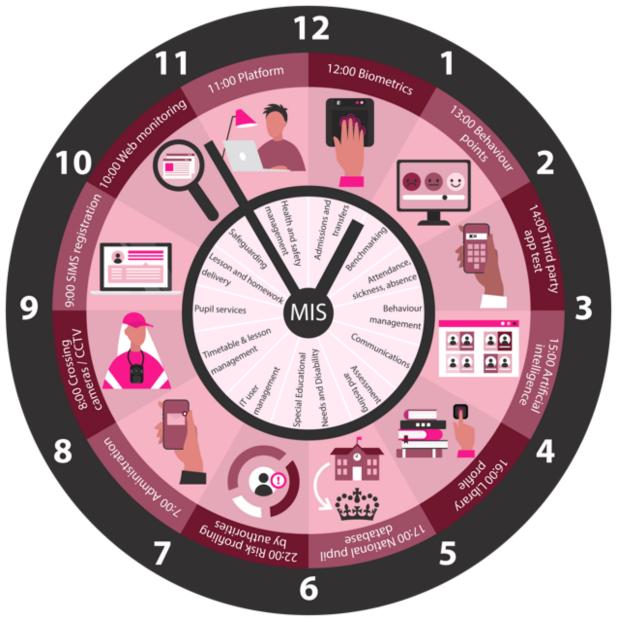## A: A day-in-the-life of a datafied child in state education

From before breakfast to bedtime and beyond, a pupil's personal data are collected and may be transferred to hundreds of third parties in one day and thousands across their lifetime education. For school administration and central information management systems, and for communications, and use by local and national pupil databases. By apps, platforms, cashless payment systems, including biometrics, special educational needs and disability, and health data. On behavioural platforms, in exams and tests (state mandated and with a wide range of commercial test suppliers), in safeguarding software, seating plans, borrowing library books, and at after-school clubs. On CCTV, classroom cameras, lesson capture tools, and classroom and patrol bodycams. And even at home, for their homework, logged into school accounts, and around the clock. There is no way a child can understand or track their digital footprint by the time they are 18 or have any ability to reclaim control over it.

B. What do we mean by personal data in education?

i.Only a small part of the data about a child is provided by the child or family. A vast amount of data in schools is ascribed by staff and may not only be fact based, but can also be, observed, derived and inferred. Commercial companies interact daily with a child through

- **School information management systems** (SIMS systems)
  Around fifteen key UK providers, many cloud based, provide schools with core pupil administrative data management systems, based on a lifetime unique ID pupil number. Systems hold hundreds of items of data about each child and transfer individual level data between schools via the electronic CTF (Common Transfer File).
- **Third-party apps, platforms, biometrics, CCTV and classroom camera systems**
  SIMS systems also distribute pupils' and parents' personal data held by schools, to a huge range of third parties. The market of commercial providers to schools that process children's personal data is largely unseen by parents. A survey of parents in England we commissioned in 2018, found that only half of parents agree they had enough control of their child's digital footprint, and one in four parents said they do not know if their child has been signed up to any systems using personal data at all.
- **National and regional data extractions**
  SIMS systems distribute pupils' and parents' personal data held by schools, to other public bodies, some nightly, some termly or annually. These data may be processed by machine based algorithms to analyse a variety of data, and linked with other public sector data about the child and their family, such as third-party sources via social media, location data and records of activities in order to score and risk profile people for example in terms of their behaviour, state of health, or safeguarding.

ii. Parents' details are stored alongside children's personal confidential data in core school information management systems, and some, such as email address, have become routinely distributed to third parties without sufficient due diligence or understanding of the companies' commercial purposes behind the tools. Parents cannot see data created and inferred by the companies through the use of the product, such as profiling from IP address. 'Free' commercial third party actors are built on often business models that charge parents for access to additional educational content and activities about their children using data gathered in the classroom, to pitch products to them at home directly via their email.[1] There is a postcode lottery of how these affect children's privacy. For example, an app on the red 'declined list' used by the Dundee Local Authority, may be widely used in schools in England. And in England some schools may have a due diligence policy, in others teachers may decide individually which apps to use, or whether to become a "Google Certified Educator" or "Apple Distinguished Educator" and introduce their schools to new providers.

iii. Commercial data processing of children's (and their families') personal confidential data is carried out 24/7 and 365 days a year, not only during school hours, and can continue unseen long after they leave compulsory education, and for life.

iv.Many policies in practice stretch beyond the school premises and activities. For example in school safeguarding surveillance software which may be invisibly present on school issued laptops, personal devices or switched-on in personal spaces, out-of-school hours, and monitor private and family life at home.

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[1] Class Dojo, *Now With Revenue, ClassDojo Raises $35 Million to Expand to Homes Across the World*, (EdSurge February 2019) https://www.edsurge.com/news/2019-02-28-now-with-revenue-classdojo-raises-35-million-to-expand-to-homes-across-the-world

C. National pupil data distribution for commercial re-use (England)

i. Indirect re-use of state data collections of individual pupil level data, which are given away to commercial companies, begins as soon as a child's personal data is sent to the four Departments for Education in the compulsory termly census which parents' never see.

ii. England has the most egregious harms to privacy in terms of national government data releases to commercial companies. Each school census collection feeds as one of twenty five datasets merged into the National Pupil Database, now holding over 21 million named individual records.Children's personal data have been copied and passed on by the DfE since 2012 to thousands of commercial 'researchers', including for linking information at pupil level and developing predictive tools. Commercial re-use by analytics firms,[2] think tanks and charities, account for more than 40% of use by third-parties.[3]

iii.These include companies such as Mime Consulting who boast that they can,
> "track a child in England, anywhere they go [in the school system]."[4]

iv.The data when released to third-parties, are not anonymous, but are detailed, sensitive[5] and identifying.[6] Each release can include several million individual records.Schools Minister Nick Gibb confirmed in January 2018 that,
> "*According to centrally held records at the time of writing, from August 2012 to 20 December 2017, 919 data shares containing sensitive, personal or confidential data at pupil level have been approved for release from the National Pupil Database.*"

v. There is no transparency of the volume of how many children's data have been given away in each approved release, because,
> "*the Department does not maintain records of the number of children included in historic data extracts.*" (PQ109065)

vi. The Department is aware that they share and distribute too much data with third party users, calling it an 'excessive' amount of data in the underlying datasets'.
> "*Users are required to download the entire dataset, then remove and manipulate extraneous data reducing it to a specific subset. Many expressed a desire to be able to customise the data they downloaded.*"[7]

vii. A summary Data Protection Impact Assessment published by the Department for Education in May 2019 for the first time, also revealed risks about the scope of use of personal information and people are not aware of its use:
> "*is not restricted due to insufficient governance controls,*"…"*may not be aware that their personal data may be shared with other organisations.*"

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[2] Such as Mime Consulting who boast that they can "track a child in England, anywhere they go [in the school system]"
https://www.mimeconsulting.co.uk/sectors/school-improvement/ See case studies:
http://defenddigitalme.com/wp-content/uploads/2017/03/MimeConsulting.pdf or Angel Solutions
http://defenddigitalme.com/wp-content/uploads/2018/02/Angel-Solutions-Ltd.pdf
[3] defenddigitalme analysis of over 1,000 releases http://defenddigitalme.com/wp-content/uploads/2017/10/parties_split_pie.jpeg
[4] Case study on Mime Consulting https://defenddigitalme.com/wp-content/uploads/2017/06/Mime_Consulting.pdf
[5] Sensitive data include SEND data, ethnicity and reasons for exclusions
http://defenddigitalme.com/wp-content/uploads/2018/01/reasons_exclusion.jpg
[6] Written parliamentary question 120141 January 2018
https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2017-12-18/120141/
[7] DfE data dissemination discovery report, July 2018 (Page 29)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721729/HiveIT_-_DfE_dissemination_discovery.pdf

viii. When it comes to a child's personal data being passed from a school to third parties or to the Department for Education (DfE) and onwardly shared, parents want to be asked for consent. Survation[8] asked 1,004 parents of state-educated children age 5-18 on behalf of defenddigitalme, between 17th – 20th February 2018 about their understanding of which technologies are used, and how data are used. Most strongly parents consider children's special educational needs data merits extra consideration, before a school passes that sensitive information on to the Department for Education (DfE) for secondary re-uses.

- 81% of parents agreed that parental consent should be required before a child's special educational needs data is shared.
- 60% parents agreed parental consent should be required before schools pass data to the DfE National Pupil Database.
- 65% agreed the Department for Education should have parental consent in order to pass children's personal data to commercial data analytics companies.
- Over three quarters (79%) if offered the opportunity to view their child's named record in the National Pupil Database would choose to see it. The Department cannot meet requests adequately.
- While parents give the Department for Education a high level of trust to use data well (68%), almost the same number of parents (69%) said they had not been informed the DfE may give out data from the National Pupil Database to third parties.

D. Higher Education: commercial companies and data re-use

i. In Higher Education, marketisation is driving a perceived need for demonstrable metrics created from reusing student data collected as part of the admissions process, or everyday studies. This is fulfilled in UK universities by local and cloud based tools; such as but not only: Altryx, Blackboard, Brightspace, Business Intelligence/Open Text, Civitas, Google Analytics, Google Data Studio, Heidi Plus, IBM, JISC, MATLAB, Minitab, Ms Excel, MSSQL Stack, Cognos, Oracle SIA / BIE, Panopto, Piwik, Power BI, Pyramid, QlikView, SAP Business Object / Business Warehouse, SEATS, SQL Data warehouse, SSRS, Starfish, Stata, Stream / SolutionPath, Tableau, Tribal, and USW.

ii At the time of writing, personal data processing at scale appears to be ramping up at pace. In part this is due to government and press generated pressure to monitor students under well-being frameworks, but that could arguably largely be seen to be about reputational risk.

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[8] The survey was commissioned as part of defendigitalme's work in a review of children's data privacy in education for The State of Data 2018. https://defenddigitalme.com/2018/03/only-half-of-parents-think-they-have-enough-control-of-their-childs-digital-footprint-in-school/

E. Dundee County Council, Scotland edtech governance

Software/technology considered by the Dundee ICT Governance Group within the Scottish Education Service regarding its educational suitability and application.[9]

i.Declined for use in Education by Dundee County Council, Scotland

Adobe Spark Video	Federation of accounts - will be reviewed
AdobeSpark Page	Federation of accounts - will be reviewed
Baby Mozart	Very little content on free level
Basic Calculator Plus	Calculator Pro available
BasicCalculator +	Alternative app already provided
Bowling King	Little free play
Brilliant - Solve, Learn, Grow	Requires Google G Mail account which host data outwith EU, GDPR Review would be required
Calc HD Pro	Alternative that matches issued
Calculator (App Town)	Alternative available
Cool Faces	Ts & Cs state for 17+, alternative apps added to directory
Dino Hospital by Joy Preschool	Only one activity is free and it has limited interactivity, alternative apps available in catalogue
Ditty	Ts & Cs state for 13+ and Data in US
Fluidity	Please specify which app, many with the same name appear.
Four In A Row	Advert issues, game is built into all Promethean boards and panels (free)
Hungry Fish	No curricular impact
Learn HTML	Requires Google G Mail account which host data outwith EU, GDPR Review would be required
Leo AR	16+, automatic public sharing of content
Masquerade	Ts & Cs state for 13+ data in US
McLaren Studio Animation	App could not be found in store, alternative apps issued
Minecraft	Minecraft EDU added instead
Numberlines by littlemonkey	This app couldn't be found, please resend with link if possible please if it is still required.
Our Story	Doesn't run well and other apps provided
Pocket Video Editor	Built in features, iMovie alternative, Ts & Cs state 13+, Data in USA
Py	Requires Google G Mail account which host data outwith EU, GDPR Review would be required
Record It!	Ts & Cs state for 12+, iPads already have built in screen recorder
Roblox	Ts & Cs state for 12+, High Risk App and alternatives are available
Ruler Ar – Camera, Measure, Tap	Alternative available
Ruler- Tape Measure Length	Adverts make it unusable
Subway Surfer	Ts & Cs state for 9+, no curricular impact
Teachers Pet Classroom Display	App Not Functioning (takes user to incorrect sites)
Temple Run	Ts & Cs state for 9+, no curricular impact
Times Table Rock Stars	GDPR
ToDo Maths	Very little content on free level, GDPR
Turtle Diary	Data stored in US, alternative apps available, non GDPR compliant currently
Twitter	Web only use please
VisionSim by Braille Institute	Not available via UK Store (only available in US store)
Whiteboard Brush	Microsoft Whiteboard app is available to all with same/ very similar functionality, OneNote or Explain Everything

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[9] Obtained via Freedom of Information Request, June 2019 (included as provided (sic) by Dundee City Council in response to FOI. Unedited, and the county council approval or declined status, does not reflect the opinion of defenddigitalme)
https://www.whatdotheyknow.com/request/edtech_provider_approvals_proces_5

Whiteboard Note	Microsoft Whiteboard app is available to all with same/ very similar functionality, OneNote or Explain Everything
Word Connect	Ts & Cs Say 13+,alternative apps available
Word Connect 2	Ts & Cs Say 13+,alternative apps available
Word Cookies	Ts & Cs Say 13+,other apps available

ii. Approved apps for use in schools by Dundee County Council

Apple App Title	Folder Allocation When Installed	Cost
Excel	Microsoft Folder	Free - Installed
Office Lens	Microsoft Folder	Free - Installed
OneDrive	Microsoft Folder	Free - Installed
OneNote	Microsoft Folder	Free - Installed on Sign In
PowerPoint	Microsoft Folder	Free - Installed
Remote Desktop	Microsoft Folder	Free - Installed
Teams	Microsoft Folder	Free - Installed
Translator	Microsoft Folder	Free
Whiteboard	Microsoft Folder	Free - Installed
Word	Microsoft Folder	Free - Installed
Apple Books	Apple Folder	Free - Installed
Apple Classroom	Apple Folder	Free - Installed
Apple Tips	Apple Folder	Free - Installed
Clips	Apple Folder	Free - Installed
Files	Apple Folder	Free - Installed
iCalendar	Apple Folder	Free - Installed
iMovie	Apple Folder	Free - Installed
iTunesU	Apple Folder	Free - Installed
Keynote	Apple Folder	Free - Installed
Numbers	Apple Folder	Free - Installed
Pages	Apple Folder	Free - Installed
Photo Booth	Apple Folder	Free - Installed
Podcasts	Apple Folder	Free - Installed
Reminders	Apple Folder	Free - Installed
Voice Memos	Apple Folder	Free - Installed
Maps	Apple Folder	Free - Installed
Google Classroom	Google Folder	Free - Installed
Google Docs	Google Folder	Free - Installed
Google Earth	Google Folder	Free - Installed
Google Sheets	Google Folder	Free - Installed
Google Slides	Google Folder	Free - To Be Installed
Google Translate	Google Folder	Free - Installed
ABC MAgic Phonics 1	Literacy	Free
ActivCast Sender	Creativity	Free
Alphablocks Letter Fun	Literacy	Free
Animal Maze	Numeracy	Free
Animal Muddle	Creativity	Free
Animate IT! Lite (Aardman)	Technologies	Free
AnimateAnything	Creativity	Free
App Catalogue DCC	Front Screen	Free - Installed
App Store Summary	Front Screen	Free - Installed
Atlas for iPad	Social Studies	Free
Augmentify:IT	Science	Free (Cards Required)

Autodesk Sketchbook	Technologies	Free
Awesome Eats	Health & Wellbeing	Free
Awesome Xylophone Lite	Expressive Arts	Free
Bandimal	Expressive Arts	£3.99 via IT BID
Bee-Bot	Technologies	Free
Bible by Olive Tree	Religous Moral Education	Free
Blockly for Dash & Dot	Technologies	Free
Blue-Bot	Technologies	Free
Body Boggle	Creativity	Free
Book Creator for iPad	Literacy	£4.99 via IT BID
Book Creator One	Literacy	Free
Box Island	Technologies	Free / £7.99 via IT BID
Braille Bubbles	Literacy	£1.99 via IT BID
Braille Writter	Literacy	£4.99 via IT BID
BrainPOP Jnr Film du Jour	Languages	Free
BrainPOP Jnr Movie of the Week	Social Studies	Free
Brushes Redux	Expressive Arts	Free
Busy Bundle	Creativity	Free / £1.99*
Busy Things Story Bundle	Literacy	£1.99 via IT BID*
Calculator Pro+	Numeracy	Free
Camera	Front Screen Dock	Free - Installed
Cargo-Bot	Technologies	Free
CBeebies Get Creative	Creativity	Free
CBeebies Go Explore	Creativity	Free
CBeebies Storytime	Literacy	Free
Chatterpix Kids	Creativity	Free
Chrome	Front Screen Dock	Free - Installed
Class Dojo	Creativity	Free
Clicker Books	Literacy	£31.99 via IT BID
Clicker Communicator AAC Creator	Literacy	£119.99 via IT BID
Clicker Connect	Literacy	£31.99 via IT BID
Clicker Docs	Literacy	£31.99 via IT BID
Clicker Sentences	Literacy	£31.99 via IT BID
Clock	Front Screen	Free - Installed
Code Karts	Technologies	£3.99 via IT BID
Comic Life	Technologies	£4.99 via IT BID
Crazy Gears	Science	£3.99 via IT BID
Crazy Gears	Science	Free
Cue by Wonder Workshops	Technologies	Free
Daisy the Dinosaur	Technologies	Free
Des Chiffres et des Lettres Junior	Languages	Free
Dig! for Merge Cube	Creativity	Free
DigiDuck's Big Decision eBook	Technologies	Free
Do Ink Animation	Creativity	£2.99 via IT BID
Do Ink Green Screen	Creativity	£2.99 via IT BID
Doodle Buddy Draw for iPad	Expressive Arts	Free
Draw2Measure Protractor	Numeracy	Free
Drawing Challenge Game (AI)	Technologies	Free
Drawing Desk : Draw & Paint Art	Expressive Arts	Free
Duolingo	Languages	Free
Earth Viewer	Science	Free
Eco Action Toppers	Science	Free
Essential Skeletion 4 -3D Medical	Science	Free

Evernote Scannable	Creativity	Free
Explain Everything Whiteboard	Literacy	Free
Explore Maeshowe	Social Studies	Free
Fairytale Play Theatre	Creative	Free
Feed the Monkey	Numeracy	Free
Finger Paint With Sounds	Expressive Arts	Free
Fun French: Kids Learn French	Languages	Free / £7.99 via ITBID
Galatic Explorer for Merge	Science	Free
Garage Band	Expressive Arts	Free
Geoboards	Numeracy	Free
Get Well Soon Hospital	Health & Wellbeing	Free
Glow Link (Direct via log in)	Front Screen	Free - Installed
Go for Dash and Dot Robots	Technologies	Free
Go Noodle Kids	Health and Wellbeing	Free
Go Roman	Social Studies	Free
Gravity Sketch	Technologies	Free
Gravity Sketch	Technologies	Free
Green Screen by DoInk	Creativity	£2.99 via IT BID
Hologo	Creativity	Free
Hopscotch: Coding for Kids	Technologies	Free / £7.99
Hopster Coding Safari	Technologies	Free
How Things Are Made	Technologies	£2..99 via IT BID*
HP Reveal	Creativity	Free
Hub (Log In / Out of Device)	Front Screen Dock	Free - Installed
I Can Animate	Technologies	£2.99 via IT BID
I Can Present	Technologies	£2.99 via IT BID
InO Bot	Technology	Free
Inspiration Maps	Creativity	Free
Islam Guide: Begunners and Kids	RME	Free
JIG Space	Technologies	Free
Kahoot	Creativity	Free
Kamodo	Numeracy	Free
Khan Academy	Creativity	Free
Le Bonheur De Lire Des 3 Ans : Les Fondements de la Lecture en Maternelle	Languages	Free
Learn About Religions	RME	Free
Learn French for Kids	Languages	Free / £2.99
Lego Juniors	Technologies	Free - Guest User Only
Lexia Core 5	Literacy	Free but via BID ONLY due to GDPR
Light Box Cause and Effect Sensory Light Box	Expressive Arts	£3.99 via IT BID
Lightbot : Code Hour	Technologies	Free
Little Red Coding Club	Technologies	Free
MathNinjaAR	Numeracy	Free
Measure (by Apple)	Numeracy	Free
Meet The Alphablocks!	Literacy	Free
MemoryBlock	Creativity	Free
Merge 3D Museum	Social Studies	Free
Merge Object Viewer	Technologies	Free
Micro:Bit	Technologies	Free
Minecraft Education Edition	Creativity	12 Free Pupil Plays / 24 Free Staff Plays with Glow Log In
MixUp	Literacy	£2.99 via IT BID

Morphi 3D Design	Technologies	Free / £9.99 via IT BID
Mr Body for Merge	Science	Free
My Brother Is A Superhero	Literacy	Free (companion to book)
My Life As A Refugee (UNHCR)	Social Studies	Free
Net Aware	Technologies	Free
Notes (Apple)	Front Screen	Free - Installed
Numeracy Map	Numeracy	Free / £7.99 via IT BID
Overdrive - eBooks, Audiobooks	Literacy	Free
Ozobot	Technologies	Free - Guest Use Only Please
Path for Dash Robot	Technologies	Free
PDF Expert	Technologies	£9.99 via IT BID - The Use of Adobe Accounts is not permitted
Photos	Front Screen	Free - Installed
Physical Education	Health & Well Being	Free / £2.29 via IT BID
Pic Collage	Creativity	Free
Play Theatre	Creativity	Free
Plickers	Creativity	Free
Plickers	Creativity	Free
Post - Plus	Creativity	Free
Puppet Pals 2	Creativity	Free
Puppet Pals HD	Creativity	Free
Quiver	Creativity	Free / £7.99
Reactickles Magic	Expressive Arts	Free
Read 7 Write for iPad	Literacy	Free
Red Cross - Accident Prevention	Health & Well Being	Free
Safari	Front Screen Dock	Free - Installed
Scratch	Front Screen	Free - Installed
Scratch Jnr	Technologies	Free
Seeing AI	Literacy	Free
SeeSaw	Creativity	Free- See GDPR Docs
Settings	Front Screen	Free - Installed
Shape up Lite (Busy Things)	Numeracy	Free
Sketch Nation	Technologies	Free
Skitch - Snap, Mark Up and Send	Creativity	Free
Sleeper ASMR	Expressive Arts	Free
Smart Notebook for iPad	Creativity	Free
Social Stories (Device Care inc)	Literacy	Free / £0.99 /£1.99 / £2.99)
Socrative Student	Creativity	Free
Socrative Teacher	Creativity	Free
SoundBox Cause and Effect Sensory Light Box	Expressive Arts	£0.99 via IT BID
Sphero EDU	Technologie	Free - Guest Use Only Please
Stop Motion Studio	Creativity	Free
Sumdog	Numeracy	Free
Superkeys Accessibility Keyboard by Crick	Literacy	£12.99 via IT BID
Swift Playgrounds	Technologies	Free
Symphony Maths	Numeracy	Free but via BID ONLY due to GDPR
Tayasui Sketches School	Expressive Arts	Free
Teach Your Monster To Read	Literacy	Free - use of the account feature is not permitted

TED	Creativity	Free - Staff Only
Tell About This	Literacy	Free
Telligami	Literacy	Free
Texting Story	Literacy	Free
Texting Story Chat Story Maker	Literacy	Free
The Beginner's Bible	RME	Free
The Big Myth (Free)	RME	Free
The Grunts: Beard of Bees	Literacy	Free
The Very Hungry Caterpillar Play & Explore	Literacy	Free / £2.99 / £4.99
Think and Learn by Code- A-Pillar	Technologies	Free
Three Little Pigs (Busy Things)	Literacy	Free
Tickle	Technologies	Free
Tinkl AR	Literacy	Free
Tiny Bop Human Body	Science	£2.99 via IT BID
Tiny Cards (Duolingo)	Languages	Free
Toca Blocks	Creativity	£3.99 via IT BID
Toca Dance	Expressive Arts	Free
Toca Fairy Tales	Literacy	Free
Toca Store	Numeracy	£2.99 via IT BID
Toothsavers Brushing Game	Health & Well Being	Free
Trnio	Technology	£2.99 via IT BID
Twinkl Ages: York	Social Studies	Free
Twinkl ARchitect	Creativity	Free
Twinkl Avatar Creator	Creativity	Free
Twinkl Creation Station Light Edition	Expressive Arts	Free
Twinkl Robotics	Technologies	Free
Twinkle 100 Square	Numeracy	Free
Twinkle AR	Creativity	Free
Tynker	Technologies	Free
Tynker Jnr	Technologies	Free
Virtuali-Tee by Curascope	Science	Free
Virtuoso Piano 3	Expressive Arts	Free
Web Log In (To Access Internet)	Front Screen	Free - Installed
Wonder for Dash & Dot Robots	Technologies	Free
WordFoto	Creativity	£1.99 via IT BID
World Clouds	Creativity	Free
Write Online Crick	Literacy	£31.99 via IT BID
WWF FreeRivers	Social Studies	Free
Xylo for Dash Robot	Technologies	Free