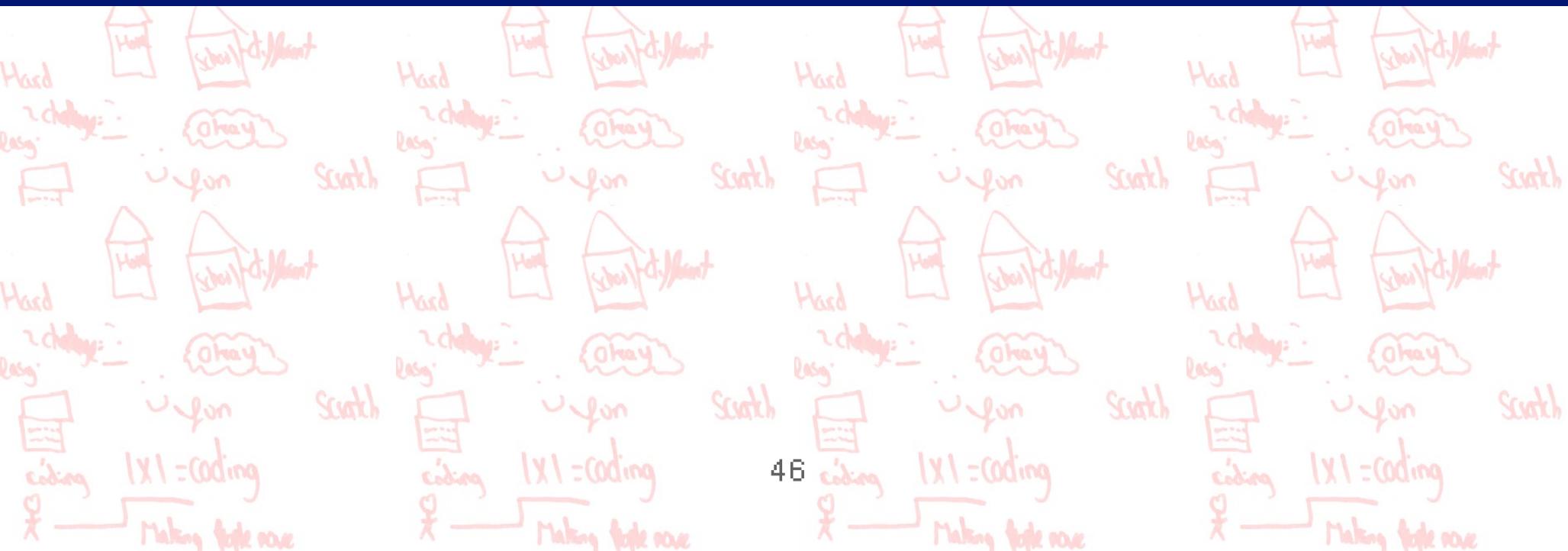
Q11. Have you used Digital Schoolhouse workshops for teaching in your own lessons?: Base (27)



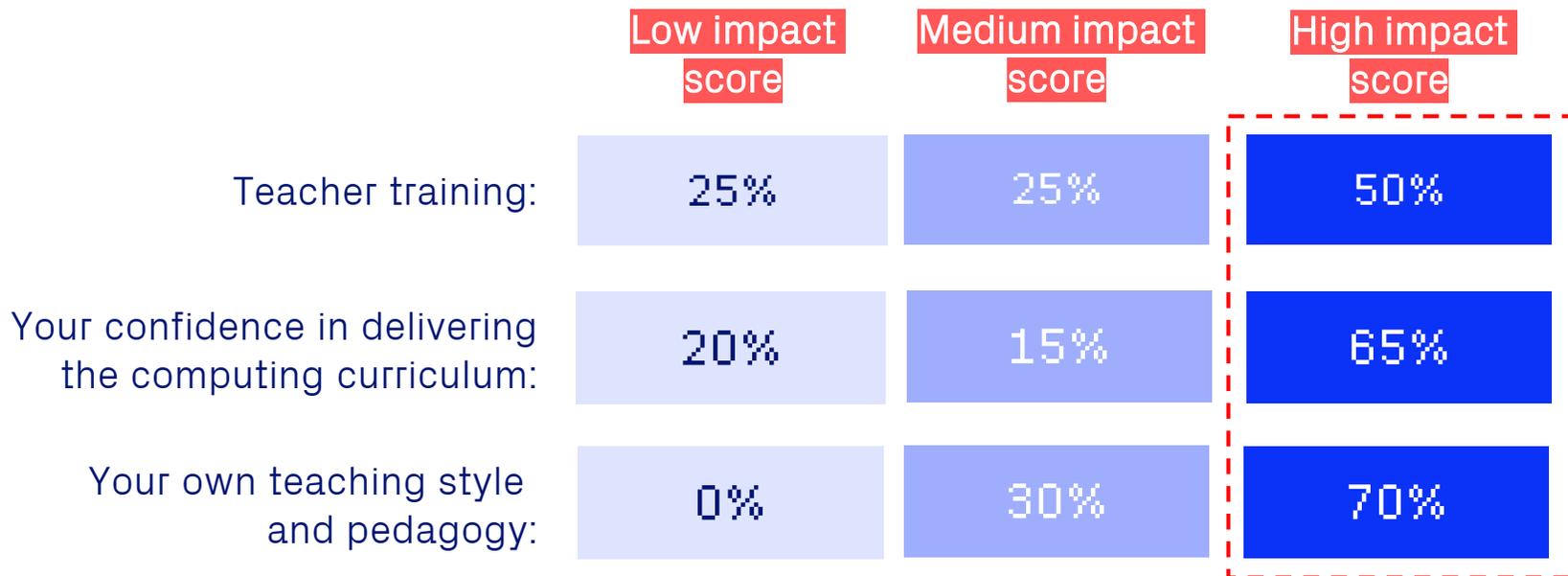
Digital Schoolhouse has brought us into contact with some of the **best practitioners in teaching** IT from across the UK. The **level of training and sharing of good practice** they have introduced me to is **unrivalled by any other organisation** I have encountered.



Lead teacher



Lead teachers believe the programme is having a **positive impact on their teaching.**



Currently 53% of teachers cited this as an expectation, as such there is opportunity to communicate this to prospective Lead teachers more.

Q24 – Q26. ow would you rate the impact of the Digital Schoolhouse on...: Base (20)

Visiting teachers can benefit from an increase in confidence and learning new teaching skills.

Qualitative findings suggests the Digital Schoolhouse programme can help to support visiting teachers with new techniques to teach computing in an easy to understand and engaging way.

The support and reassurance of the lead teacher during the workshop, enables visiting teachers to be involved at their own pace.

Some visiting teachers join in the lesson, and enjoy being on the 'other side' learning from a students perspective.

In particular visiting teachers benefit from:

- Helping to see where the gaps in their own knowledge are to gain support in their development
- Engaging with students learning in a new way
- Gaining confidence in a topic they feel less familiar with
- Helping them to understand how to make their computing lessons more relevant to KS3 and ease the transition through schools



Well, it helped me learn the skills myself, because obviously, we're not using that every day. It made me aware of how little I actually do know about it, but also, it helped us, that **what we're doing here is relevant to what they're going to be doing with coding** and things, as they go on to their next school



Lead teacher



I think, as a professional, it made me more confident. **It made me feel more confident about talking to secondary schools** about it and just having that dialogue with secondary schools. It felt more comfortable, as well



Lead teacher

Some lead teachers report the Digital Schoolhouse programme is having a long-term impact.

After the lesson, visiting teachers can still struggle to implement computing lessons. This can be because:

- They lack the time to incorporate computing into their lesson planning mid-way through a term
- They are not always aware of the digital resources on the Digital Schoolhouse website

Some schools incorporate follow ups affectively, which others could learn from:

- Lead school students visited the visiting school weekly to teach students about computing
- The lead teacher visits the visiting school the day after the workshop to run a ‘mop up’ session with teachers; focussing on how to build a computing plan

There is opportunity to heighten the impact of the programme by considering:

- Building in more follow up sessions with visiting teachers into the programme structure
- Build awareness of and motivation to access the Digital Schoolhouse resources
- Build in support networks amongst visiting teachers to share information and knowledge

“We had no idea [what they were doing in Primary] before. We wanted to see what they were doing then start teaching from a position that they came in at”

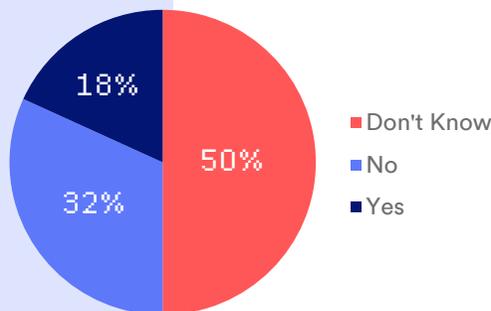
Lead teacher

“I wanted to get into the primary schools to see what they were doing so we knew what sort of software they were using, what skill levels they had, to try and prep them in terms of coming up to us”

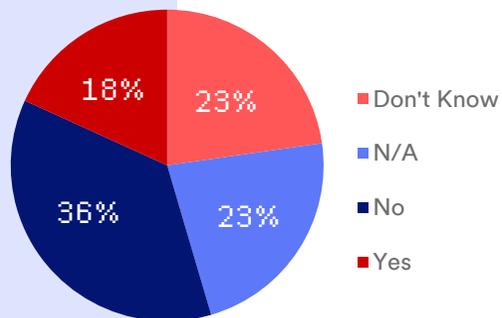
Lead teacher

Some lead teachers report the Digital Schoolhouse programme is **having a long-term impact**.

Improvement of uptake of Key Stage 4 & 5 computing courses as a result of being a part of the programme:



Improvement of uptake of computing by female students as a result of being a part of the programme:



- Some lead teachers are seeing a long-term impact of the programme. **50% of lead teachers see an improvement of uptake at KS4 and KS5**. Though the impact on female vs male lead students is less clear, this may be because this can be hard to measure
- There is opportunity for future research and evaluation to support teachers in delivering and evaluating the long-term impact of the programme

What does this mean for the programme?



Lead teachers are having a positive experience of the programme, with all lead teachers claiming to benefit from developing their teaching style



Visiting teachers are also reporting a positive impact of the programme to their teaching style and confidence

- There is opportunity to communicate this more, to demonstrate the value of the programme and encourage others to join



Lead and visiting teachers may benefit from understanding how to support each other in the long term, this could be in the form of:

- Organised meet-ups or events with both visiting and lead schools, to share learnings and grow and develop as a community
- Creation of a visiting school WhatsApp group in the local area
- Support from regional academic leads for both visiting and lead schools

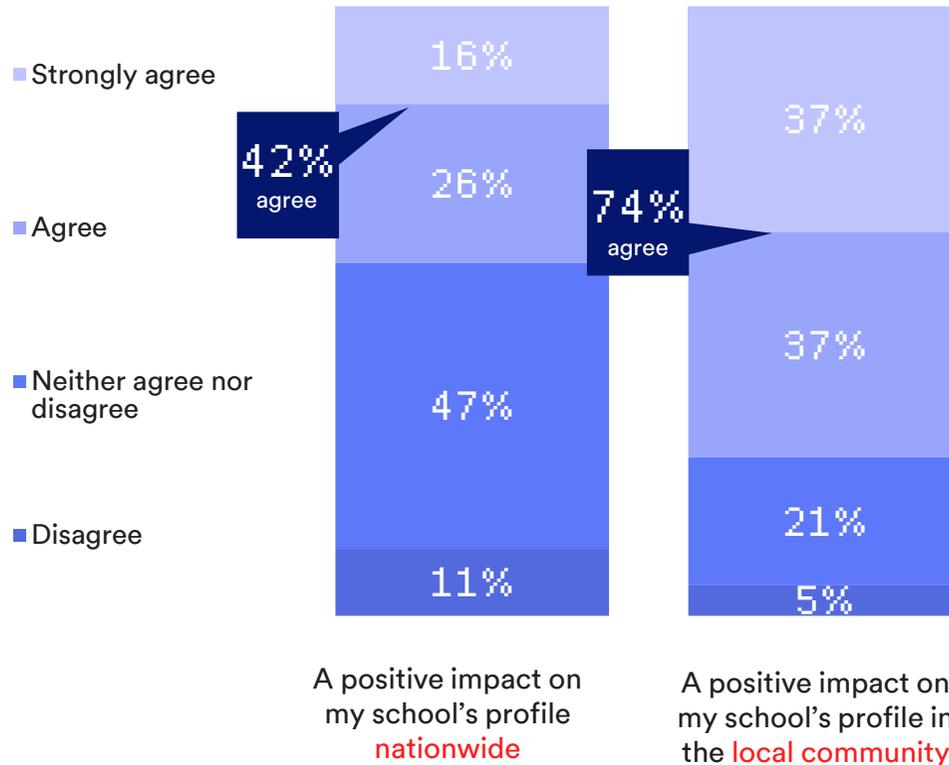
Impact of the programme.



Schools

The **whole school profile can benefit** from being part of the Digital Schoolhouse programme.

Digital Schoolhouse has...



However, qualitative results indicate they feel more could be done to drive the impact of the programme internally in a school, for example assembly ideas or all support to run staff inset day training.

Q33 – Q34. The Digital Schoolhouse has had a positive impact on...: Base (19)



It's been really great to have more connections with the feeder schools. It's meant that we have more communication generally - even outside of computing



Lead teacher



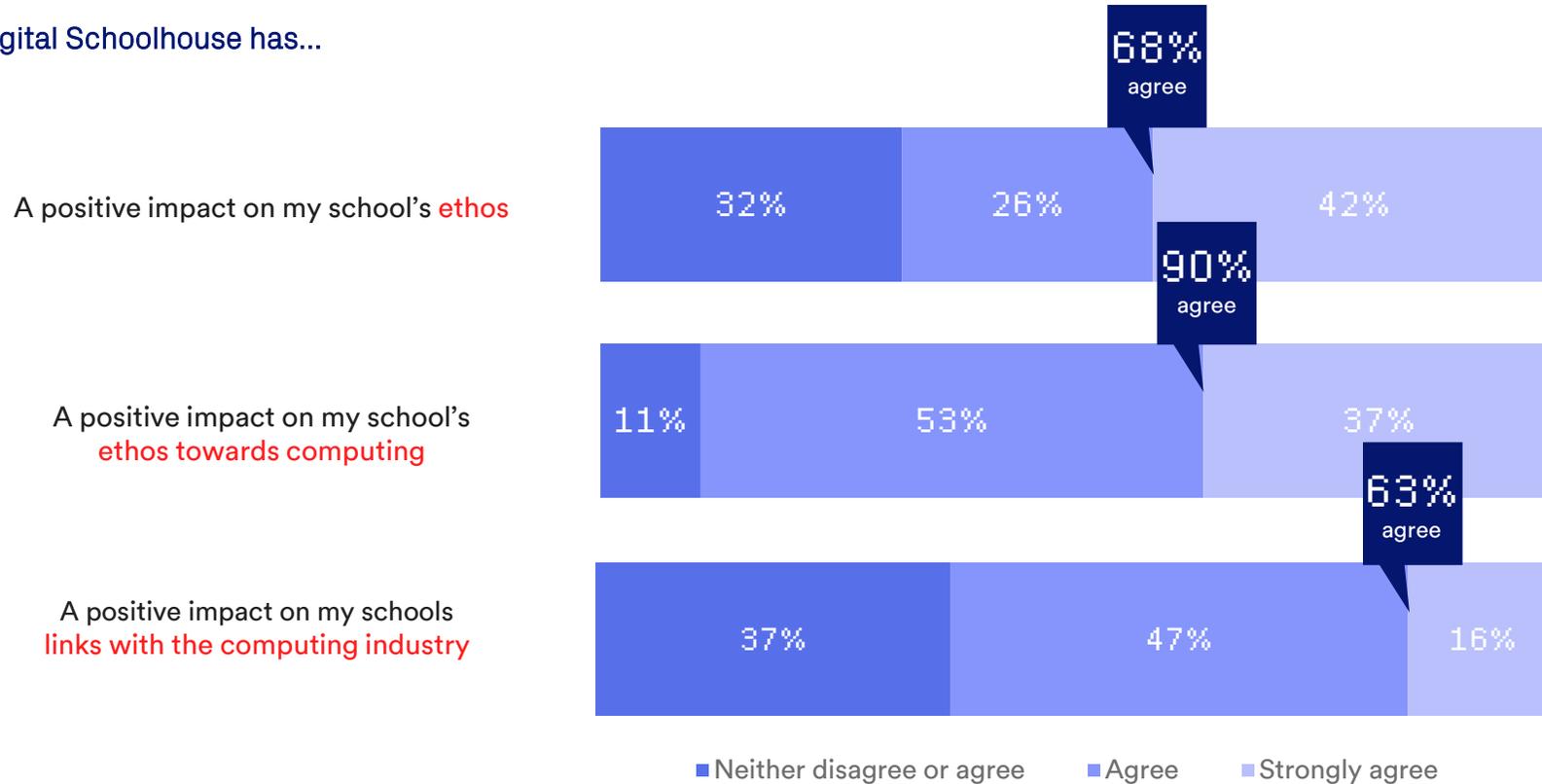
I don't really know why, I don't really talk about the games industry. But I think we can do more. I don't really put programming together with the gaming industry but actually they do go together



Lead teacher

Lead teachers can feel Digital Schoolhouse has a **positive impact across the whole school.**

Digital Schoolhouse has...



Q33 – Q34. The Digital Schoolhouse has had a positive impact on...: Base (19)

The programme has a positive impact on lead **schools'** **connections with industry**, and there is opportunity to communicate this more to prospective Digital Schoolhouses.



Creates links with industry

44% of lead teachers expect to create links with industry through the programme.

In reality, 63% of lead teachers believe that it is having a positive impact on links with the computing industry.



37% neither agree nor disagree. The qualitative results help us to understand this further; lead teachers can feel unsure what links to industry could mean for them.

There is an opportunity to explore how to best deliver on creating links with the industry and to communicate how these will be implemented into the programme.

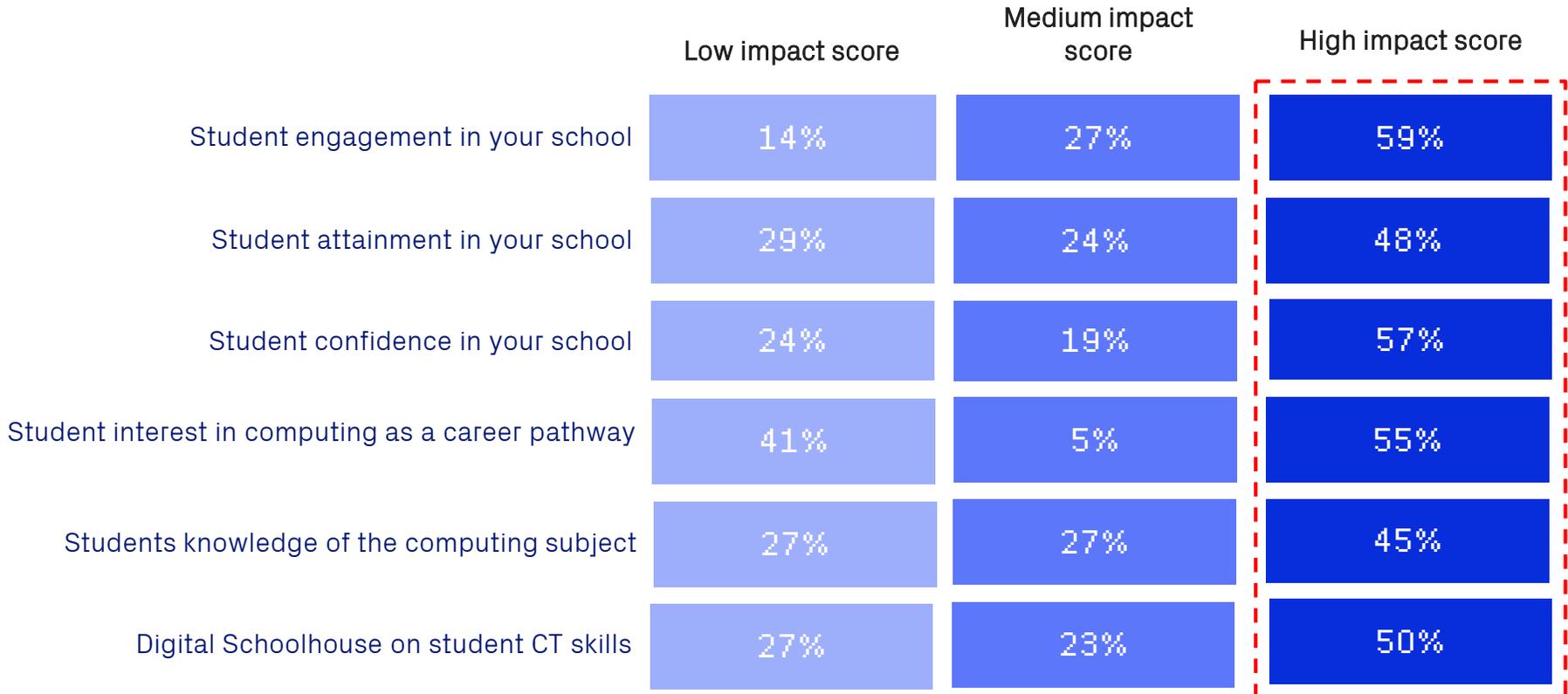
Impact of the programme.



Visiting pupils' engagement with Computing

Lead teachers typically rate the **impact of the programme on their students highly** across areas.

The impact of Digital Schoolhouse on...



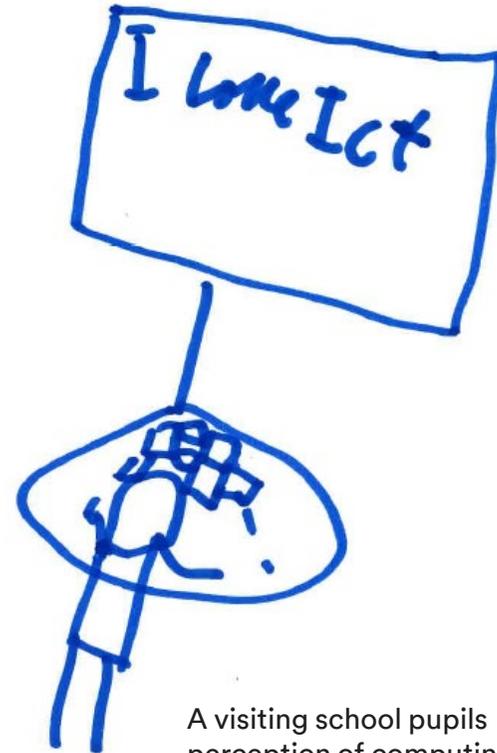
Q14 – Q20 The Digital Schoolhouse has had a positive impact on...: Base (22)

Importantly, qualitative findings suggest visiting **pupils enjoy being part of the programme.**

Visiting primary school pupils consistently state that they find the programme fun and engaging to take part in.

They like that it challenges them and gives them a creative way to learn about computer science, in turn making them more interested in computing as a whole.

The programme is memorable through to secondary school, with KS3 students able to comment on and talk about the 'fun computing programme' that they took part in in their last school.

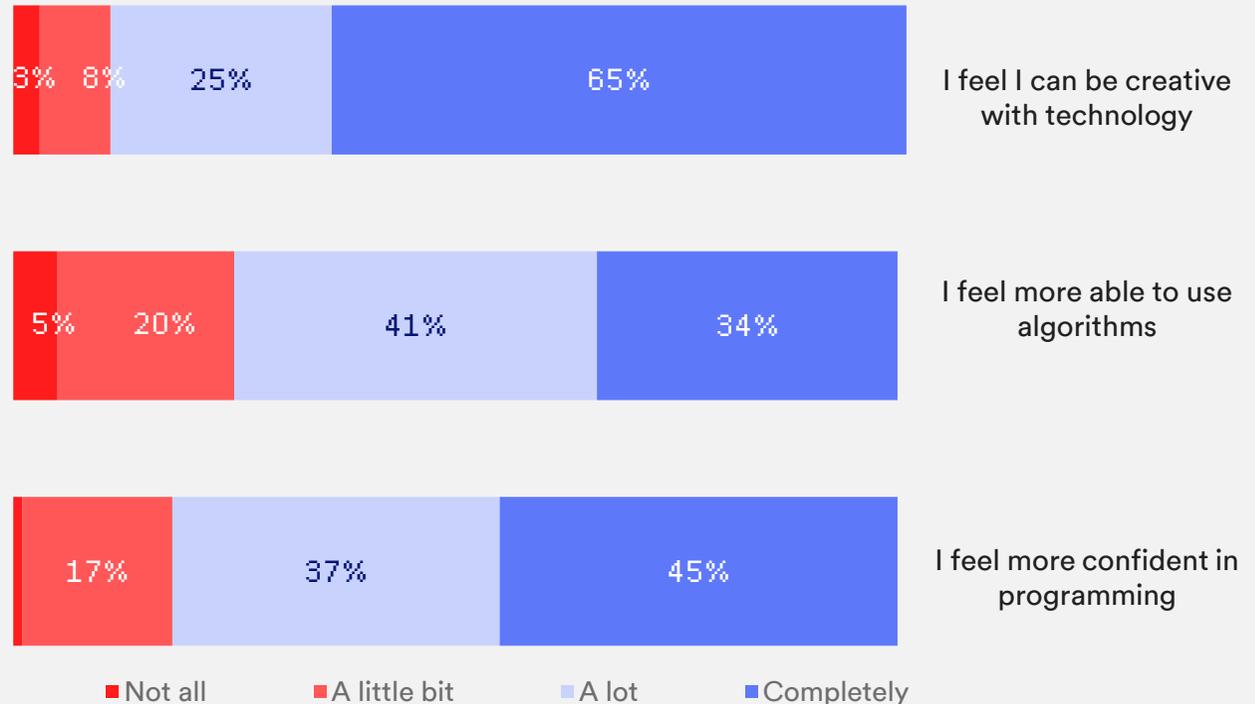


A visiting school pupils perception of computing

After Digital Schoolhouse workshop, most visiting pupils report an **increase in their confidence in programming**, ability to use algorithms and ability to be creative with technology.

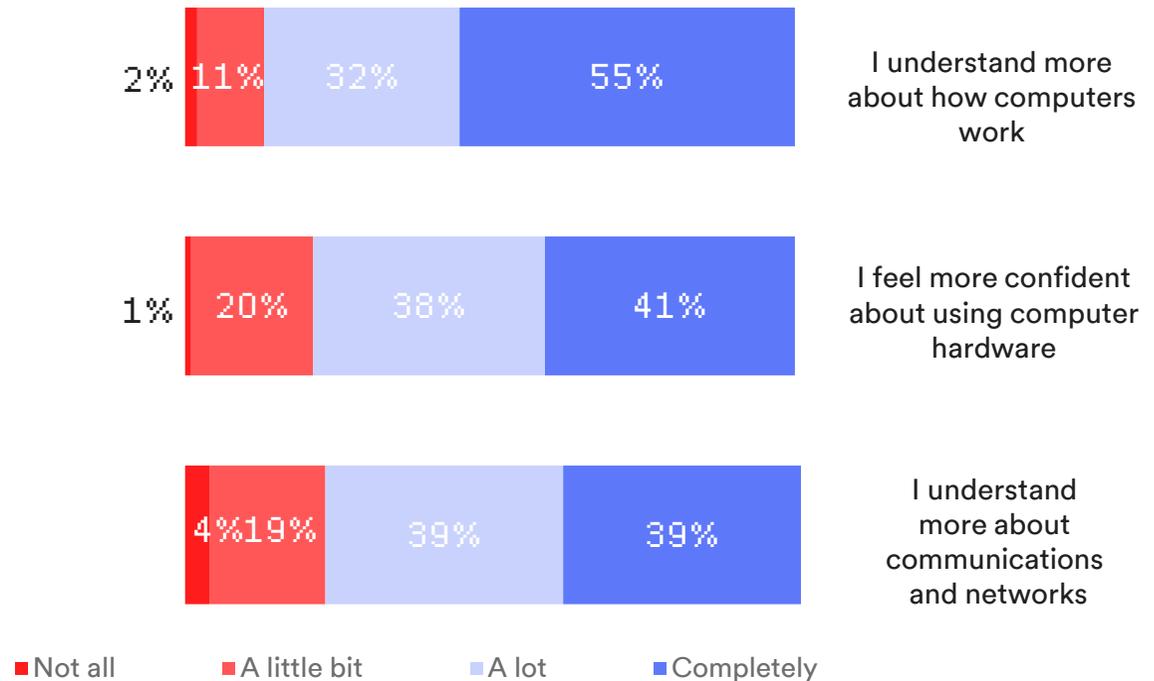
After a Digital Schoolhouse workshop the results show that almost all visiting pupils have some levels of increase in confidence and ability in terms of programming, understanding algorithms and ability to be creative with technology.

This shows that the workshop is delivering the necessary knowledge to visiting pupils although to different levels for each individual.



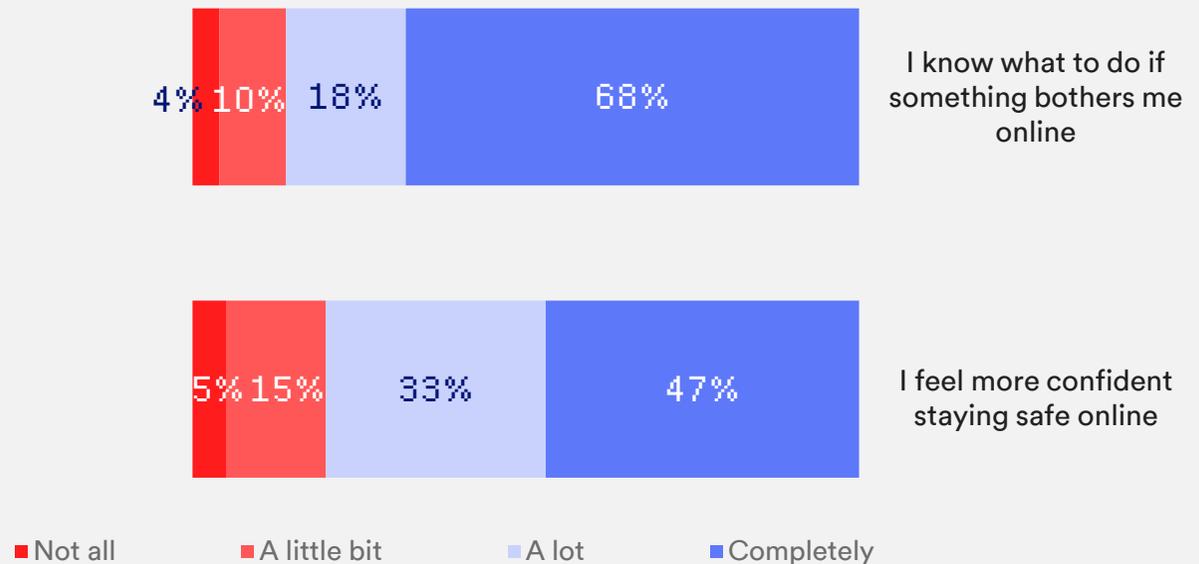
After a workshop a high proportion of visiting pupils report an **increase in understanding of communication networks**, use of computer hardware and how computer works generally.

Similar to the algorithms and programming and creativity with technology, visiting pupils report an increase in their understanding and confidence on different areas of the training they received.

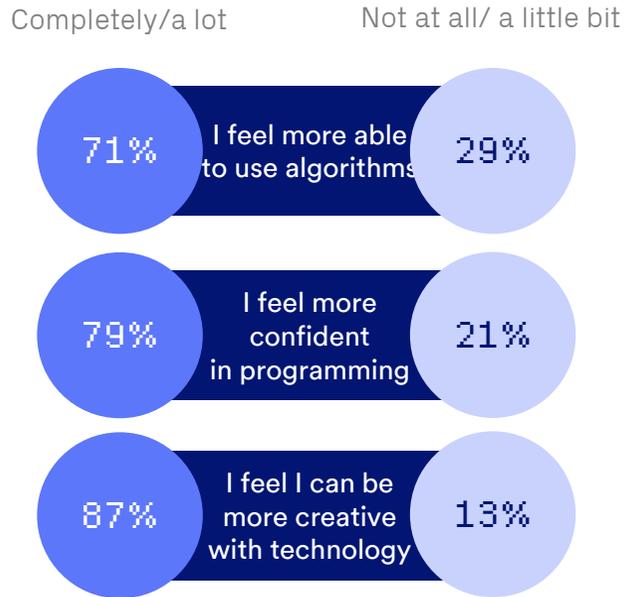


Knowledge and confidence on staying safe online and knowing what to do when something bothers pupils also increases as a result of the workshop.

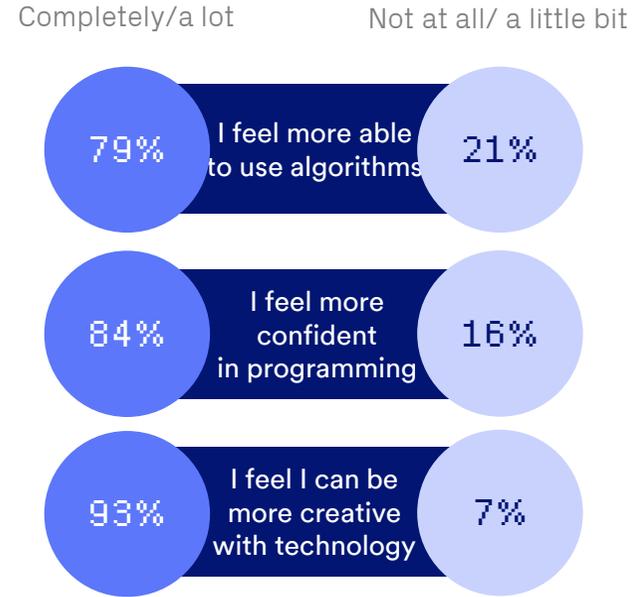
Even though high proportion of visiting pupils report high level of knowledge and confidence in these areas, the results show that, as a result of the workshop visiting pupils generally feel they have more confidence and knowledge in those areas.



Female pupils



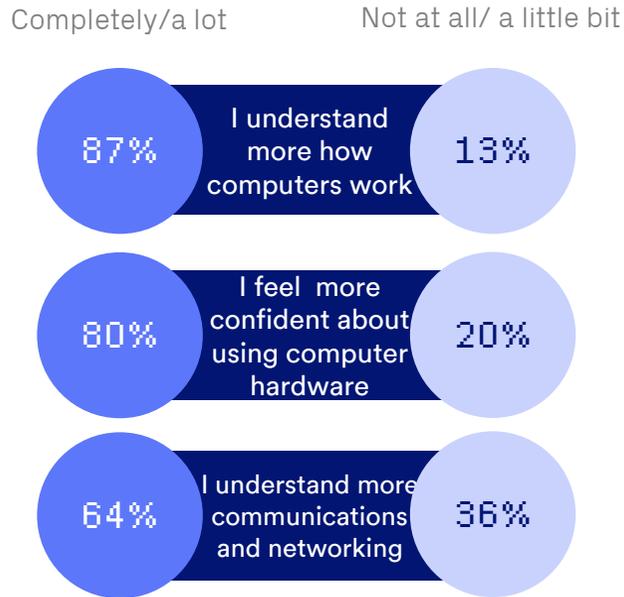
Male pupils



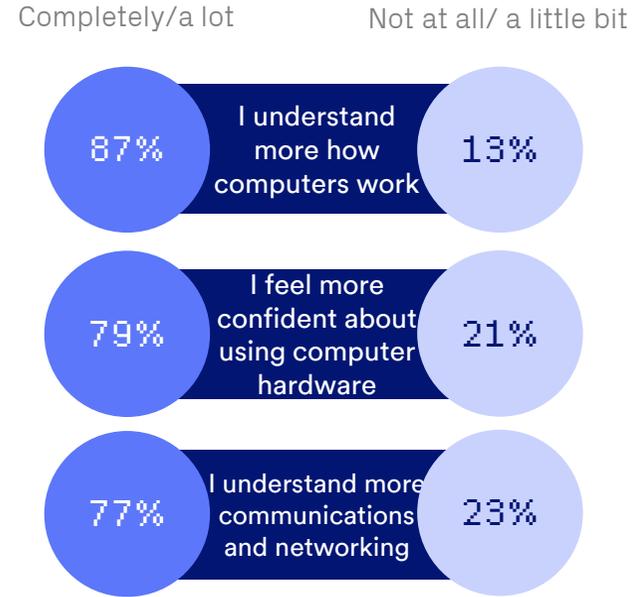
Q7. AFTER taking part in the Digital Schoolhouse...(146)

Both **male and female visiting pupils report an increase in subject knowledge** and they are much more similar compared to pre workshop results, even though the gender gap still remains.

Female pupils



Male pupils



Q7. AFTER taking part in the Digital Schoolhouse...(146)

Visiting pupils understanding of how computers work, **communications and networks and confidence** using hardware shows an **increase** after the workshop across both genders.

I do think sometimes the girls are probably a little bit more reserved than the boys in having a go and getting it wrong

Visiting teacher



I think it's to do with neatness as well. The boys will just have a go, and it's fine. The girls are like it's got to be put down and boxed up properly



Visiting teacher

Female pupils



Male pupils



Q7. AFTER taking part in the Digital Schoolhouse...(146)

Female visiting pupils report a higher level of increase in confidence compared to male visiting pupils in terms of staying safe online but knowledge on what to do remains similar across both.

The programme **generates higher levels of interest in computing** among visiting pupils with few differences between male and female visiting pupils.

I am now more interested in computing than I was before Digital Schoolhouse

	All	Female pupils	Male pupils
Not at all	2%	4%	1%
A little bit	13%	15%	11%
A lot	15%	12%	17%
Completely	70%	69%	71%

Q7. AFTER taking part in the Digital Schoolhouse...(146)

Visiting pupils generally report **feeling prepared for secondary school** after the programme. This was similar across male and female visiting pupils.

I feel more prepared for secondary school after having visited the Digital Schoolhouse

	All	Female pupils	Male pupils
Not at all	1%	1%	1%
A little bit	17%	17%	17%
A lot	24%	25%	24%
Completely	58%	57%	59%

Q7. AFTER taking part in the Digital Schoolhouse...(146)

What does this mean for the programme?



Visiting pupils and teachers both believe being part of the Digital Schoolhouse programme is having a positive affect



Across all measures, there is a difference between male and female visiting pupils, particularly in confidence with algorithms and programming. This means there is an opportunity to further develop the programme to support girls and boys at an equal level



Visiting pupils report a high level of feeling prepared for secondary school after the Digital Schoolhouse programme. This indicates there is potential for the programme to have long-term impact leading into secondary school. It should be considered how to best evaluate and capture this data

Moving forwards.



**“I really enjoyed it and really
would like to do it again”**

Visiting school pupil

**“You have to learn about
computers for the jobs you want
to do”**

Visiting school pupil

**“I liked learning about Scratch,
it was fun but also difficult”**

Visiting school pupil

Key findings.



Lead teachers

- Lead teachers value the insight they gain from being in a primary setting
- And enjoy the change of scenery and lesson style
- Lead teachers enjoy being part of a wider computing community
- However they can struggle to set up the workshops initially

Visiting schools

- Visiting Primary school teachers find the programme beneficial to build confidence and learn new skills
- But can lack the confidence and / or time to continue their learning beyond the Digital Schoolhouse workshop

Pupils

- Pupils find the programme engaging and enjoyable to take part in
- The programme is having a positive short-term impact on pupils perception of computing
- The programme has a positive short-term impact on pupils computing skills
- There is opportunity to develop the long-term impact of the programme

Points to consider.

We have collated learnings from the research conducted and used these to shape points for consideration.

Due to the small sample, these findings are indicative not robust and should be used as points for discussion and consideration when shaping the next phase of research and considering the approach for Digital Schoolhouse going forwards.



Overall the programme is very positively received, but our findings indicate a need for additional focus on:

Optimising the logistics of the programme

Driving continuous engagement

Enhancing the evaluation

Addressing the programme objectives

Optimising the logistics of the programme.

Whilst feedback is positive on the programme, the delivery of the programme could be improved for lead teachers. Reviewing the logistics of the programme could be beneficial in a number of ways:

Improving reach

There is potential to increase the number of visiting schools engaging in the programme by making it easier for lead teachers to communicate with them:

- We should consider how to streamline the process for lead teachers, and investigate the best ways of reaching more schools
- Considering if email is the best communication method and what the alternatives might be

Improving engagement

Lead teachers can find it hard to engage visiting teachers through e-mail, considering how to enhance awareness of the programme for visiting schools, and boost the programmes credibility could help promote better buy-in. For example:

- Potential for communication to visiting schools from Digital Schoolhouse to bolster credibility
- Gaining an understanding of who needs to buy-in to the programme and how best to engage them (e.g. SLT or Headteachers)

Improving efficiency

Supporting teachers to be prepared for different scenarios and be flexible to classroom needs will ensure more time can be spent on teaching over logistics e.g.:

- Creating more supporting materials for primary to secondary communication; conducting further research into how best to support teachers in this phase of their journey to make it as seamless and easy as possible to reach out to schools.

Driving continuous engagement.

Longer-term engagement with the programme can be more challenging to implement, it should be considered how best to support teachers to continue to engage after their workshop to help deliver long-term impact.

Improving structure

School engagement after the workshop can be varied; some continued to deliver Digital Schoolhouse workshops, whilst others are unsure how to take it further. By giving clear guidelines and structure to post-workshop behaviours there is potential to improve this, for example:

- Creating a roadmap of engagement for both lead and visiting schools to follow
- Providing supporting materials to hand out post-workshop, pointing visiting teachers in the right direction and highlighting useful follow on lessons

Reviewing benefits

Reviewing links to industry and the benefits being delivered, will help drive long-term engagement and motivation

Improving communication

Opportunity to explore the efficiency of the communication networks post-workshop:

- Providing more support through networks for visiting schools to encourage continuous engagement
- Potential to increase the number of touchpoints for visiting to lead communication



Optimising the evaluation of the programme.

There is a need to pause and reflect on the current learnings and evaluation process, to ascertain an overarching view of the impact of the programme and plan an efficient evaluation approach going forwards:

Streamline evaluation

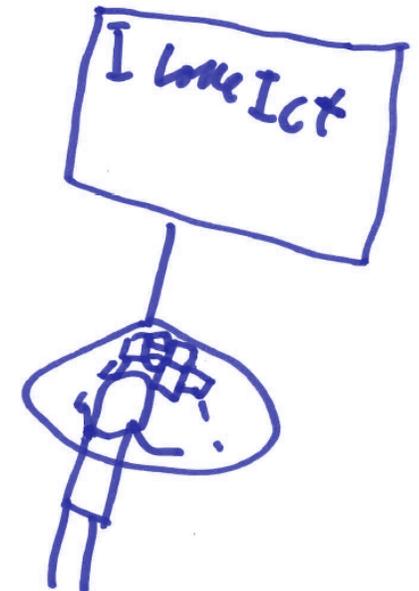
Support teachers to engage in the evaluation by making it an easy and efficient process:

- Consider the complexity of the pupil survey
- Consider length of pre and post workshop surveys combined

It should be noted since this research has been published, these amends to evaluation have been implemented.

Promoting an engagement tool

Opportunity to potentially drive engagement in evaluation by sharing the impact of the programme with teachers.



Addressing the programme objectives.

Further information and support is required to deliver the programmes objectives. We should first align on what the priority objectives are through development of a KPI document and, if applicable, address the below:

The gender divide

Research findings suggest that the programme can struggle to help to re-balance the gender divide in computing within schools

- There is opportunity to support this further by:
 - Understanding more about male vs female learning styles
 - Exploring with teachers the best format of lesson delivery for each style
 - Working with partner organisations to push for more work in this area
 - Ensure evaluative measures captures this data affectively

Driving long-term impact

Opportunity to look into ways of driving sustained impact, to encourage greater uptake of computing at KS4 and KS5

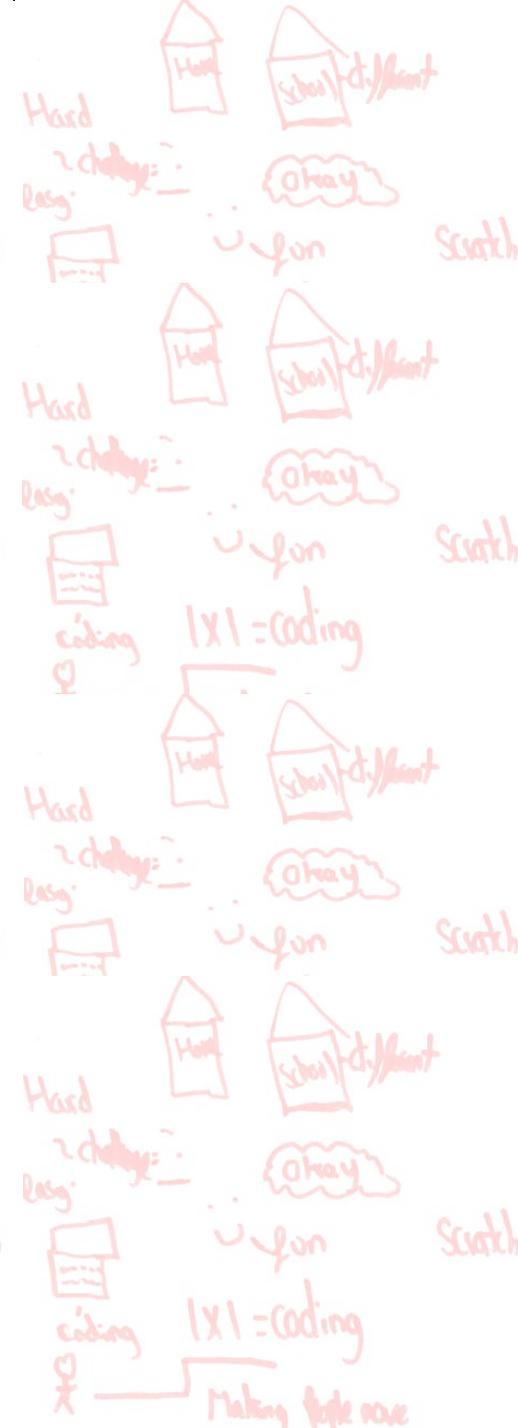
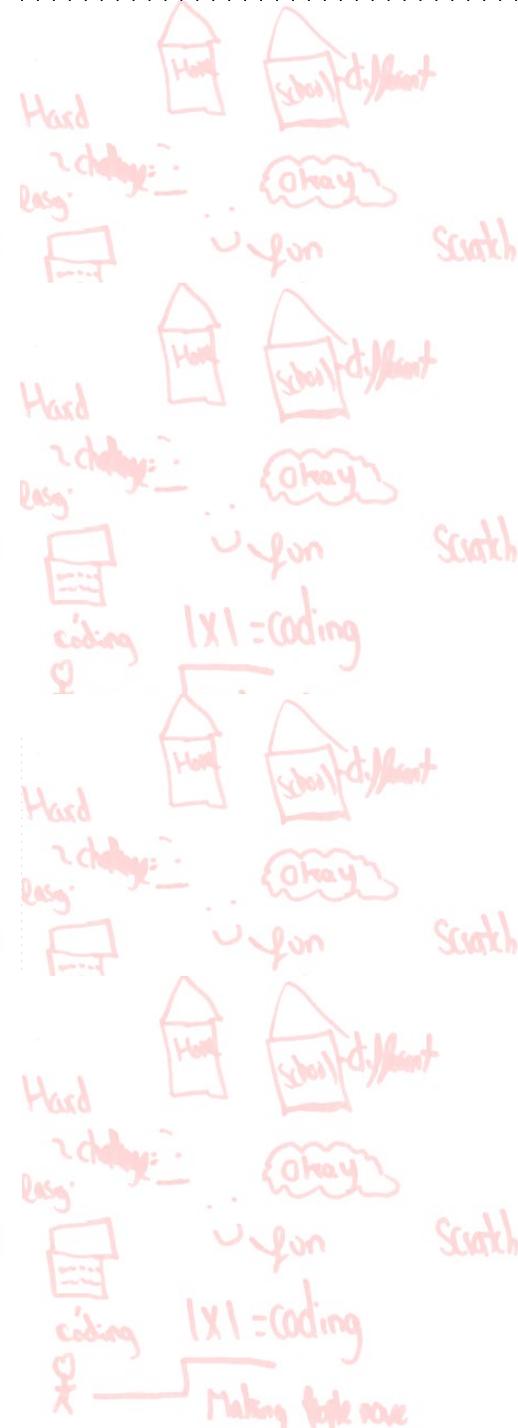
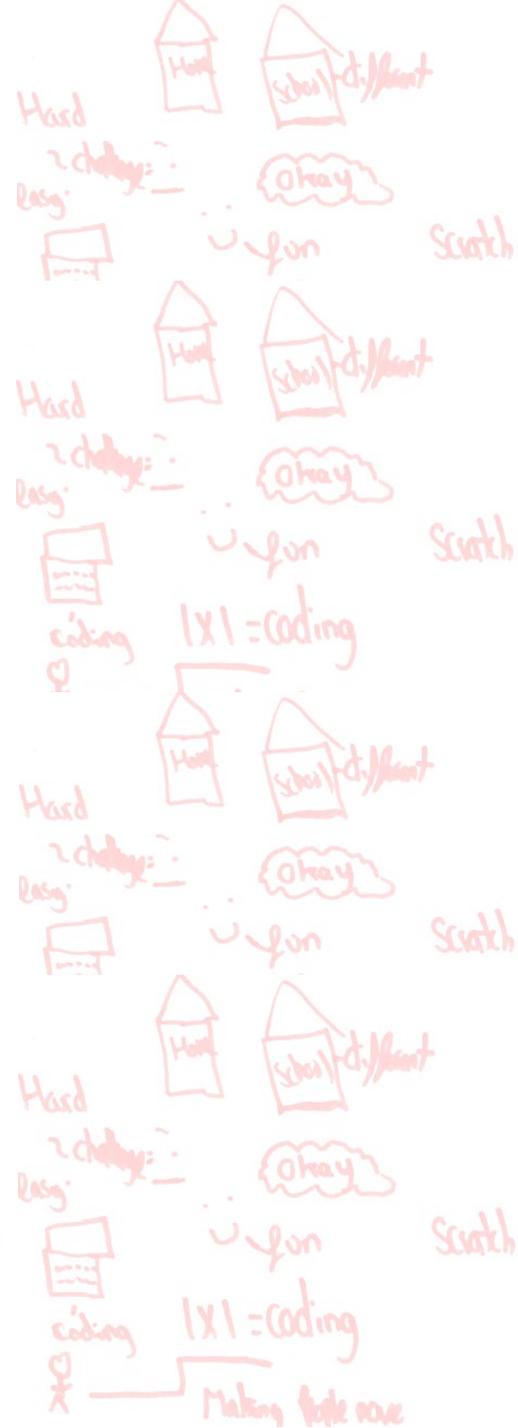
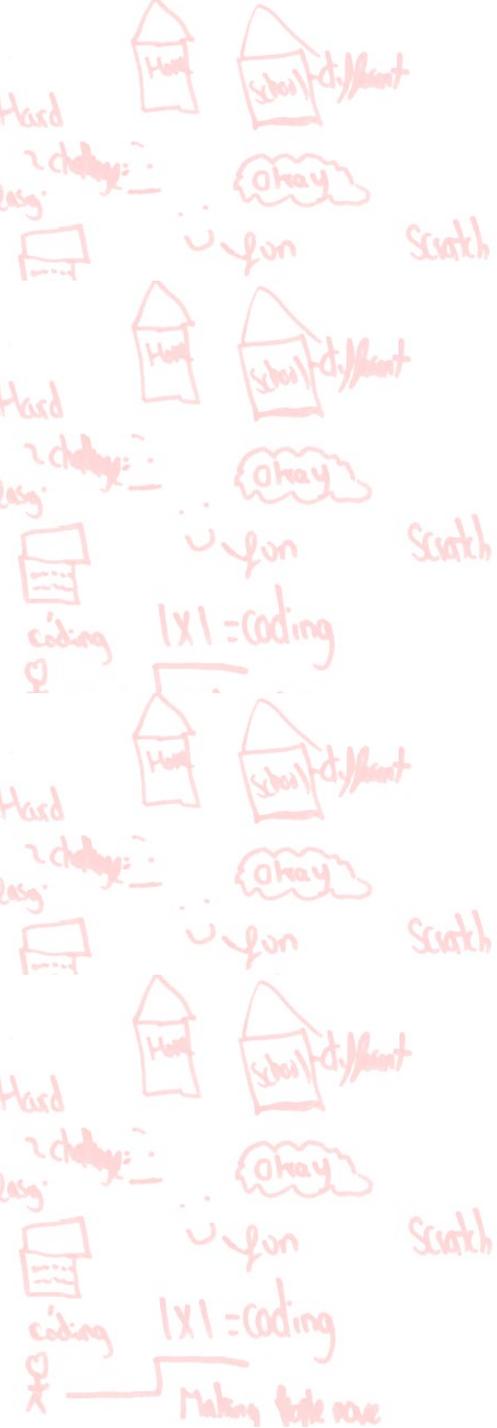
Creating links with industry

Whilst some schools are benefitting from the links made with industry, it is also clear this aspect of the programme could be better understood by teachers.

This may require:

- More communications with teachers on what the links with industry could look like for their school
- Helping lead teachers to understand the benefits of these links







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