ITTE/MIRANDANET 32ND INTERNATIONAL CONFERENCE

THURSDAY 7TH JUNE - FRIDAY 8TH JUNE, 2018

UNIVERSITY OF WINCHESTER

Raising aspirations for digital education

Opening Conference Debate

ENHANCING LEARNING AND TEACHING WITH TECHNOLOGY: WHICH INNOVATIONS APPEAR TO WORK?

itte

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Journey towards teachers' ownership of the teaching and learning technology

Teaching IT without computers,
Croydon Information Technology programme
1980

Teaching with Computers
Microelectronics programme 1981
TVEI computer network room, Croydon School

Teaching teachers about computers 1987
Teachers involved in product design
With Acorn BBC Micro in Assembler designed 2 adventure games at Education Computing Unit, Kings College under Margaret Cox
Croydon LEA adviser

Struggling between RM 186PCs and Apple Technology
ILLEC

Not just a load of old Tosh!
Set up the MirandaNet Fellowship
Laptops for teachers, Nottingham University and Becta
Institute of Education, University of London 1992

DE MONTFORT UNIVERSITY LEICESTER

Dr. Christina Preston,
Associate Professor of Education
Institute for Education Futures
De Montfort University
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mirandanet.ac.uk

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Enhancing Learning and Teaching

- Bob Moy: Developing Tray
- New pathways for Shakespeare
- Adventure games
- Laptops and tablets for teachers
- Laptops and tablets for pupils
- E-books for boys who are reluctant
- Quizzes
- Think.com social networking for pupils
- Homework software that parents can access
- Software that engages parents in their child's progress
- Interactive video
- Animated graphics to teach scientific thought
- Children blogging and creating websites
- The value of virtual reality
- Learning machines. Is this now AI?
- Microphones for teachers and pupils
- **Video based professional development..**

Other reports can be found here
https://mirandanet.ac.uk/about-associates/associates-research/

Enhancing teachers' learning

Professor Rose Luckin, London Knowledge Lab, UCL/IOE argues that the final section, 6, is the most important because it highlights the key role that educators play in helping learners to become successful at learning as well as knowledgeable about core curriculum subjects and essential skills. Chapter 6.3 highlights the complex nature of teaching

Teachers have to make difficult decisions 'on the fly' which requires **adaptive metacognition.**

Evidence illustrates that practitioners adaptive metacognition and professional decision-making competencies can be developed. Surely we must therefore invest in the formal frameworks, reflective routines and communities of practice that have been shown to scaffold practitioners to develop these competencies.

Porayska-Pomsta K., Preston, C., Laerke Weitze, C. and Younie, S. (2017) '*How can we provide educational practitioners with the expertise they need?*' In: What the Research Says, Rose Luckin (ed). Routledge

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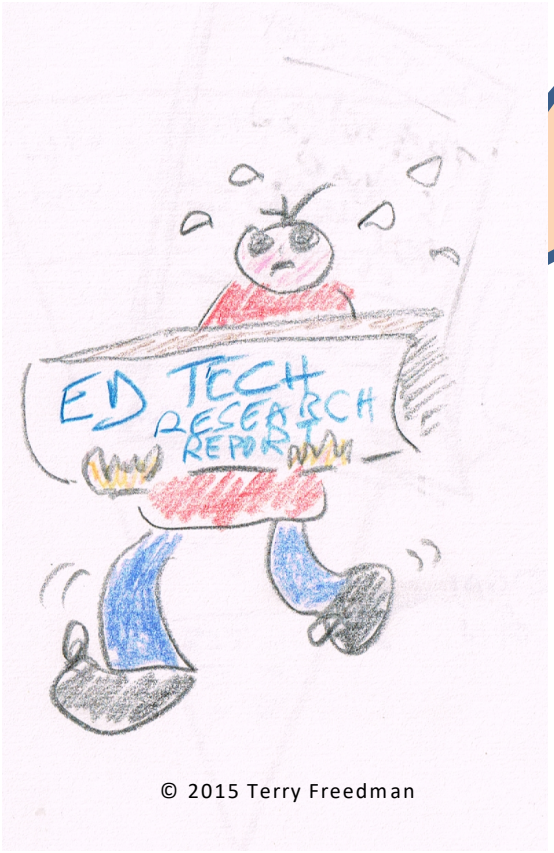
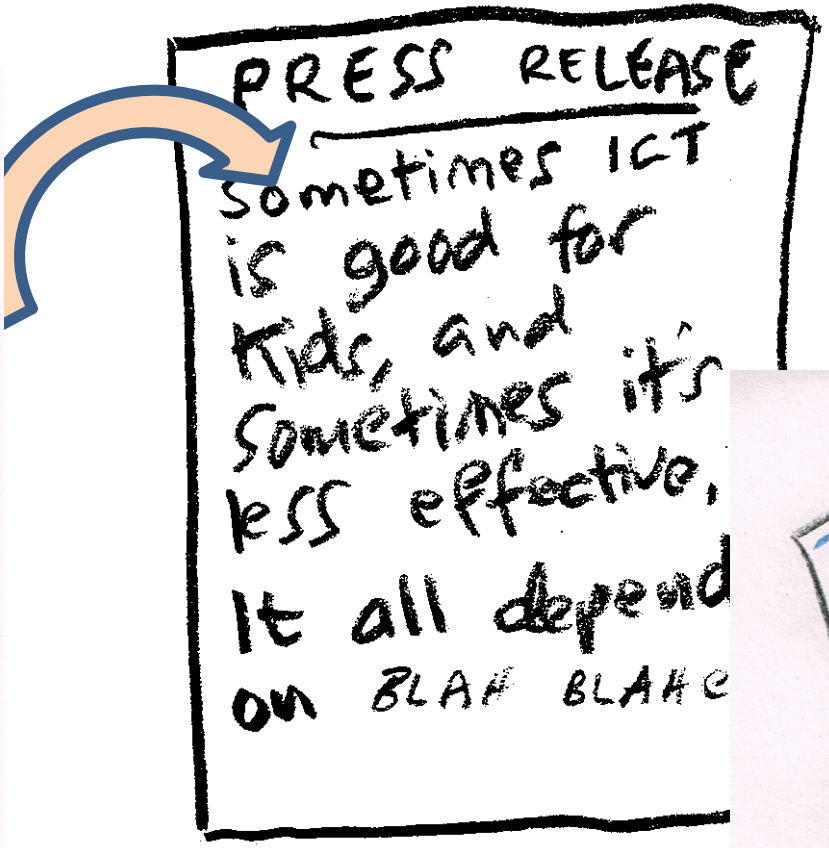
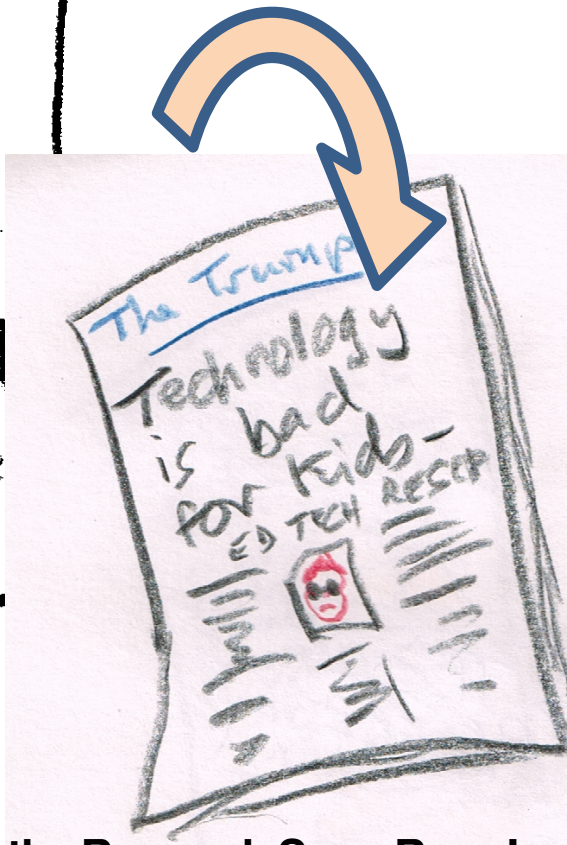
iris connect
discover. develop. share.

The challenge: from research to news is a process of taking out details, and so distorting the findings







How to get the real story

Ideal: read original report

Next best: read Executive Summary

At a pinch: read the press release (again)

Terry Freedman

Independent writer, trainer, speaker, consultant

In education since 1975

www.ictineducation.org
Digital Education Newsletter: www.ictineducation.org/diged
@terryfreedman

Your role in edtech, key information about your organisation, relevant references

- Advisory Teacher for ICT/SEN and Inclusion in Tower Hamlets
- Author several books
- Consultant for various projects
- “Learning with Handheld and Mobile Technologies” (2015) with John and Mactaggart
- “Harnessing technology for personalised learning and every child matters” (2009)

The challenges that you face

- Bringing a focus onto Person Centred approaches
- Lack of training
- Attitudes to assistive technology
- Trust

The solutions that you suggest

- Implementation of Universal Design for Learning (UDL)
- Time travel
- A system that works for pupils not for itself
- Trust

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Raising aspirations for digital education

Debate 1: Thursday 5:15-6:15pm

Enhancing Learning and Teaching with Technology

How AUTOGRAPH can enhance understanding of core principles in mathematics through dynamic visualisation

DOUGLAS BUTLER FIMA

iCT Training Centre, Oundle (UK)
TSM training workshops
Lead Author, *Autograph*

www.tsm-resources.com

DOUGLAS BUTLER

1. My role and key information about my organisation

- For the past 25 years I have been running popular 3-day residential workshops and one-day events on "Technology for Secondary Mathematics"
- Developing and supporting the dynamic software "AUTOGRAPH" for KS3-5.
- Regular technology sessions given to many PGCE Mathematics courses

DOUGLAS BUTLER

2. The challenges that I face

- Mathematics teachers today face a kaleidoscope of digital options that is leading the majority to use none of it. Added to which many open-source titles are quite complicated to use. AUTOGRAPH needs to address this hostile environment.

- The digital environment is shifting from 'mouse and keyboard' to 'touch', and this is a step backwards in the use of dynamic geometry, which needs easy click and drag and multiple selection. AUTOGRAPH is developing an HTML version that overcomes this.

- Mathematics teachers use ICT more intensely than other subjects, so it is vital that any school-wide solution takes this into account – in particular it is quite common, and far from ideal, to force a mathematics department to use only tablets. Also iPads are 4:3 aspect which is incompatible with modern projectors and TVs.

DOUGLAS BUTLER

3. Suggested solutions

- AUTOGRAPH has evolved over the past 20 years and developed a user interface that is popular with teachers and students: a simple 'select and right-click' approach

- Important topics can be taught and learnt more efficiently and more effectively using AUTOGRAPH. Efficiently: more examples and can be explored in less time. Effectively: tricky topics such as Histograms and 3D vectors can make a lot more sense with this technology.

- Training is vital. With off-campus training becoming severely limited, CPD has to go online, using videos.

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A collaborative book chapter on the development of computational thinking in the Czech Republic and in England

Book chapter title:
"The new Computing curriculum in England"

Mirka Černochová: Assistant Dean, Faculty of Education at Charles University in Prague, Department of Information Technology and Technical Education; member of the Czech Ministry of Education consultative body

Lawrence Williams: former lecturer, PGCE and MA courses at Brunel University London; MirandaNet Council

The challenges that we face

- Training teachers to cope with the new demands of computer science, and of computer coding in particular
- Developing a creative environment for learning coding within a cross curricular, constructionist framework

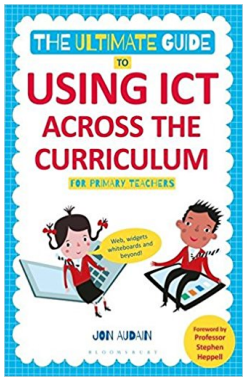
The solutions that we suggest

- Aligning computational thinking projects with literacy, art and music to encourage **creative engagement**
- Developing **cross-curricular teaching approaches** which include coding in Logo, Scratch, and Python
- Developing **sequencing activities** ("unplugged") which support coding activities

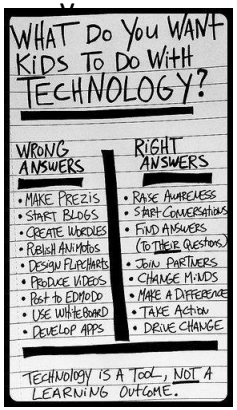
See: www.literacyfromscratch.org.uk

http://www.worldecitizens.net/literacy-from-scratch/literacy-from-scratch/

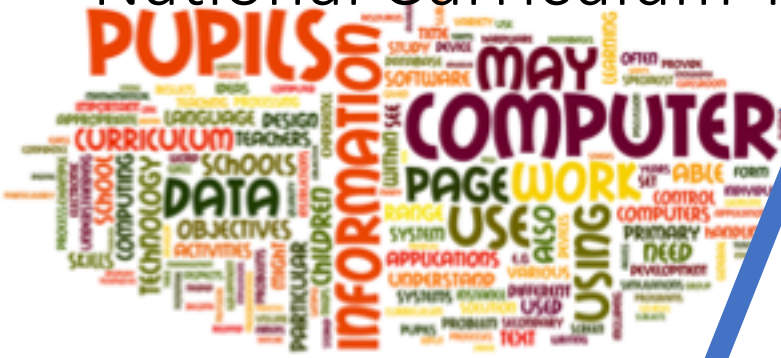
http://www.worldecitizens.net/literacy-from-python/



- Iwbs
- VLEs
- Mobile technolog



National Curriculum Timeline



Information technology from 5 to 16
HMI Series: Curriculum Matters No. 15
London: Her Majesty's Stationery Office

1989

Objective (i): Communicating ideas and information

Objectives (ii) and (iii): Information handling

Objective (iv): IT representations of real or imaginary situations and mathematical calculations

Objective (v): The aesthetic aspect of the curriculum

Objective (vi): Designing, making, measuring and controlling in the physical environment

Objective (vii): Some consequences of IT for society and the individual

1995

Breadth of study –KS1
5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
1.a working with a range of information to investigate the different ways it can
2.be presented [for example, information about the Sun presented as a poem,
3.picture or sound pattern]
4.b exploring a variety of ICT tools [for example, floor turtle, word processing
5.software, adventure game]
6.c talking about the uses of ICT inside and outside school.

1999/ 2000+

he National Curriculum
ndbook for primary teachers in England www.nc.uk.net

Programme of study: information and communication technology

Knowledge, skills and understanding
Finding things out
Developing ideas and making things happen
Key stages 1 and 2
Exchanging and sharing information
Reviewing, modifying and evaluating work as it progresses

Breadth of study – KS2
5 During the key stage, pupils should be taught the **Knowledge, skills and understanding** through:
1.a working with a range of information to consider its characteristics and
2.purposes [for example, collecting factual data from the internet and a class
3.survey to compare the findings]
4.b working with others to explore a variety of information sources and ICT tools [for example, searching the internet for information about a different part of the world, designing textile patterns using graphics software, using ICT tools to capture and change sounds]
5.c investigating and comparing the uses of ICT inside and outside school.

The challenges that you face

Social Media

Creative uses of technology

Digital Leaders / Digital Senate

ICT Hospital

Developing my own digital community

Computer Science

Digital Citizenship

Working together across the web

Individual Paired Group Targeted -Runner

Interactive Technologies

Taught skills

Technical - IT Skills base

Creating & Presenting Ideas

Key Computer Skills

Mobile Working

Evaluating Information

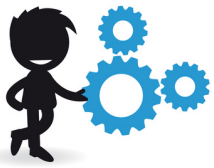
Using data

Verbal and written communication

People

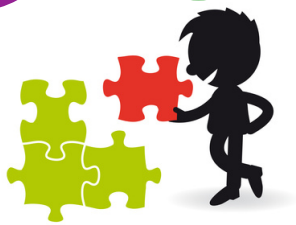
Places

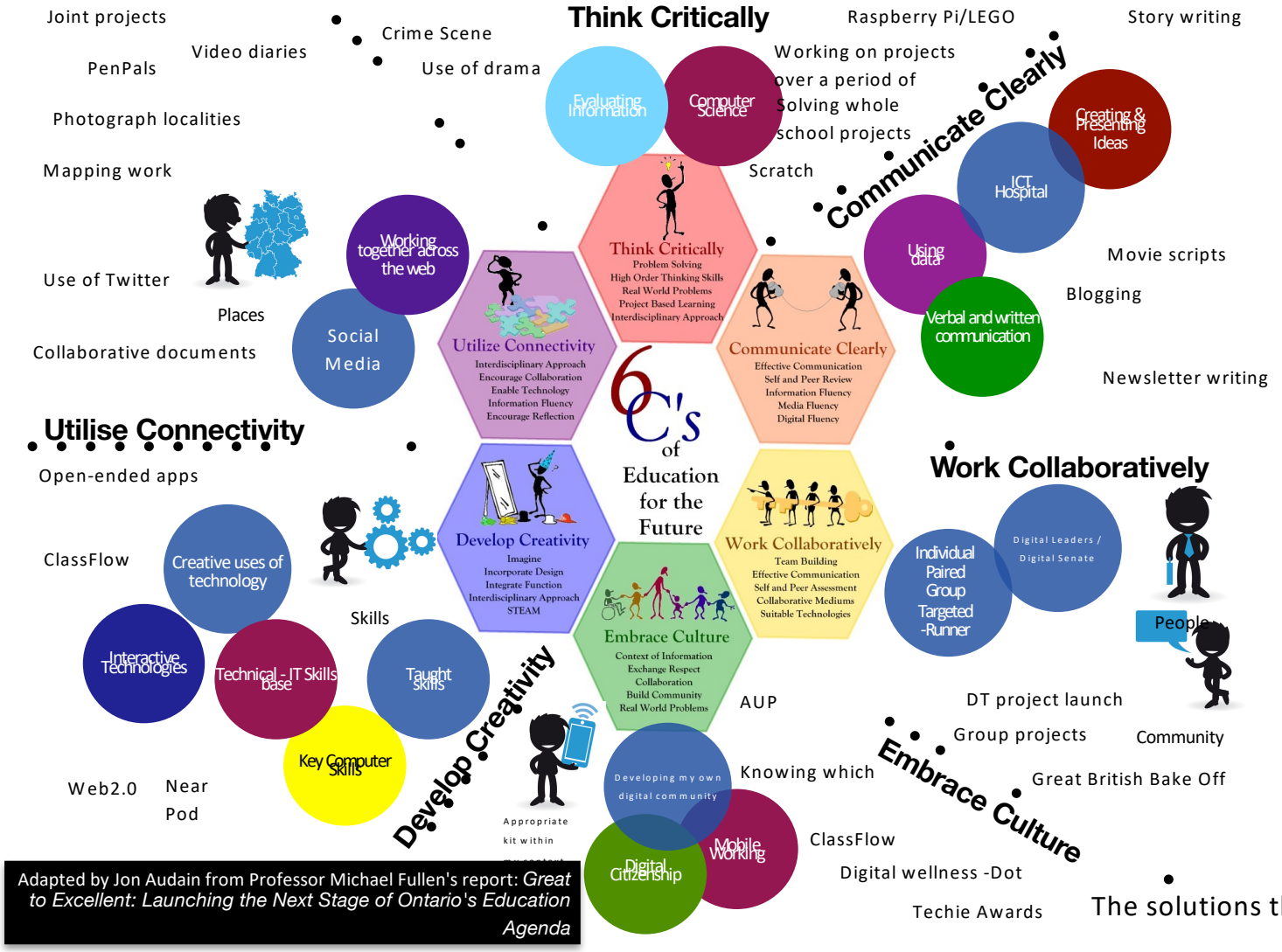
Appropriate kit within my context



Skills

Community




Joint projects
Video diaries
PenPals
Crime Scene
Use of drama
Photograph localities
Mapping work
Think Critically
Raspberry Pi/LEGO
Story writing
Working on projects over a period of Solving whole school projects
Scratch
Evaluating Information
Computer Science
Communicate Clearly
Creating & Presenting Ideas
ICT Hospital
Using data
Movie scripts
Blogging
Verbal and written communication
Newsletter writing
Use of Twitter
Places
Collaborative documents
Working together across the web
Social Media
Think Critically
Problem Solving
High Order Thinking Skills
Real World Problems
Project Based Learning
Interdisciplinary Approach
Utilize Connectivity
Interdisciplinary Approach
Encourage Collaboration
Enable Technology
Information Fluency
Encourage Reflection
Communicate Clearly
Effective Communication
Self and Peer Review
Information Fluency
Media Fluency
Digital Fluency
6 C's of Education for the Future
Utilise Connectivity
Open-ended apps
Develop Creativity
Imagine
Incorporate Design
Integrate Function
Interdisciplinary Approach
STEAM
Work Collaboratively
Team Building
Effective Communication
Self and Peer Assessment
Collaborative Mediums
Suitable Technologies
Work Collaboratively
Digital Leaders / Digital Senate
Individual
Paired
Group
Targeted
-Runner
People
ClassFlow
Creative uses of technology
Skills
Interactive Technologies
Technical - IT Skills base
Taught skills
Key Computer Skills
Web2.0
Near
Pod
Develop Creativity
Embrace Culture
Context of Information
Exchange Respect
Collaboration
Build Community
Real World Problems
AUP
DT project launch
Group projects
Community
Great British Bake Off
Knowing which
Developing my own digital community
Appropriate kit within
Mobile Working
Digital Citizenship
ClassFlow
Digital wellness -Dot
Techie Awards
Embrace Culture
The solutions that you suggest
Adapted by Jon Audain from Professor Michael Fullen's report: Great to Excellent: Launching the Next Stage of Ontario's Education Agenda

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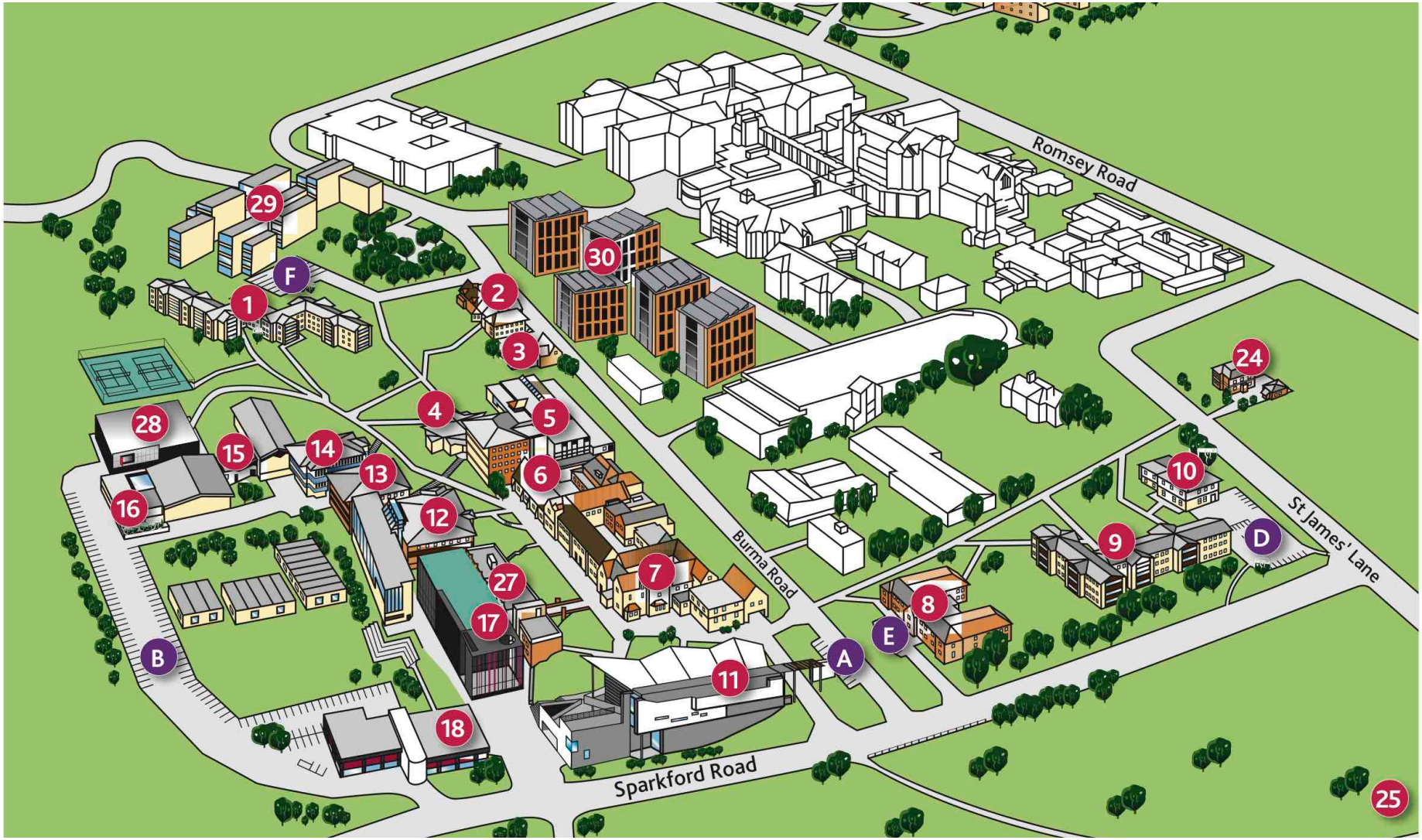
Romsey Road
Burma Road
St James' Lane
Sparkford Road
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