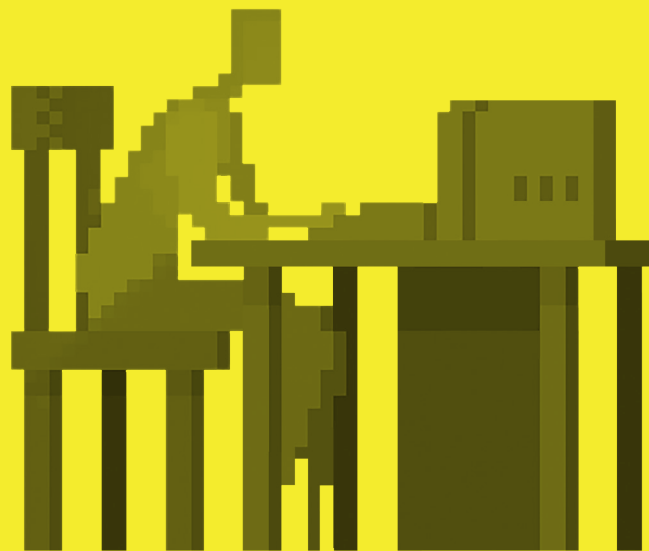


TEACHERS PACK

THE BIG DATA SHOW

**Creating a digital
future where we can
all flourish.**



Scottish Government
Riaghaltas na h-Alba
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INTRODUCTION

A Word From Clare Duffy

[Video resource 1:](#) Interview with Clare Duffy
(Rupert Goodwins talks with Clare Duffy)

What is your vision for The Big Data Show?

I imagine a large beautiful traditional theatre full of young people all playing games on their mobile phones and engaging with a story about the first prosecuted hack in the UK.

I love the idea of making a show for young people for that kind of traditional and quite weird often intimidating environment. It's strange: the seats are red velvet, the ceiling elaborate gold-carved. Where else looks like that? A palace? But that space says something about what people 100 or 150 years ago thought about public space and therefore what they thought about private space. I think it's really exciting to explore how a story about hacking and privacy can be told through live interactive games in unusual environments.

What stage is the project at now?

Right now we are in a research and development stage. In 2017 we developed the design and concept of the show with Perth Academy pupils and shared an early version of the play at the Science Festival.

Now we've developed the app so that it is available on Google Play and the App Store and we've invited schools in Perth, Edinburgh and Glasgow to enter into our creative process and give us feedback. We have lots of questions. We want to know what it's like for pupils and teachers to play together. If that is fun and also a good way to think and learn together. We wanted to create an app that appears to be an addictive game but that has secret levels and digital magic tricks which are revealed as part of a live performance to the audience that test what they know about cyber security. We want to find out what the energy of gaming in large groups is like and how it interacts with telling the story of the first prosecuted hack in the UK. We want to find out what young people know about their data and how it is used, what it is worth and to also see if we can inspire our audience to want to know more about cyber security in all its forms. Also we're testing the app that we designed last year with Orthrus Studio and pupils at Perth Academy. We need to know that it works technically.

How did you come to the idea of The Big Data Show?

In 2011 I made a show called Money the Game Show, in response to the financial crisis and the fact that I understood almost nothing about how or why it had happened. I made this show by putting 10,000 real pound coins on stage, dividing the audience into two teams and demonstrating through a series of very childish and fun games 'how to be a hedge fund manager' and 'how the financial crisis happened'. I became inspired by the power of games to tell stories as part of live performance. I started talking to Rupert Goodwins about his past as a teenage hacker and began to think about how data is a kind of currency and the way it works and moves through the world is potentially even more hidden than how money works. So that was it. Rupert and I decided to write a show that used the audience's own mobile phones to dramatize what data is and how intimately interwoven it is into our everyday digital on and off-line lives.

A Word From Rupert Goodwins

[Video Resource 2](#). A series of specific questions answered by Rupert Goodwins in an interview with Clare Duffy

Rupert answers the questions:

- What did you do when you were 16 in 1984?
- What was "The internet" in 1984?
- What happened to your friends?
- What is the Computer Misuse Act?
- Why are you making a show about it now?
- What are your favourite does and don't's of Cyber Security?
- Should we be worried?

Some Stats About Young People, Big Data and Cyber Security

"I ask all leaders and educators (...) to regard cyber resilience as vital to their success in our online world."

John Swinney. Deputy First Minister.

Pupils "became much more aware of the amount of data gathering going on in the background without them giving explicit permission and this was a shock to them."

Mrs Hollas. Drama Teacher. Perth Academy.
After The Big Data Show workshops Spring

There is a need to think critically about 'everyday' digital technology use

12-18 year olds today are the first generation to have grown up in a continuously online environment. Our 2017 developmental workshops in Perth Academy showed peer pressure and bullying is magnified through digital technology. One pupil said: "(Snapchat) is the most stressful thing in the world, I hate Snapchat but I would never ever delete it." Only one pupil out of 60 participants said they didn't use Snapchat.

Pupils in our workshops reported frequent bad cyber security, such as giving their password to other people. They also reported that privacy was important to them.

Only half of 8-17 year olds (51%) said they always think about what personal information they could be sharing before they post a photo or video online. (Power of the Image Report. UK Safer Internet Centre. 2017) The National Crime Agency said, "in one week, authorities identified 345 vulnerable children and arrested 192 people, 30% involving streaming, blackmail and grooming." (BBC News 4th Nov. 2017.)

**There is a need to demystify 'big data',
how it is gathered and what it is used for.**

Only 8% of consumers understand how organisations use their personal data. (Whose Data Is It Anyway? The Chartered Institute of Marketing. 2016) The amount of time 12–15s spend online has more than doubled since 2005 from 8 to 18.9 hours in 2015. (Ofcom report: 2015)

Our workshops showed none of the pupils knew that their data is sold to 3rd parties. This led to discussion about how people/groups might use this information, including law enforcement agencies, scientists, medical researchers, criminals and politicians. We found there was a significant difference in pupils' privacy settings between the first and second workshops.

**There is a need to create a learning environment for teachers
and young people to play and learn together.**

Our workshops at Perth Academy showed a generational divide in relation to cultural use of digital technologies.

*"I don't think mums and
dads really understand,
my mum is quite happy to
take my phone away, but
my whole life is on my
phone."*

Perth Academy Pupil. Age 15.

*40% of UK population
play online games and 6
in 10 children aged 10–
15 have bought a game for
themselves.*

(IPSOS Study 2012.)

Social media platforms such as Snapchat also maintain consumption through gaming elements such as the collection of 'streaks', which pupils at Perth Academy reported made it so stressful.

*I feel that we, as a society are sleepwalking into
some very tricky times regarding data and its value
to some very amoral people who see it as a way to
make money with no regard for privacy for the people
providing it. I, especially, feel we are silently and
unwittingly abdicating the duty of care we have for
young people in allowing this to happen without asking
enough questions or even knowing we should!!*

Sarah Lewis, Drama Teacher, Perth and Kinross.

Ofcom's report November 2015 shows tablets are increasingly used as the default entertainment screen, which makes adult supervision much more difficult. The report also found that:

*"the relatively low levels of critical understanding
raises challenges for how children keep their personal
information safe"*

(Ofcom report: children and parents: Media Use and Attitudes Report. November 2015)

ABOUT CURRICULUM CONNECTIONS

In the appendices we have listed all the curriculum areas we think The Big Data Show connects with. Our hope in creating this resource pack is that it will inspire cross curriculum connections and inspire teachers to reach out to other departments in addressing cyber security in its broadest aspects.

We have also referenced where we believe the connections are with each workshop plan. Please let us know if there are more or if we've got it wrong. This is a living document and your feedback will make it better for the next teacher or pupil.

Part of the reason we created Civic Digits Theatre Company is because we're so excited about how digital technology is woven into the fabric of our everyday lives and touches every aspect of who we are and hope to be. How can we be happy, thoughtful, successful digital citizens, friends, families, scientists and artists all at the same time?

LIST OF SUPPORTING WORKSHOPS

HEALTH AND WELL BEING

Discussion: Do you want the right to delete your data?

Resources: Video x and x

DRAMA 1

Using drama to explore health and well-being

DRAMA 2

Issue based hot seating and other techniques

SOCIAL STUDIES

Discussion: How did we get here?
A history of hacking

Resources: Video Rupert

TECHNOLOGIES

- Cheesy Cyber Security Quiz
- Create a game to teach someone something about cyber security.
- How did they do that? A practical fun workshop on teasing out the structure of the hardware and software and how it all fits together and how data travels through it.
- Next level challenge: We give you access to the open source code for Swipe: Big Data Show. Can you hack it?

LITERACY AND READING

The Small Print: A playful workshop reading the terms and conditions they accepted and finding the funny bits and the nonsense bits.

CREATIVE WRITING

EXPLORING IDENTITY

How to engage and/or influence readers through my use of language, style and tone.

CREATIVE WRITING EXPLORING IDENTITY, CHARACTER, TONE AND DRAMATIC STRUCTURE

MINI SWIPE

INTRODUCTORY WORKSHOP

A starting point for pupils who have not seen the show or for classes who saw it to have a reminder as a lead in to discussion.

TEACHERS TWILIGHT WORKSHOP

SUPPORTING WORKSHOP

OUTLINE PLANS:

Health and Well Being and Literacy and English

Debate: Do you want the right to delete your data?

Social well-being

● As I explore the rights to which I and others are entitled, I am able to exercise these rights appropriately and accept the responsibilities that go with them. I show respect for the rights of others.

HWB 3-09a/HWB 4-09a

Listening and Talking

Tools for listening and talking:

● When I engage with others, I can make a relevant contribution, encourage others to contribute and acknowledge that they have the right to hold a different opinion. I can respond in ways appropriate to my role and use contributions to reflect on, clarify or adapt thinking.

LIT 3-02a

Would pupils like the right to delete all their data? An age of consent for online data? You might want to create teams to work on different aspects of the question and take a vote at the end of the session.

1) Resource 3. Video: Second interview with Rupert answering these questions:

- What is data?
- How is it collected and why?
- How can you delete content that you have posted on line or that other people have posted about you online
- How difficult is it to delete your data?
- How much might it cost?
- What would you lose if you deleted all your data?

2) Resource 4. Video: Cy and Bug in the hot seat talking about their experiences of cyber bullying.

a) Discuss: What (if anything) did Cy do wrong? What can he do now? What do you think he will learn from this?

Extra Reading:

5 rights: *Our Digital Rights*

Jon Ronson *So You've been Publicly Shamed*

Drama 1

Using drama to explore health and well-being

Health and Well Being

As I explore the rights to which I and others are entitled, I am able to exercise these rights appropriately and accept the responsibilities that go with them. I show respect for the rights of others

HWB 3-09a/HWB 4-09a

Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community

HWB 3-13a/HWB 4-13a

Drama

I can create, develop and sustain a realistic or stylised character through the use of voice, movement and language.

EXA 3-12a

Introduction:

This session uses drama techniques to explore young people's attitudes and awareness towards key themes.

- **Minimum Time:** 1 hour to get into it but the work could be developed over a number of weeks.
- **Requirements:** A cleared classroom, hall or drama studio. Flip chart paper and marker pens
- **Preparation:** Decide on your key theme for the session (eg. relationships/cyber security/safety/pressure etc.)

Getting Started:

- Use a warm-up game to instill skills of observation, negotiation and cooperation within the group to stretch their imagination and to assess what the group dynamic is on that day.

Games for control of scenes, fun and challenges

- **Can This Group?:** This is a cooperative game and is limited only by your own imagination. It can very easily be linked into themes. The idea is that the group is asked to complete a simple task in the count of, say, five. The rules are that they cannot speak, direct each other with signs or pull or push each other into place – it must happen 'as if by magic'. The task may be standing in their own space, it may be standing in a perfect circle, making the letter A as one group, or standing in groups of the same height etc.

- **Can This Group? Advanced Version!** Once the pupils have started to work together well and cooperate with each other the tasks can be expanded to include pictures of school life, favourite places, objects on the beach, a football match, or a concert. The teacher should go round and ask everyone in their frozen pose what they are – there are no wrong answers!! If they have an idea (eg. a piece of seaweed, a microphone) accept it! Encourage them to see that there are no wrong answers – they can be anything!

- **The Remote Control Game:** A useful and fun drama game that gives the group a shared set of 'commands' to help in the playback of scenes. For example, ask the young people to imagine themselves just before they wake up in the morning or are out at a favourite coffee shop – somewhere they know well. You have the remote control and you can fast forward, rewind, slow motion, play and turn the volume up and down. You can even move them one frame at a time! Press play and watch them come to life. Pause them before each change of instruction and vary it by pausing all but two or three people and giving different groups a chance to 'perform' within the context of the game. All of these 'game commands' once learned can be used in directing the playback of the drama created later in the workshop.

Finding the starting point:

- Brainstorm the key theme in small groups – this gives a broader canvas and limits word association led brainstorms. Feed back to the whole group and listen to each other.

Achieving consensus:

- What are the three most important words and why? Ask the groups to decide privately which words are the most important to young people their age.

Exploring the context:

- Ask each of the groups to make three still images to represent their most important words. The image must contain conflict and be naturalistic, not symbolic – a moment of real life frozen. Prompt the young people to draw not from the TV, but from their lives.

Facilitating the image:

- Each group then presents their images to the rest of the group who are asked to guess what is happening in the picture. By examining the image presented by each group it is possible to explore the range of situations it may represent to the audience. By not being too specific too early in the discussion it is possible to allow participants to share their concerns, experiences and coping strategies. This debate provides an opportunity for listening to the contexts within which young people place the themes under discussion.

- **Useful questions:** What might be happening? Where might it be taking place? What could you change? What would the picture look like? Who could change it? What could they do? Careful construction of questions will make responses easier for the group.

After questioning the rest of the group about the image ask those who created the image to describe what was going on in their story.

Building 'controls':

- Use the Remote Control Game to build controls within the group before asking them to develop their still images into short plays. (Included at the end of this section)

Prioritising:

- Ask the groups to choose one of their images and make a short play involving words and movement to show how that situation occurred. Ask them to finish their play on a frieze consisting of their original image. Again prompt them to work from their lives and not from the TV – set a time limit.

Facilitating the Scenes:

- Play the scenes back to the audience and use the Video Game controls to rewind, turn the volume up, go in slow motion etc. Where are the hot spots in this scene? Where are the decision / pressure points? Where are there opportunities for change? How would that change happen? What would people have to say? Who else might get involved in this scene? How would they get involved? What things do the characters in the scene need to know to help them? How can they find out?

Reflection:

- Leave time at the end of the session to reflect further – 'out of character' – on what has been learnt and on how effective the group feels the process has been in getting at some insights and some truths.

Drama 2

Issue based hot seating and other techniques

Curriculum connections

Drama:

I can create, develop and sustain a realistic or stylised character through the use of voice, movement and language.

EXA 3-12a

I can demonstrate sensitivity, precision and depth in the portrayal of a character, conveying relationships and situations in a variety of settings and to different audiences.

EXA 4-12a

In response to a variety of stimuli, I can use my understanding of characterisation to create characters using different approaches, making use of voice, movement and language. I can present my work to an audience.

EXA 4-13a

Introduction:

Video resource 4: Cy and Bug are in the hot seat talking about their experiences of cyber bullying.

- **Minimum Time:** 1 hour to get into it. The work could be developed over a number of weeks.
- **Requirements:** A large classroom with cleared space at the front for the Continuum, 3 way debate etc. Flip chart paper and marker pens
- **Preparation:** Decide on your key issue for the session (eg. "Every child and young person should have the right to easily edit or delete all content they have created".)

Introduction:

- Hot seating generally involves a volunteer agreeing to represent a fictitious character who answers questions put to her or him by the rest of the group. In this session the term is extended to include a variety of strategies which allow the members of the group to put themselves on the spot and explore attitudes and values which they may recognise as current in the real world. In whatever hot seat exploration the group creates, decisions can be made, risks taken and consequences addressed in the relative safety of a fiction.

Getting Started:

- Talk to the class about the theme for the session. Ask them to think of a fictitious character who might relate to that theme (eg. parent/young person/large corporation/teacher/police etc.)
- Or use video resource 4 where the actors hotseat their characters 'Cy' and 'Bug'

Role on the wall:

- Split the class into small groups of five or six. Draw an outline of a person on a large piece of paper (or blackboard). Ask the whole class to decide what the above character is like on the inside (write suggestions inside the body outline) and on the outside (what do they look like/how old are they etc. – these comments should be written around the outside of the body outline).

- Once the character has been created, ask the groups to think of other types of people who would relate, both to the original character and to the theme in question. You need one character selected for each of the smaller groups. Then ask each group to work together to also do a ‘role on the wall’ for their character.

Key advantages:

- Because it is fiction it allows people to register personal concerns in public in some safety;
- Because everyone is invited to contribute there is a sense of group commitment to the characters we have invented.

A Continuum – Where do our characters stand?:

- Ask for a volunteer or nominee from each group.
- The volunteers/nominees will work together to represent the original character you created with the whole class. The other groups are asked to represent each of the other characters that have been created.
- Then individually each person in each group decides where she or he thinks that character might stand on a particular issue (eg. the right to erasure of data).
- Without consulting the others each person then places them on an appropriate spot along an imaginary line from one extreme position to another.
- The task is then for each separate ‘group-character’ to negotiate an agreed position on the continuum. For example, if four out of five of the group representing a Police Officer decide that she is ‘for erasure’ and one doesn’t agree, then the group has to debate the matter until it comes to an agreement. The group may need to find a compromise somewhere along the continuum (indicating perhaps a strongly held conviction but with specific reservation) or may manage to achieve unanimity by reasoned argument within the group and end up at one or other end of the continuum.
- If the group has chanced to arrive at exactly the same point on the continuum right from the start then it should discuss what made each member of the group decide that this was where their character would stand.
- Each (group) character then presents a single prepared sentence that states its convictions (not at this stage an argument, simply a bald statement of belief).

The context for dealing with this matter:

Can the whole group agree who raised this issue between the four or five characters we have created? A specific time, place and occasion for the exchange will help create a fictional reality and prevent it from simply becoming a debate between the individuals in the group. It is a debate between them of course, but some people may well be arguing on this occasion from a point of view they have never before considered and people may wish to try out attitudes they might normally feel inhibited from holding.

A Three Way Dialogue:

Each group elects one of their number to represent their character, offers a little advice on how the character might enter the debate, then watches and listens as the three characters, within the agreed context (a school parents' evening perhaps), start up the dialogue. The dialogue then continues for as long as it seems productive.

Some rules to help:

- **Time Out:** At any point in the dialogue one of the characters may call "time-out" and retreat to the support group for advice or ask for a substitute who will then represent their character as the dialogue resumes (at the same time and place as before or at a different time and place if the whole group can see a point to such a change)
- **Narration:** The group leader may find it useful at times to move the fiction forward by interrupting the dialogue to narrate a sentence or two which prepares for the setting up of a new episode.

Some Strategies to help:

- **Teacher in Role:** A strategy which allows the leader to set up, prompt, support and challenge the group in its role playing. It does not call for great acting skills. On the contrary, the aim is to do the least required to provoke the best from the group. It is generally most productive to choose a role which needs to seek advice or help from the groups' role(s). At the heart of the drama there will be a dilemma. Teacher in role allows the leader to propose an appropriate dilemma from within the drama and to set the tone and level of seriousness needed to make the whole thing work.
- **Thought Tracking:** Attention will often be focused on a small group who have volunteered to improvise or present a moment. There may be times when the leader judges that those who are watching and listening to this dramatic episode should be more actively involved.
- A simple and effective way of doing this is to freeze the active group and invite everyone to provide the possible thoughts of one or more of the characters. Surprising and valuable insights are sometimes elicited by this strategy.

Inside and Out:

- The teacher may feel that it would be enlightening to see how honest and straightforward that the characters are being in their dealings with each other.
- Ask for volunteers to stand behind each character to represent their innermost thoughts.
- As the dialogue evolves the 'thoughts' can place a hand on the shoulder of their character at any appropriate moment.
- All dialogue freezes for that moment and the inner thoughts are expressed aloud by the "interrupter".
- The dialogue then continues as though nothing had happened.
- The other characters should carry on as though they had not heard the thoughts, of course, though they might 'suspect' that the person they are talking to is being less than honest!
- This is often an amusing and revealing strategy but should be used sparingly and with care, perhaps towards the end of a dialogue.

Reflection:

- A good deal of reflection, discussion and debate is integral to this whole process of drama.
- In addition, however, it is advisable to leave time at the end of the session to reflect further – out of character – on what has been learnt and on how effective the group feels the process has been in getting at some insights and some truths.

SOCIAL STUDIES: HOW DID WE GET HERE?

People, past events and societies

- I can present supported conclusions about the social, political and economic impacts of a technological change in the past
SOC 4-05a

Video Resource 2: A series of specific questions answered by Rupert Goodwins in an interview with Clare Duffy

He answers the questions:

What did you do when you were 16 in 1984?

What was "The internet" in 1984?

What happened to your friends? What is the Computer Misuse Act?

Why are you making a show about it now?

Resource 5: News clippings from the time:

"Hacker who broke into Dukes computer file found guilty of forgery"

"Computer messages 'went to Palace'

"Hacker in 'plea to be reported"

Challenge:

What might have happened if Rupert and his 3 friends hadn't hacked BT's Prestel System?

What might have happened if the Prestel hackers had been unethical hackers?

What might have happened if the House of Lords had upheld the original judgement of the Prestel Hackers?

Can you find a story in the news this year about hacking?

What relationship is there between the story from 2018 and 1984?

The responses to these questions could be shared in discussion or as written reports. They could also form the research for a creative piece of writing.

TECHNOLOGIES

Digital Literacy

- I can keep myself safe and secure in online environments and I am aware of the importance and consequences of doing this for myself and others.
TCH 3-03a

- Cheesy Cyber Security Quiz

- Create a game to teach someone something about cyber security. Maltesers and straws

- How did they do that? A practical and fun workshop teasing out the structure of the hardware and software, how it all fits together and how data travels through it

The Big Data Show's Cheesy Cyber Security Quiz with Answers

(NB Pupil copy without answers available on our website here.)

1) When was the first message sent from one computer to another?

Answer: 1969

Bonus question: what was sent?

Answer: lo: First two letters of "login"

2) When was snapchat invented?

Answer: 2011

3) Strong passwords: the best way to make a password is by

a) Using the name of your pet and the year of your birth

b) Using three random words together such as elbow-wasp-custard

c) Using random words and keeping all your passwords in a book in your bag so you don't get locked out of your favourite app because you can't remember your new password.

Answer: B

GOLDEN RULE: Never use a password for more than one thing. If hackers steal your username and password from one service, they'll try to use them for your email or other services. Thwart them.

Bonus question:

Can you guess the American nuclear launch code password used in missile silos between 1962 and 1977? **Answer:** 00000000 (eight zeros) (NB: The American Air Force officially denies this, but operators from the time confirm it.)

Bonus facts:

President Carter left his launch codes in the pocket of a suit he sent to the cleaners, and President Clinton mislaid his codes for four months but didn't tell anyone.

4) True or false: You should always download software or app updates because they will contain upgrades to the security of the software.

Answer: True – but beware unexpected prompts that ask you to confirm a security update or warn you of a virus infection. Most updates happen automatically when you start up or shut down your computer or mobile device, or when you visit the app store.

You should be careful when upgrading your apps that you check that your personal security settings are still as you set them. Sometimes an upgrade resets your security to a default.

5) You see an email that looks like it is from a friend or a company that you use, like Instagram or Apple. It is asking you to download a document. What do you do?

a) Download it

b) Delete it immediately

c) Phone your friend or the company to see if they did send it

Answer: (B) Also beware unexpected instant messages with links in, they can also be dangerous spam.

GOLDEN RULE: If you didn't ask for it or aren't expecting it – don't click on it

6) You are going on holiday where you know there will be no access or very little access to internet. You want to make sure you keep up the apps you are using, like snapchat. Do you:

- a) Give your passwords to your best friend who you totally trust so that they can make sure you don't lose any streaks.
 - b) Send a final sad face message to everyone explaining that you have to go to the far side of the moon where there is no internet and that when you come back you hope that you will be welcomed back.
 - c) Just don't use the internet for a bit. It's quite nice to have a break.
- Answer** (b) or (c). Everyone knows that going analogue is the new cool.

7) You are using free wifi on a bus or in a café. List these internet use activities in order of risk. Most risky 1 least risky 3

- a) Email (2)
- b) Gaming (3)
- c) Shopping (1)

8) Someone you don't know wants to be friends via an app. Do you:

- a) See who your mutual friends are and ask them if they are genuinely friends
- b) Decline anyone you don't know
- c) Tell them where you live and invite them round to dinner

Answer: It depends on what information being a friend will give that person access to.

9) You're browsing a website you haven't visited before on your mobile when you get a pop-up message saying your phone is infected and you should download a scanner to fix it immediately. Do you:

- a) Follow instructions as quickly as you can
- b) Ignore it and carry on
- c) Build a large bonfire and burn your phone to ashes
- it's the only way to be safe

Answer: (b) In general, the sketchier the website the more likely it is to be carrying fake adverts and pop-ups that try to trick you.

10) Imagine someone who knows nothing about internet security. What would you tell them?

Bonus question:

Imagine someone who knows nothing about the internet...
What is the best thing/s?

Shared conversation

A Game To Explore Cyber Security

Challenge:

Invent a game to teach something to someone who knows nothing about cyber security.

Questions to consider before starting as a whole group:

- 1) What sort of person might not know anything about cyber security?
- 2) What sort of game might they like?
- 3) What information or data do you think is the most important or sensitive?
- 4) What makes a game a game? For the purposes of this exercise you're going to make a game that is easy to explain, that has a clear way to win and is fun.

Split up into smaller groups.

5) Each group gets the same objects. These can be anything you want. We suggest easy to source, everyday objects such as straws, balloons, Maltesers, cups. Or 2 sheets of paper. A stack of paper clips and 2 pencils. You don't have to use them.

6) Each group has a fixed amount of time to create a game that demonstrates an aspect of being safe online.

For example: At a recent hackathon at Codebase the winning team created a game that replicated a social media platform but it wouldn't let you login unless you cleared a level of security. By having to check the settings for example. Then at the next level you had to find ways of balancing risks with opportunities to use and enjoy the app.

7) Give the game a name. Practice explaining it.

8) Share.

9) Play each game and vote on which game is the best solution to the challenge.

Information it would be great to feedback to Civic Digits

What did participants identify as most important cyber security risks?
What solutions did they create?

Resource 6: Safe, Secure & Prosperous:
A Cyber Resilience Strategy For Scotland
Cyber Streetwise Get Safe Online

How did they do that?! (Packets)

Practical fun workshop teasing out the structure of the hardware and software, how it all fits together and how data travels through it

Computing Science

- I can describe the structure and operation of computing systems which have multiple software and hardware levels that interact with each other.

TCH 3-14b

- I can explain the overall operation and architecture of a digitally created solution

TCH 4-14b

Workshop: Map the Data Journey

Challenge:

Can you work out what the journey is of GPS data through The Big Data Show app?

Resource 7: A map of the data flow and control system for The Big Data Show app. GPS Data Flow Diagram showing how Swipe collects and displays location data.

Suggestion: Use everyday or fun objects to represent the data journey and make the data journey as a whole class. For example: Maltesers or paperclips can represent GPS co-ordinate data, which is collected at every play of SWIPE, and then string and labels or stickies, to describe either place or parts of the control system.

Additional Challenge:

The open source code for Swipe: Big data Show can be found here
Can you hack it?

LITERACY AND READING

The Small Print: A playful workshop reading the terms and conditions they accepted and finding the funny bits and the nonsense bits.

Understanding, analysing and evaluating

- To show my understanding, I can comment, with evidence, on the content and form of short and extended texts, and respond to literal, inferential and evaluative questions and other types of close reading tasks.

ENG 3-17a

- To show my understanding, I can give detailed, evaluative comments, with evidence, on the content and form of short and extended texts, and respond to different kinds of questions and other types of close reading tasks.

ENG 4-17a

The Small Print

Resource 8: The terms of service for Swipe

Resource 9: A copy of the Terms of Service annotated by Clare Duffy with her thoughts and reasons for writing it like this.

Additional reading:

Why not find the terms of service for a popular app such as Facebook or Snapchat?

Challenge 1:

How many silly or non-sensical phrases or sentences can you find in the Terms of Service for Swipe?

Challenge 2: Can you re-write these terms in 'plain English'?

Discuss or write a response to these questions:

How would you describe the tone of the Terms of Service?

If the Terms of Service was a person what kind of person would they be? Describe what they

- 1) Wear
- 2) Eat for breakfast
- 3) Do at the weekend

What stories do you know where a character is tricked into signing a contract?

The Little Mermaid (Disney version)

Dr Faustus

The Picture of Dorian Gray

Wall Street (Film. Director. Oliver Stone)

Creative writing exploring identity, character, tone and dramatic structure

Creating texts

- I can engage and/or influence readers through my use of language, style and tone as appropriate to genre.

ENG 3-27a/ENG 4-27a

Digital Literacy

- I can keep myself safe and secure in online environments and I am aware of the importance and consequences of doing this for myself and others.

TCH 3-03a

- I can evaluate the implications for individuals and societies of the ethical issues arising from technological developments.

TCH 3-06a

Creative Writing 1: Tone

Resource 10: Video Bug describing the data breach of sharing her mum's poetry.

Resource 3: Video interview with Rupert about data

1) 10 questions to think about character

- What 5 words would you use to describe Bug?
- What does she like eating?
- What is her favourite app?
- What do you think she will do in the future for a job?
- What hobbies does she have?
- Who is the most important person in her life?
- What does she hate?
- Where does she go/what does she do when she is upset?
- What makes her laugh?
- What music does she listen to?

2) Can you write a description of another time Bug regretted posting something online? A) Imagine that she is describing this to her mum. B) imagine she is describing the same thing to her best friend.

3) Discuss: How does who is listening change the way she describes what happened?

4) Watch Rupert's interview about data and the right to remove data.

5) Write a letter or speech to be given in public, to the Government or to a large internet company like Google or Apple from Bug arguing that she and other young people should have the right to easily edit or delete content they have created.

6) Discuss what is formal language or appropriate language to use in public or when trying to engage with authority and/or powerful organisations.

Resource 9: 5 rights Our Digital Rights

The first of The Five Rights Framework

is The Right To Remove

UNCRC Article 16 (right to privacy);

Article 12 (respect for the views of the child)

Sometimes I regret what I post online and wish there was some easy way to make it disappear.

Creative Writing 2: Dramatic Writing

Creating texts

- Having explored and experimented with the narrative structures which writers use to create texts in different genres, I can:
 - use the conventions of my chosen genre successfully and/or
 - create an appropriate mood or atmosphere and/or
 - create convincing relationships, actions and dialogue for my characters.
- ENG 4-31a

HEALTH AND WELL-BEING

Social well-being

- As I explore the rights to which I and others are entitled, I am able to exercise these rights appropriately and accept the responsibilities that go with them. I show respect for the rights of others.
- HWB 3-09a/HWB 4-09a

Video Resource 11: Rupert meets Robert after the first trial.

RUPERT I'm sorry Robert.
Hey. Robert.

RUPERT (*Looking around him*) Is this really necessary?

ROBERT They were recording my phone calls Rupert. Do you think that's all they were doing?

RUPERT But are they allowed to even do that?

ROBERT I'm not sure. But they did, didn't they.

RUPERT I'm sorry Robert.

ROBERT Where have you been? Why didn't you get arrested? Why didn't they make records of your phone calls for 5 months? Did you know about any of this? Did you say something to anyone?

RUPERT Well. You saw me on TV

ROBERT Rupert. This isn't funny. This is real. This is me stripped naked and running for my life with people watching every moment. Do you know how that feels? Do you?

1) Dramatic writing needs action

What is the action in this scene? What is at stake?

What do the characters want?

What do you think is the likely outcome/s?

Write what happens next in the scene or in a later scene.

2) Action is character

There is a saying that when writing drama "action is character".

Discuss (or think about) what mistakes people make online or what concerns/worries they have about cyber security?

Think of an action, something someone might do that relates to cyber security.

Now develop your first character (A):

Answer these 10 questions about character A

- 1) What is their obsession or passion in life?
- 2) What is their earliest memory?
- 3) What are they the most proud of?
- 4) What is their home like?
- 5) Describe their bedroom.
- 6) Give them a name.
- 7) Favourite food
- 8) Hopes or ambition
- 9) What do their parents/careers do?
- 10) What haven't they told anyone?

Now imagine someone who has a) either just found out what Character A has done and is upset about it or b) they want to stop Character A before they do something to do with cyber security risk.

First answer these questions about Character B.

- 1) How did they find out what Character A did?
- 2) Why are they upset and/or why do they want to stop them?
- 3) What are they going to do?
- 4) How do they feel about it?
- 5) What do they hope will happen?

Now write a short scene where character B confronts character A.

Subtext

Something to think about:

When you're writing dialogue people often say more 'in between the lines' than out loud. Look at the clip from the show.

What do you think is being said between the lines?

Can you write in the subtext between these lines?

Can you write in the subtext between the lines in your own dialogue?

Creative Writing 3: Identity in The Big Data Show

Video Resource 12: Clare Duffy talks with Rupert Goodwins about 'Identity'

How many different representations of Rupert Goodwins are there in the workshop?

- 1) The figure in the game
- 2) We all put up our right hand and say 'I am Rupert Goodwins' because it's in the terms of service we agreed to
- 3) The actor playing Rupert, when they put on the jumper
- 4) The real Rupert Goodwins answering questions at the end
- 5) Are there more?

Create two characters, you can look at recent news stories and find character/s to base your writing on. The first one is really worried about cyber security. The second character doesn't think there is any risk or danger about cyber security.

First answer these questions:

What would someone who was really worried about cyber security worry about?
What would they do to protect themselves?
What would they miss out on?
What risks does the second character take?
What might the consequences of those risks be?
How many different types of identity do each of the characters have? (ie they are a son/ pupil/brother/friend/gamer called Squeaky the mouse etc)

Write a short story about how these two characters meet online and then in real life.

Pupils Training Workshop 1 (90 Minutes)

Cyber Security, Leadership and Communication Skills

The 4 capacities

- Successful learners
- Confident individuals
- Responsible citizens
- Effective contributors

“To exercise their responsibilities as members of a community” includes:

- opportunities to participate responsibly in decision making
- to contribute as leaders and role models
- offer support and service to others
- play an active part in putting the values of the school community into practice.

Objectives

To explore the setting for the intervention in the performative workshop

To make the intervention for the performative workshop

To brief the participants about their visit to other classes through the school

(15/20 minutes)

Session Plan

1. Introduction Clare/Freda
(2 mins)

2. Game – (team building) ‘Name click’.
(5 mins)

3. Game – (working together) ‘Can this group?’ Building to creating images and finish in circle (images evolve to ‘situations’ in real life to spark ideas in heads of pupils)
(5 mins)

4. Group work – Brainstorming Put into 4 groups, each with named facilitator. quickly introduce yourselves to facilitator and write the word ‘data’ in middle of sheet. Throw down as many words associated with data that you can on the sheet (paper and pen)
(5 mins)

5. Group work – ‘Consequences’ Creating the key scene. Room check to introduce the term ‘personal data breach’ and establish what we understand it is. In groups choose 3 of your words that:

- are about the sharing of data,
- are very relevant to young people’s lives now
- and your group regard as important.

Select from these 3 the one that most relates to everyday life, the one that you think is most important to young people like you. Think of a situation related to the word you have chosen which explains how important the word is. It must be a moment in real life, frozen. It is about the consequences of not knowing. Everyone in the group must have a role: you must know who you are, where you are and what is happening in the story.
(10 mins)

6. Extending the narrative Make the short scene that happens just before and leading up to that image. Again everyone in the group must have a role – you must know who you are, where you are and what is happening in the story. (The scene ends in the frozen image you made just now).
(15 mins)

7. What's The Story? Lightning share the four stories (with facilitation from Freda) to whole room. Discuss and finish by agreeing on an image/story title/label for each.
(10 mins)

8. The Intervention – explain it and Clare will choose the scenario we will work from. Work out what the data breach is and tell them the scenario for the performative workshop – allocate roles to the groups. Rehearse it.
(20 minutes)

Senior Classroom Mini Workshops Outline Training Plan.

The performers share with the senior pupils the moment in the play when Swipe is introduced. The pupils will experience it again in show as part of their training/ familiarisation.

Mini Workshop Agenda:

- Play Swipe with the class
 - Quiz – run the Cheesy Cyber Security Quiz (ask the questions and share answers when finished).
 - Answer questions about their experience of The Big Data Show
- (15 mins)**

Thank you! If time!
(3 mins)

WHO'S WHO IN THE BIG DATA SHOW?

Person

Role

(CD) Clare Duffy

Creative Director Civic Digits,
Associate Artist Perth Theatre,
Co-director Unlimited Theatre.

(SG) Suzy Glass

Executive Producer

(RG) Rupert Goodwins

Co-writer

(FB) Freda O'Bryne

Creative Learning Director

ORTHUS STUDIO

Director Oliver Smith:

Delivery of the app for use in live performance and workshops.

ETHICS COMMITTEE

Person

Affiliation

Role

(EK) Prof. Ewan Klein (Chair)

University of Edinburgh

Data

(NC) Dr. Natalie Coull

Abertay University

Ethical
Hacking

(LP) Dr. Lynn Parker

Abertay University

Games

(DS) Daniel Sellers

Scottish Government

Cyber
Resilience

(LG) Liz Green

Youth Link Scotland

youth work

PRODUCERS

- Civic Digits C.I.C
- Perth Theatre
- Unlimited Theatre

PARTNERS

- Prewired (coding youth club)
- Edinburgh International Theatre (Creative Learning),
- The Citizens' Theatre (Glasgow, Creative Learning)
- Dr Alasdair Rutherford: Senior Lecturer in Quantitative Methods in Sociology, Social Pol&Criminology, University of Stirling (Setting and evaluation of data literacy test)
- TBDS Ethics Committee (Details given above)
- Abertay University

RESOURCES, FUNDING AND CONTACTS

Civic Digits Download Swipe
Civic Digits teachers pack
Civic Digits Video Resources
Civic Digits PDF Resources
Civic Digits Risk Assessment
Civic Digits Contact

MEDIA

The National: Rupert Goodwins' new Big Data show explores cyber security

Times Educational Supplement: New show hacks pupils' phones to teach online safety

BBC online:

- **Aleks in Wonderland the story of the internet:** This is a great 3 part series that gives a really fantastically accessible history of the internet.
- **Bringing Up Britain** Radio 4 programme: parenting in the age of the smart phone
- **How to avoid Surveillance ... with the phone in your pocket** – Christopher Soghoian
- **Your Smartphone is a Civil Rights Issue** – Christopher Soghoian
- **What Your Devices Know (and hare) About You** – Kashmir Hill and Surya Mattu
- **Take Back Control of Your Personal Data** – Maria Dubovitskaya
- **Governments Don't Understand Cyber Warfare, We Need hackers** – Rodrigo Bijou
- **Gaming Can make a Better World** – Jane McGonigal
- **Youtube Event Testing 'Is Google Listening To You':** "Does Google and Facebook listen in and record conversations and audio even when they're not open? I perform a live test using Google chrome on a Windows 10 PC to discover whether my microphone appears to be recording me even when my browser is turned off in order to better target advertisements."

WEBSITES

Youngscot

- Young Scot is the national youth information and citizenship charity. It provides young people, aged 11 – 26, with a mixture of information, ideas and incentives to help them become confident, informed and active citizens.

Coderdojo

- CoderDojo Scotland is part of a global collaboration that provides free coding clubs for young people.

Codeclub

- Code Club UK is a nationwide network of volunteers and educators who run free coding clubs for young people aged 9–13.

Youth Scotland

- Youth Scotland's work reaches 64,255 young people and supports 7,558 youth workers.

5Rights

- Enables Children and Young People to Access the digital world creatively, knowledgeably and fearlessly.

HM Government Cyber Aware Blog:

Paul Pangaro **'Getting Started Guide to Cybernetics'**

Edinburgh University's Edinburgh Local Initiative linking into City Region Deal.

Netaware Your Guide to the Social Networks Your Kids Use

Fortnite All you Need To Know

Parents vs Kids – who is safer online? Fun Quiz UK Safer Internet Centre
– Top tips for 11 to 19s

Uk Safer Internet Centre – Teachers and staff resources

UK Safer Internet Centre – Parents Guide to Technology

FUNDING

Connecting Scotland

The Connecting Scotland initiative aims to connect up to 9,000 more people on low incomes who are considered clinically at high risk so they can access services and support and connect with friends and family during the pandemic.

<https://connecting.scot/>

Digital Participation Charter Fund

The Digital Participation Charter Fund (formerly Challenge Fund), supported by the Scottish Government and BT, invests in community digital participation projects across Scotland. It provides small grants (typically up to £10,000) to help a range of organisations tackle poverty, social isolation and other forms of inequality in society through embedding essential digital skills development work in day-to-day activity with their service users.

<https://scvo.scot/funding/digital-participation-charter-fund>

Digital Xtra Fund

The aims of Digital Xtra Fund are to:

- Inspire the next generation to understand and create with technology, not simply consume it, by supporting the provision of high-quality extracurricular digital skills activities and helping young people understand the breadth of career opportunities these skills can provide
- Enable exciting digital skills activities for young people across Scotland through our grant awards programme, with a particular focus on groups underrepresented in the digital technologies sector or areas often excluded through lack of resources or local facilities

- Engage our Industry Partners in supported activities, giving industry experts and young people the opportunity to connect in informal and creative settings. Our Partners also participate in the grant awards process by contributing expertise to the Fund's Evaluation Panel

<https://www.digitalxtrafund.scot/>

No One Left Behind Digital Scotland: COVID-19

SCVO are coordinating the effort to mobilise a national digital emergency response team to support those who currently have a lack of access to internet and digital skills during social isolation.

<https://scvo.org.uk/p/36175/2020/03/19/no-one-left-behind-digital-scotland-covid-19>

DevicesDotNow

The new initiative will target the 1.9 million households who don't have access to the internet and are digitally excluded as we face a socially distanced world gripped by COVID-19. You can read more about the project and request devices here.

<https://www.onlinecentresnetwork.org/news-and-activity/news/devicesdotnow>

Chance to Succeed – Our Lottery

Chance to Succeed is funded through the Scottish Children's Lottery. It supports projects that focus on employability and employment skills, helping to deliver a productive future for our young people. Projects or activities they support will work with the most vulnerable young people up to the age of 25 at a demonstrably high risk of being negatively impacted by poverty. Examples of projects or activities they may consider are: employability and skills training within a local community; mentoring or one to one support, building the self confidence and skills required to enter the employment market; provision of and access to the technical equipment required to pursue employment or further education; support to young people who have already been disadvantaged through being care experienced or suffering from a disability.

<http://chancetosucceed.co.uk/our-lottery>

FURTHER LEARNING RESOURCES

Be Internet Legends, Google

To make the most of the internet, children need to make smart decisions. Be Internet Legends empowers younger children to use the web safely and wisely, so they can be confident explorers of the online world.

https://beinternetawesome.withgoogle.com/en_uk

Choice For Life, Police Scotland

'Choices for Life' is a Police Scotland initiative aimed at raising awareness amongst young people aged 11-18, about the dangers of smoking, alcohol and drugs as well as online safety and advice on how to deal with negative peer pressure.

<https://young.scot/campaigns/national/choices-for-life>

Cyber A.C.E.S Program

Palo Alto Networks have created the Cyber A.C.E.S. - Activities in Cybersecurity Education for Students - program. It aims to demystify cybersecurity through interactive learning, equipping kids ages 5 to 15 with an understanding of how to protect their digital future. Cyber A.C.E.S. provides the cybersecurity basics students need to have safer online experiences and become good digital citizens. Lessons are designed so they can be facilitated by anyone, regardless of their knowledge level, with each module tailored to a specific age group.

<https://start.paloaltonetworks.com/cyber-aces.html>

Cyber Discovery

Cyber Discovery is HM Government's Cyber Schools Programme - a free, online extracurricular programme, turning teenagers across the country into cyber security experts.

"Cyber Discovery is the most effective and fun way to master technical skills and security concepts, as a gateway to the industry or just to up your digital skills! As you embark on your journey, you will become an agent for the virtual Cyber Protection Agency, where you will stop criminal gangs who are using their cyber skills to do damage online. You will have a go at real-world cyber attacks, learning how cyber security experts play a vital role in protecting our hospitals, banks, army, and police services!"

<https://joincyberdiscovery.com/>

CyberFirst

CyberFirst is programme of activities helping people explore their passion for tech and computing by introducing them to the world of cyber Security. Each student course is designed to seek out young people like you with potential, offering the support, skills, experience and exposure you need to be the future first line of defence in our CyberFirst world.

<https://www.smallpeicetrust.org.uk/cyberfirst>

CyberLand

The National Crime Agency and Cyber Security Challenge UK have are providing access to their online cyber skills platform CyberLand for free during the coming months. In the game, which is designed to teach the fundamentals of cyber security, players protect the virtual city 'CyberLand' from cyber attacks while learning key skills.

<https://cybergamesuk.com/>

Cyber Security 101, Khan Academy

For every student, every classroom. Real results. Khan Academy is a nonprofit with the mission to provide a free, world-class education for anyone, anywhere. Cyber Security 101 teaches you how to protect yourself and your information on the internet.

<https://www.khanacademy.org/partner-content/nova/nova-labs-topic/cyber/v/cybersecurity-101>

Digi, Aye, Young Scot

Do you know what you're sharing online? Can you spot the scam from the sure-thing? Are you keeping your data secure? Digi, Aye provides a range of online resources covering topics such as:

- how to stay safe on social media
- how to remove unwanted images of yourself online
- how to avoid identity theft
- how to create a positive online presence
- how to make a safe password
- how to talk to your parents about social media
- what laws impact you online
- how to avoid getting scammed
- how to make a customer complaint

<https://young.scot/campaigns/national/digiaye>

DigiKnow, Young Scot

Want to start a career in Cyber Security? Well, 'Digi Know?' is here to help! We've put together a guide filled with fun ways to learn digital skills and alternative ways to get into the industry, as well as info on how to stay safe online!

<https://young.scot/campaigns/national/digiknow>

Digital Skills 4 Girls, Codebase

Digital Skills 4 Girls is a monthly workshop for girls under 18 who want to learn new digital skills or develop existing skills. From coding and gaming to digital design and video, DS4G is a friendly and supportive environment to learn new skills and meet new friends.

<https://www.thisiscodebase.com/event-listings/2020/19/2/digital-skills-4-girls-february-19wanf-6gyk6-66jzs-kdhgj-pmm71-blmm610>

Google's Digital Adventure, Girlguiding & Google

Engineers at Google have created an activity pack and badge for Brownies called Google's Digital Adventure. Girls aged 7-10 can now explore what goes into developing new and exciting technologies and learn essential skills like problem-solving.

From understanding how algorithms work and putting them into action, to creating their very own robot, Google's Digital Adventure will help Brownies learn new skills for a digital future. Brownies will also be able to complete the tasks without a computer, helping to ensure that the challenges are accessible to everyone.

<https://www.girlguiding.org.uk/about-us/our-partners-and-supporters/google/>

Internet Safety for Kids and Families (ISKF), Police Scotland

Internet Safety for Kids and Families (ISKF) program has provided education to parents, teachers, and youth to help prevent and address online risks and teach good digital citizenship. Through partnerships, volunteerism, grants, and donations we've been able to deliver free events communities around the world.

https://www.trendmicro.com/en_us/initiative-education/internet-safety-kids-families.html?wcmmode=disabled%2523news-resources-tm-anchor

Scouts UK & Nominet

Nominet is supporting The Scouts to develop relevant skills and a good understanding of what it takes to be positively active online whilst being safe and responsible. In a world that is ever-changing, the boundary between the digital and the real world is increasingly fading, especially for young people. This exciting and ambitious project started with an important reflection on what we mean by being a digital citizen and what skills and attitudes it involves.

<https://www.scouts.org.uk/supporters/nominet/>

Scottish Qualifications Agency

Internet Safety is a single Unit at SCQF level 4 which teaches the skills and knowledge required to work safely and responsibly online, in the context of activities that are routine and familiar. Candidates learn about the risks of working online and how to safeguard themselves and others. The Unit also covers dealing with unwanted communications, protecting against identity theft, and protecting systems against viruses. This qualification has recently been updated to include a stronger focus on personal safety, online behaviour, social networking and the use of mobile devices.

Internet Safety, SCQF Level 4, <https://www.sqa.org.uk/sqa/34591.html>

Cyber Security Fundamentals at SCQF level 4,

The Award in Cyber Security Fundamentals at SCQF level 4 is designed to be an introduction to the field of cyber security. It covers a wide range of topics from 'cyberhygiene' (personal data security) to 'cyberwarfare' (cyberattacks between nations). It also covers 'cyber-resilience' in the workplace (how to protect businesses from cyberthreats). It will equip learners with basic knowledge and skills relating to cybersecurity which are essential for every citizen.

Learners will gain practical experience of protecting personal digital devices, such as a smartphone or personal computer. The role of social engineering in cyberattacks and the implications of cyberthreats for personal privacy are also explored in this Award.

<https://www.sqa.org.uk/sqa/75487.html>

Digital Literacy, Levels 2-6

Digital Literacies means people have the skills and confidence they need to use technology in their daily lives. All citizens should have the opportunity to become digitally fluent and to help others achieve basic digital skills. To support SQA's Corporate and Social Responsibility strategy, we work in partnership with a range of organisations to help others gain basic digital literacy skills while increasing employability and building confidence. Digital qualifications include:

- NPA Digital Literacy level 3
- NPA Digital Passport levels 4, 5 & 6
- NPA Digital Media levels 4 & 5
- NPA Digital Media Production level 6
- NPA PC Passport levels 4, 5 & 6
- NPA Social Software level 4
- National Unit Internet Safety level 4
- National Unit Computer Basics level 3
- National Unit Computer Basics level 4
- HNC/HND Technologies in Business

Digital Literacy units are also available at SCQF levels 2 to 6. These units develop digital literacy skills for everyday life, learning and work, and allow learners to achieve a range of embedded Core Skills - including Information and Communication Technology (ICT).

<https://www.sqa.org.uk/sqa/74743.html>

Introduction to Cyber Security, The Open University

Discover essential cyber security knowledge and skills, and learn how you can better protect your digital life. On this course you'll learn how to recognise online security threats that could harm you and explore the steps you can take to minimise your risk. The course will improve your online safety in the context of the wider world, introducing concepts like malware, trojan virus, network security, cryptography, identity theft, and risk management. The course is supported by the UK Government's National Cyber Security Programme, is GCHQ Certified Training and IISP accredited.

<https://www.futurelearn.com/courses/introduction-to-cyber-security>

iDEA (Badges in digital, enterprise and employability skills)

The Inspiring Digital Enterprise Award, known as iDEA, is an international programme that helps you develop and demonstrate your digital, enterprise and employability skills for free. Through a series of online challenges, you can win career-enhancing badges, unlock new opportunities and, ultimately, gain industry-recognised Awards that help you stand out from the crowd.

<https://idea.org.uk/>

APPENDIX 1: CURRICULUM

HEALTH AND WELL-BEING:

- engages children and young people and takes account of their views and experiences, particularly where decisions are to be made that may impact on life choices
- takes account of research and successful practice in supporting the learning and development of children and young people, particularly in sensitive areas such as substance misuse
- uses a variety of approaches including active, cooperative and peer learning and effective use of technology
- encourages children and young people to act as positive role models for others within the educational community
- leads to a lasting commitment in children and young people to follow a healthy lifestyle by participation in experiences which are varied, relevant, realistic and enjoyable
- helps to foster health in families and communities through work with a range of professions, parents and carers, and children and young people, and enables them to understand the responsibilities of citizenship (roll out of show in 2019)
- harnesses the experience and expertise of different professions, including developing enterprise and employability skills
(pg. 76 of Curriculum of Excellence)

Experiences and outcomes

- learn about where to find help and resources to inform choices
- assess and manage risk and understand the impact of risk-taking behaviour
- reflect on my strengths and skills to help me make informed choices when planning my next steps
(pg. 79 of Curriculum of Excellence)

ACROSS ALL AREAS: MENTAL, EMOTIONAL, SOCIAL AND PHYSICAL WELL-BEING:

Social well-being

As I explore the rights to which I and others are entitled, I am able to exercise these rights appropriately and accept the responsibilities that go with them. I show respect for the rights of others
HWB 3-09a/HWB 4-09a

Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community
HWB 3-13a/HWB 4-13a

Relationships

I understand and can demonstrate the qualities and skills required to sustain different types of relationships.
HWB 3-44b /HWB 4-44b

Mental and emotional well-being

I am aware of and able to express my feelings and am developing the ability to talk about them.

HWB 3-01a/HWB 4-01a

THE EXPRESSIVE ARTS

- active involvement in creative activities and performances
- tasks or performance opportunities which require a creative response
- opportunities to perform or present to an audience
- partnerships with professional performers or artists and other creative adults
- raising awareness of contemporary culture and connecting with young people's experiences
- appropriate, effective use of technology
- both collaborative and independent learning
- establishing links within the expressive arts subjects and with the wider curriculum
- opportunities to analyse, explore and reflect.

(pg. 56 of Curriculum of Excellence)

Learning in, through and about the expressive arts:

- enables me to experience the inspiration and power of the arts
- recognises and nurtures my creative and aesthetic talents
- provides opportunities for me to deepen my understanding of culture in Scotland and the wider world
- is enhanced and enriched through partnerships with professional arts companies, creative adults and cultural organisations.

(pg. 59 of Curriculum of Excellence)

Drama

I can create, develop and sustain a realistic or stylised character through the use of voice, movement and language.

EXA 3-12a

I can demonstrate sensitivity, precision and depth in the portrayal of a character, conveying relationships and situations in a variety of settings and to different audiences.

EXA 4-12a

In response to a variety of stimuli, I can use my understanding of characterisation to create characters using different approaches, making use of voice, movement and language. I can present my work to an audience.

EXA 4-13a

I can analyse technical aspects of drama and scripts, make informed judgments and express considered opinions on my own and others' work.

EXA 4-15a

LITERACY AND ENGLISH

Experiences and outcomes

I develop and extend my literacy skills when I have opportunities to:

- communicate, collaborate and build relationships
- reflect on and explain my literacy and thinking skills, using feedback to help me improve and sensitively provide useful feedback for others
- engage with and create a wide range of texts in different media, taking advantage of the opportunities offered by ICT
- develop my understanding of what is special, vibrant and valuable about my own and other cultures and their languages
- explore the richness and diversity of language, how it can affect me, and the wide range of ways in which I and others can be creative
- extend and enrich my vocabulary through listening, talking, watching and reading.

(pg. 129 of Curriculum of Excellence)

In developing my English language skills:

I engage with a wide range of texts and am developing an appreciation of the richness and breadth of Scotland's literary and linguistic heritage

I enjoy exploring and discussing word patterns and text structures.

(pg. 129 of Curriculum of Excellence)

Listening and Talking:

Tools for listening and talking:

When I engage with others, I can make a relevant contribution, encourage others to contribute and acknowledge that they have the right to hold a different opinion.

I can respond in ways appropriate to my role and use contributions to reflect on, clarify or adapt thinking.

LIT 3-02a

When I engage with others I can make a relevant contribution, ensure that everyone has an opportunity to contribute and encourage them to take account of others' points of view or alternative solutions.

I can respond in ways appropriate to my role, exploring and expanding on contributions to reflect on, clarify or adapt thinking.

LIT 4-02a

Finding and using information:

As I listen or watch, I can:

- identify and give an accurate account of the purpose and main concerns of the text, and can make inferences from key statements
- identify and discuss similarities and differences between different types of text
- use this information for different purposes.

LIT 3-04a

As I listen or watch, I can:

- clearly state the purpose and main concerns of a text and make inferences from key statements
- compare and contrast different types of text
- gather, link and use information from different sources and use this for different purposes.

LIT 4-04a

Understanding, analysing and evaluating:

I can show my understanding of what I listen to or watch by commenting, with evidence, on the content and form of short and extended texts.

LIT 3-07a

I can show my understanding of what I listen to or watch by giving detailed, evaluative comments, with evidence, about the content and form of short and extended texts.

LIT 4-07a

Creating texts:

When listening and talking with others for different purposes, I can:

- communicate information, ideas or opinions
- explain processes, concepts or ideas
- identify issues raised, summarise findings or draw conclusions.

LIT 3-09a

When listening and talking with others for different purposes, I can:

- communicate detailed information, ideas or opinions
- explain processes, concepts or ideas with some relevant supporting detail
- sum up ideas, issues, findings or conclusions.

LIT 4-09a

I can engage and/or influence readers through my use of language, style and tone as appropriate to genre.

ENG 3-27a/ENG 4-27a

SOCIAL STUDIES

Experiences and outcomes

Learning in the social studies will enable me to:

- develop my understanding of the history, heritage and culture of Scotland, and an appreciation of my local and national heritage within the world
- broaden my understanding of the world by learning about human activities and achievements in the past and present
- develop my understanding of my own values, beliefs and cultures and those of others
- develop my understanding of the principles of democracy and citizenship through experience of critical and independent thinking
- explore and evaluate different types of sources and evidence

- learn how to locate, explore and link periods, people and events in time and place
 - learn how to locate, explore and link features and places locally and further afield
 - engage in activities which encourage enterprising attitudes
 - develop an understanding of concepts that stimulate enterprise and influence business
 - establish firm foundations for lifelong learning and for further specialised study and careers
- (pg. 279 of Curriculum of Excellence)**

People, past events and societies

I can describe the factors contributing to a major social, political or economic change in the past and can assess the impact on people's lives.
SOC 3-05a

I can present supported conclusions about the social, political and economic impacts of a technological change in the past.
SOC 4-05a

I can discuss the motives of those involved in a significant turning point in the past and assess the consequences it had then and since.
SOC 3-06a

Having critically analysed a significant historical event, I can assess the relative importance of factors contributing to the event.
SOC 4-06a

TECHNOLOGIES

- develop understanding of the role and impact of technologies in changing and influencing societies
 - contribute to building a better world by taking responsible ethical actions to improve their lives, the lives of others and the environment
 - gain the skills and confidence to embrace and use technologies now and in the future, at home, at work and in the wider community
 - become informed consumers and producers who have an appreciation of the merits and impacts of products and services
 - be capable of making reasoned choices relating to the environment, to sustainable development and to ethical, economic and cultural issues
 - broaden their understanding of the role that information and communications technology (ICT) has in Scotland and in the global community
 - broaden their understanding of the applications and concepts behind technological thinking, including the nature of engineering and the links between the technologies and the sciences
- (pg. 301 of Curriculum of Excellence)**

Key concepts/significant aspects of learning in the technologies:

- Awareness of technological developments (Past, Present and Future), including how they work.
- Impact, contribution, and relationship of technologies on business, the economy, politics, and the environment.
- Using digital products and services in a variety of contexts to achieve a purposeful outcome
- Searching, processing and managing information responsibly
- Cyber resilience and internet safety
(pg. 305 of Curriculum of Excellence)

Digital Literacy

I can keep myself safe and secure in online environments and I am aware of the importance and consequences of doing this for myself and others.
TCH 3-03a

I can explore the impact of cyber-crime for business and industry and the consequences this can have on me.
TCH 4-03a

Technological Developments in Society and Business

I understand how scientific and technological developments have contributed to changes in everyday products.
TCH 3-05a

I can evaluate the implications for individuals and societies of the ethical issues arising from technological developments.
TCH 3-06a

Computing Science

I can describe the structure and operation of computing systems which have multiple software and hardware levels that interact with each other.
TCH 3-14b

I can explain the overall operation and architecture of a digitally created solution
TCH 4-14b

APPENDIX 2: WHO IS WHO IN THE BIG DATA SHOW?

Performative Workshop Autumn 2020

Directed by Clare Duffy

Written by Clare Duffy and Rupert Goodwins

Performed by Kim Allan and Amy McGregor

Creative Learning Director Freda O'Byrne

Produced by

Civic Digits Theatre Company C.I.C

Unlimited Theatre

Perth Theatre

SWIPE: BIG DATA SHOW APP

made by Orthrus Studio SWIPE Video

Ruth Barrie & Glenda Rome of Waltzer Films

SWIPE Game Design:

Art work: Simon Messer and Abbie Smeaton

Programmer: Dean Sinclair

Ethical Hacker: Nikola Cucakovic

With the support of Dr Lynn Parker. Computer Arts Programme Leader. Abertay University Dr Nataile Coulle. Lecturer in Cyber Security. Abertay University

The Big Data Show partners: The Scottish Government, Creative Scotland, Unlimited Theatre, Perth Theatre, Orthrus, Creative Informatics, Scottish Qualification Authority, Codebase, Abertay, Edinburgh International Festival Creative Learning, Citizens Theatre Creative Learning, Imagine, Prewired, Playwrights' Studio Scotland, Dundee Rep Theatre and Tom McGrath Maverick Award.