

# COMPUTING

AGES 11 – 14  
LESSON PLAN

## CSI MISSING LINKS

### SKILLS COVERED:

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- Online safety
- Data security
- Critical thinking
- Teamwork
- Perseverance

Bring cyber security to life by showing your pupils what it's like to be  
A SECURITY EXPERT TACKLING DANGEROUS CYBER criminals.

#ArmySTEM

# OVERVIEW

1 lesson combining Computing the STEM Accelerator attributes.

Duration: 1x 60 minute lesson

Computing is about more than just using technology, something most young people do naturally, it's about making technology – or using it in creative ways - to provide innovative solutions to all sorts of problems. The world has become increasingly driven by technology and it is considered that nearly every future career will involve computing skills in some shape or form, making computing one of the most important stem subjects.

Due to the prevalence of technology, cyber security is one of the greatest opportunities and threats humanity knows. Your pupils will already use computers on a daily basis, but probably don't pay much attention to personal data, or even know what it is! It's time to change that and this lesson is a great place to start.

Bringing together elements of both the IT and computing curriculum it will also build in your pupils the Army-inspired attributes of critical thinking, teamwork and perseverance.

Computing is also used extensively by the Army for a whole number of purposes including cyber security and analysing data to produce mission-critical intelligence.

## PUPIL OBJECTIVES

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- I understand the importance of guarding personal data and how personal data can be collected and used for different reasons
- I can identify why I should keep my personal data secure and can give examples of how to do that
- I can work in a group in a high pressure, time-sensitive situation
- I can explain how different types of computing can be used in a practical, real-life setting

## ATTRIBUTES DEVELOPED

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### Critical Thinking

Pupils will become more confident in their ability to process and analyse information and data in order to make more informed decisions.



### Teamwork

Pupils will develop their ability to work in a team thus improving their communication and collaborative work skills in order to achieve a common goal.



### Perseverance

Pupils will become more resilient to knock-backs as they develop the grit, determination and patience to succeed when previously they may have given up.



# LESSON

## INTRODUCTION

 20 mins

The introduction will cover what data security is, including what your pupils already know, before running an exercise that will explore how easy personal data is to obtain.

**Go through the first half of the PowerPoint presentation before asking:**

- What is personally identifiable data?
  - What laws do you believe control data use?
  - What types of internet presence can you have? (Facebook, email etc.)
  - What kind of personal information do you need to set up a social media account?
  - What kind of personal information can people find out from knowing how to find you? (via email, via Facebook etc.)
  - What are the positives about having an internet presence?
  - What are the negatives?
1. Ask the class to tell you what their passwords are and see if they volunteer the information. If any of them do, tell them they've failed the secret test. If none of them do, congratulate them for being fast learners.
  2. Talk about common passwords and what people do to work them out. Common issues with passwords being discovered include:
    - Physically writing them down
    - Using common things like: 'password', '12345', 'qwerty' etc.
    - Pets names, road names, dates of birth and other obvious answers.
  3. Set the scenario for the practical exercise by using the second half of the PowerPoint slide.

## SCENARIO

There is a dangerous cyber criminal on the run, known only as 'The Atom Smasher'. He is using his knowledge of the country's nuclear power plants to wreak havoc on the power grid.

Word has it, The Atom Smasher has left the country and is planning his next cyber attack from a new country.

**To stop him, you need to find out:**

- Who they are
- Their date of birth
- Their email address
- Their home address
- Their occupation
- Their work address

# LESSON

## MAIN ACTIVITY

 25 mins

In the exercise, the class will learn how easy it is to get personal data from physical objects such as bank cards and utility bills. To complete it, you will need to print off both the 'hard copies' and the 'evidence log' (see teaching notes).

1. Split your class into four groups of five or six.
2. Set the scenario by using the video (data types and the Royal Military Police).
3. Draw their attention to the printed 'hard copies' across your ICT suite\*.
4. The groups will then explore the suite and find the hard copies to make a note of everything they can learn filling out the evidence worksheet as they go.
5. Explain why pretending to be someone else online is against the law and ask:
  - How would you feel if someone did this to you?
  - Everything is online now - what would happen if someone got hold of your password(s)?
6. Once the class have found each of the hard copies, they will be able to work out the password for the locked computers / laptop in the ICT suite.
7. The winning team will crack the password (which is in the form of an acrostic poem) first.

## PLENARY

 15 mins

Once the groups have reassembled:

1. Ask the leaders of each of the groups to stand up.
2. Each group leader will have two minutes to reveal what they have found.  
Successful groups (when prompted) will be able to explain:
  - What they have found out about 'The Atom Smasher'
  - Where he is planning his next attack
  - How they found out the information above

Encourage unsuccessful groups to talk about how they would have operated differently.

3. Finish the session by reviewing what data is, how it can be used and why it should be protected.

## ASSESSMENT OPPORTUNITIES

- Pupils can identify and explain what personal data is, how it can be used and how it can be found out
- Pupils can identify how to keep their personal data safe and can explain why this is important
- Pupils can use their knowledge of personal data to correctly identify various pieces of information as explained in the main activity

# INSTRUCTIONS FOR TEACHER & IT TECHNICIAN

## BEFORE YOU START

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This is a lesson that will require the help of an IT technician, if you have access to one. It will also require you to set up different corners of the IT suite. Download and print out black and white copies of the resources listed below and scatter them around the suite. Make sure some of them are well hidden (the bin, the printing tray and the floor are good hiding places!).

## RESOURCES

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- Download lesson introduction film
- Download CSI Missing Links PowerPoint presentation

### To print:

- Evidence log - two per pupil
- Hacker messages
- Term cards
- Hacker profile
- Resources for gathering data

1. Facebook profile
2. Email account
3. Passport
4. Utility bill
5. Credit card application
6. Invoice

**PLEASE NOTE:** this will be used for both activities: to collect evidence in the introduction and to crack the code in the main activity using an acrostic poem.

## SET UP:

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- Four password-protected laptops and chargers or four PCs
- The 'Hacker Profile' PDF

The aim of the main activity is to crack the password of the laptop, which will then open onto a PDF of the hacker profile.

1. Fully charge each or make sure the computers are turned on.
2. Set up a new user for each called 'The Atom Smasher'.

3. Set the password for that user as 'DA0BNS' (an acrostic of the answers they will have from the 'hard copies' in the introduction).
4. Either open the 'Hacker Profile' pdf in an image viewer OR set it as the desktop wallpaper for each laptop or PC.
5. Put the laptops in 'sleep' mode with the images still open. When the pupils crack the password, it will be the first thing they see when it boots up.
6. Set up the 'cyber crime scenes' with the laptops or PCs, the hacker riddles and the hard copies.

## HINT:

Make your desk off limits, otherwise your pupils may mistake other pieces of paper for 'evidence' (make sure you put them in interesting places).





# LIKE THE LESSON PLAN?

## WOULD YOU LIKE THE ARMY TO VISIT YOUR SCHOOL?

BOOK YOUR FREE WORKSHOP BY CONTACTING  
[RG-NRCOUTREACHADMIN@MOD.GOV.UK](mailto:RG-NRCOUTREACHADMIN@MOD.GOV.UK)

Show us how you and your pupils are doing!  
Send your pictures, videos and feedback to us via:

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