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Fearn, Warren ORCID logoORCID: https://orcid.org/0000-0002-2029-630X (2022) THE METAVERSE - Where are we heading? In: THE METAVERSE - WHERE IS IT HEADING?, 21at November 2022, ONLINE (UNIVERSITY OF BRADFORD). (Unpublished)

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The Metaverse: Where are we heading?

University of Bradford
21/11/2022

Warren Fearn
Programme Leader PG: MA Virtual and Augmented Reality
Design Department
School of Arts
York St John University

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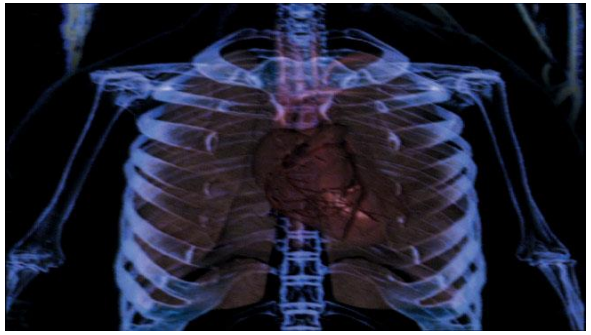
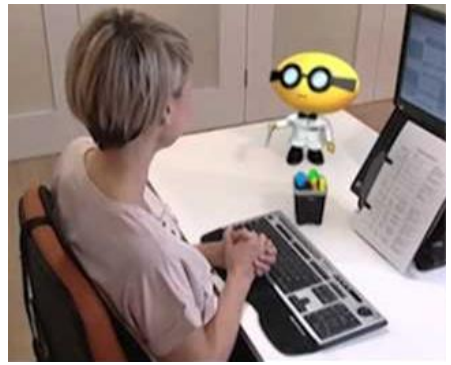
Who am I ?

- Design & Technology
- SGI (Alias Wavefront)
- BBC Virtual Reality Studios / BBC 3DFX
- Creative Director
- Autodesk (Secondary Education Board)
- Emmy / Promax Awards
- PhD (Augmented Realty for Primary Science Education), University of York





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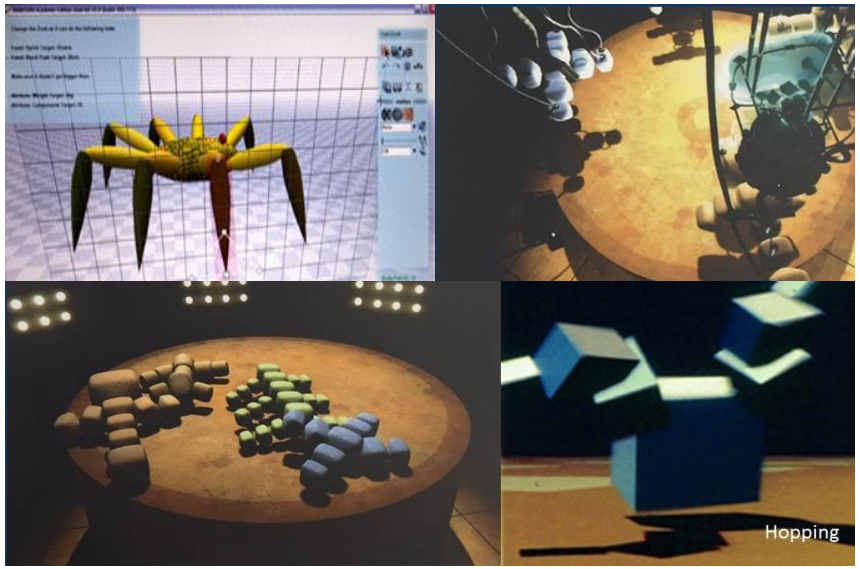
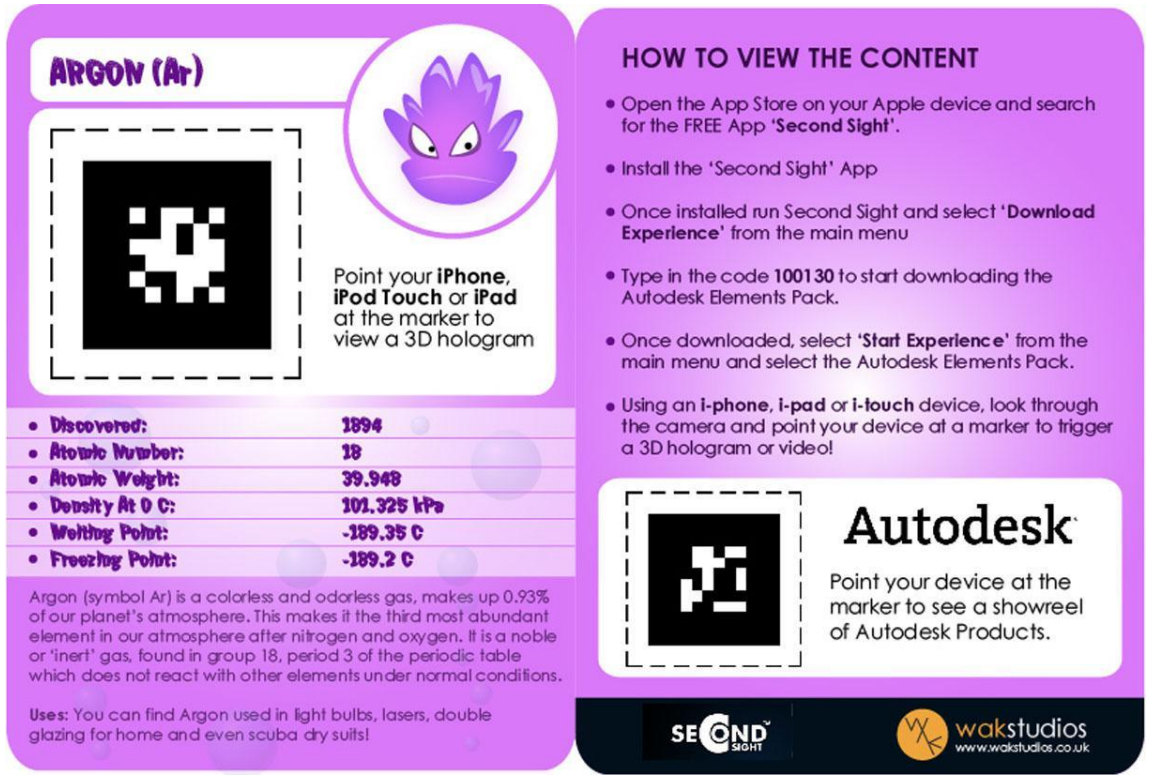
SOUTHGATE
TOMBOYS
BAMZOOKI


Hopping

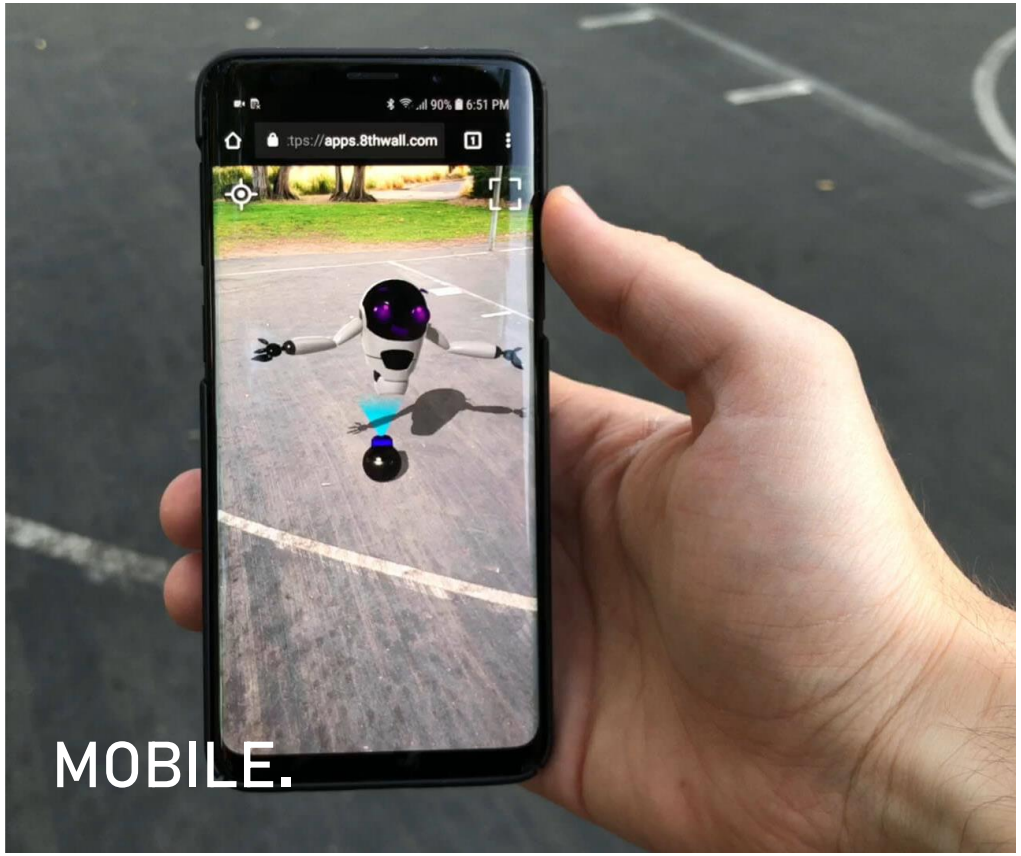
1998.


ARGON (Ar)
Point your iPhone, iPod Touch or iPad at the marker to view a 3D hologram
Discovered: 1894
Atomic Number: 18
Atomic Weight: 39.948
Density At 0 C: 101.325 kPa
Melting Point: -189.35 C
Freezing Point: -189.2 C
Argon (symbol Ar) is a colorless and odorless gas, makes up 0.93% of our planet's atmosphere. This makes it the third most abundant element in our atmosphere after nitrogen and oxygen. It is a noble or 'inert' gas, found in group 18, period 3 of the periodic table which does not react with other elements under normal conditions.
Uses: You can find Argon used in light bulbs, lasers, double glazing for home and even scuba dry suits!
HOW TO VIEW THE CONTENT
Open the App Store on your Apple device and search for the FREE App 'Second Sight'.
Install the 'Second Sight' App
Once installed run Second Sight and select 'Download Experience' from the main menu
Type in the code 100130 to start downloading the Autodesk Elements Pack.
Once downloaded, select 'Start Experience' from the main menu and select the Autodesk Elements Pack.
Using an i-phone, i-pad or i-touch device, look through the camera and point your device at a marker to trigger a 3D hologram or video!
Autodesk
Point your device at the marker to see a showreel of Autodesk Products.
SECOND SIGHT
wakstudios
www.wakstudios.co.uk

2011.


SECOND SIGHT™
www.mysecondsight.com
York St John University

2014.


MOBILE.


WEARABLE.

Real Life

This is the real, physical life around us in the world (not digital).

Augmented Reality

This is the technology which overlays digital information onto the real world.

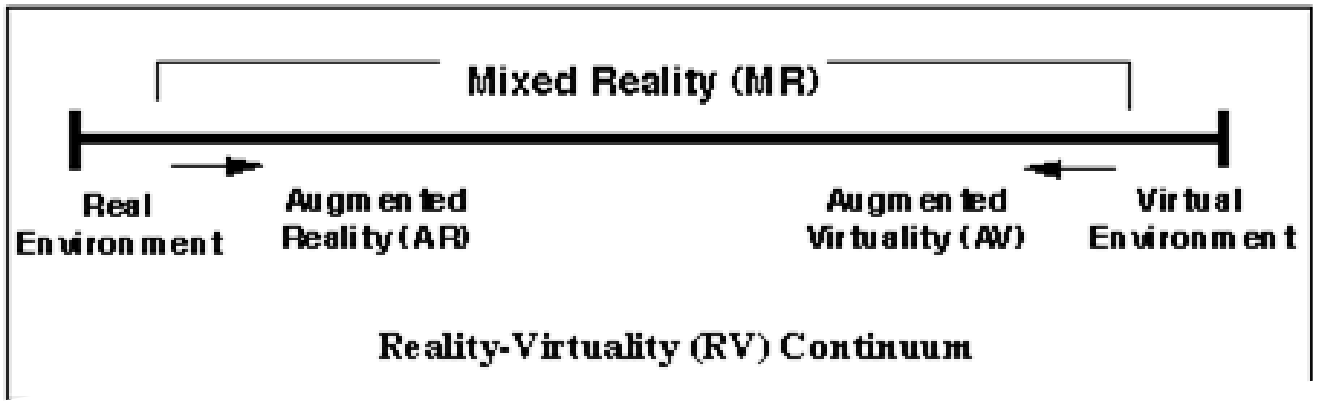
Mixed Reality

This is the merging of both the real world and the digital world.

Virtual Reality

This is the immersing of a user in a completely digital world.

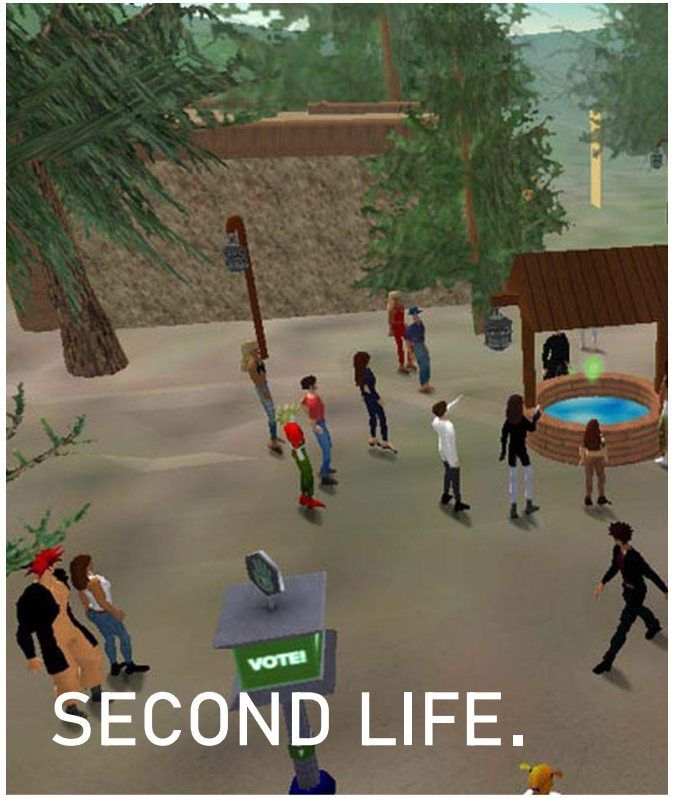
Virtuality Continuum (Milgram and Kishino)



An early diagram 'Virtuality Continuum' (Milgram, P., Kishino, F., 1994) describes any combination of virtual and physical objects (mixed reality) between the extremes of reality and virtual reality.

1994.

2003.

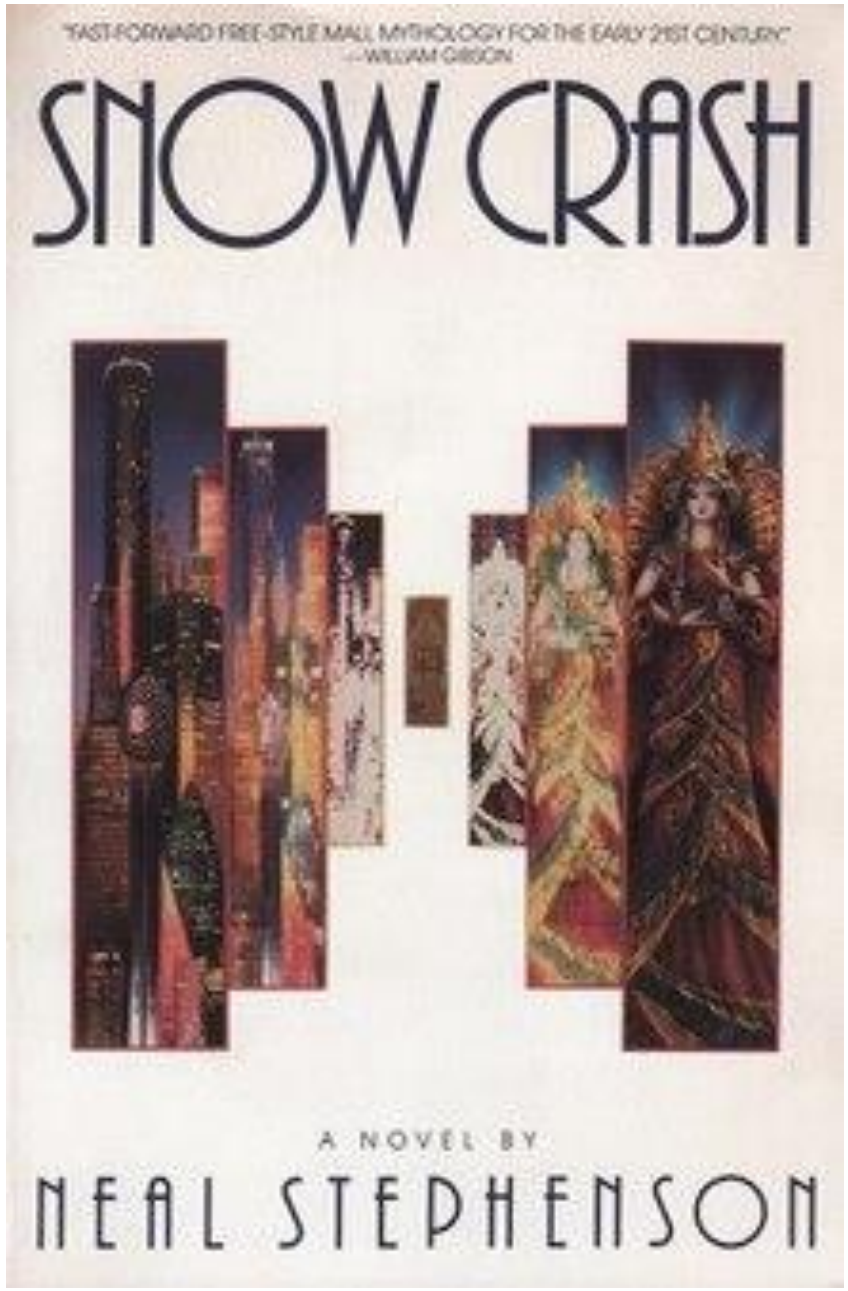


CEO Philip Rosedale

2015 – Second Life estimated GDP of $500 million / 2021 - $600 million

Slow growth less people registering
Generation change
New platforms (The Simms)
Problems with infrastructure

2022 – Meta acquired Second Life



1992.

The term “metaverse” was first used in Neil Stevenson's novel, Snow Crash.

Stevenson's metaverse was a virtual place where characters could go to escape a dreary totalitarian reality.

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2014.

2021.

Meta

2022.

Quest Pro Headset
Mixed Reality
Face and Eye Tracking (Facial Expressions)

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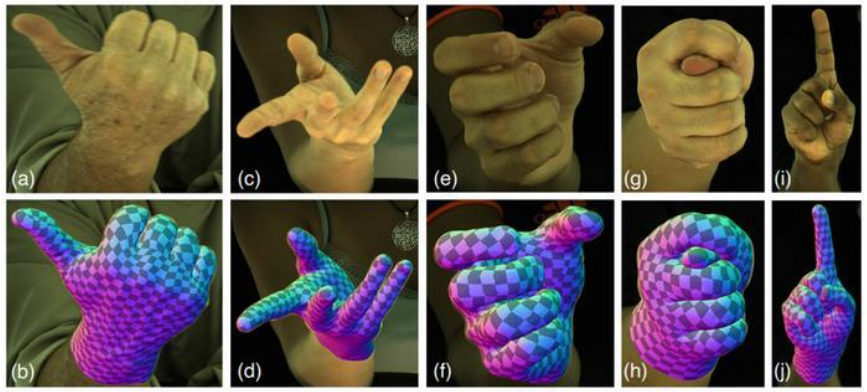
VR – FACEBOOK REALITY LABS



Constraining Dense Hand Surface Tracking with Elasticity

(Breannan Smith, Chenglei Wu, He Wen, Patrick Peluse, Yaser Sheikh, Jessica Hodgins, Takaaki Shiratori, 2020)

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GENERATION ALPHA
2010 – 2024

Compared to other 12-15s, Minecraft players are 27% more likely to say they use online social spaces to interact with brands.

Demand for building/creating tools has climbed by 7% since 2021, which is the highest increase across the board.

https://blog.gwi.com/chart-of-the-week/gen-alphas-habits-future-of-gaming/

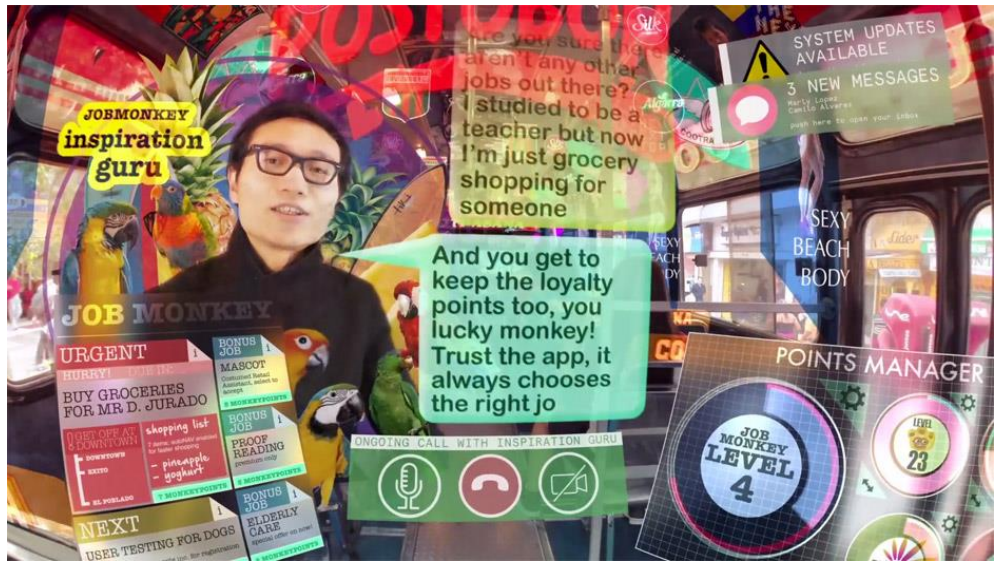
Apple not using the term “metaverse” is that people do not have a full understanding of what it is.

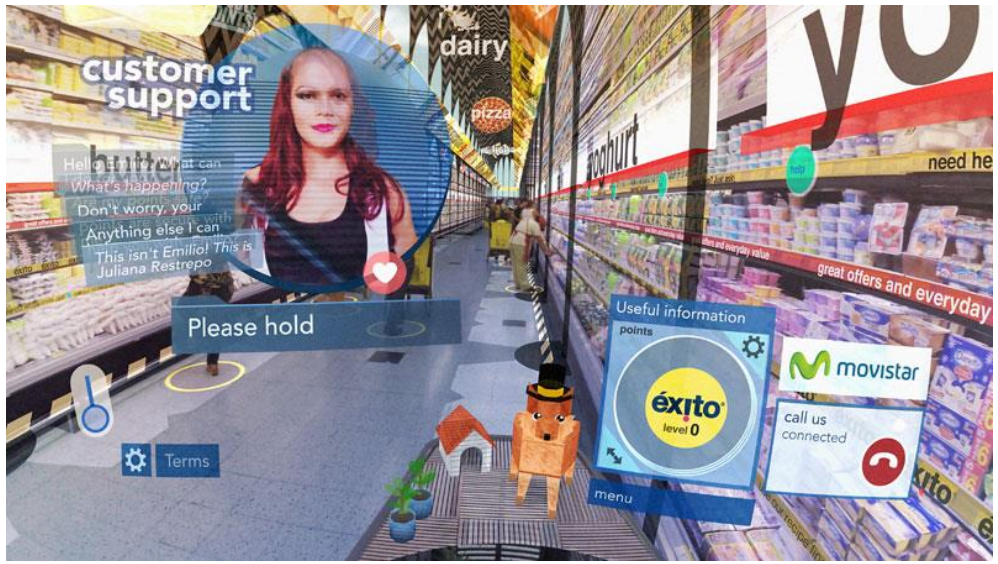
“I think AR is a profound technology that will affect everything … We are really going to look back and think about how we once lived without AR.”

Tim Cook, Apple CEO

REMOTE. Microsoft Mesh.

Keiichi Matsuda.
Hyper Reality

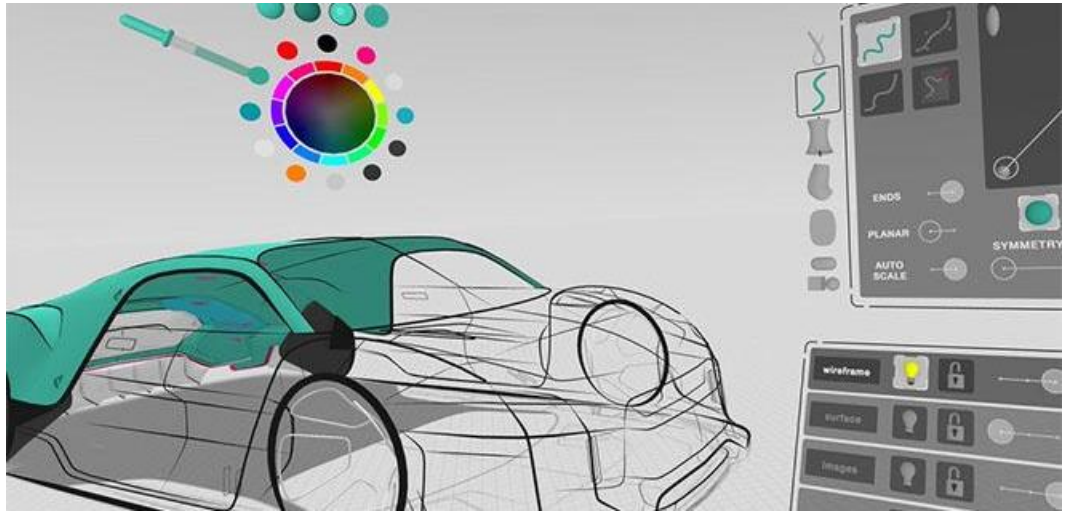




Geo Location based learning emphasises the learner's interactions with the physical environment, so AR can exploit these advantages through geo-location to track learners (De Lucia et al. 2012).


RECORD
PATIENT
AGREEMENT
CR/VR

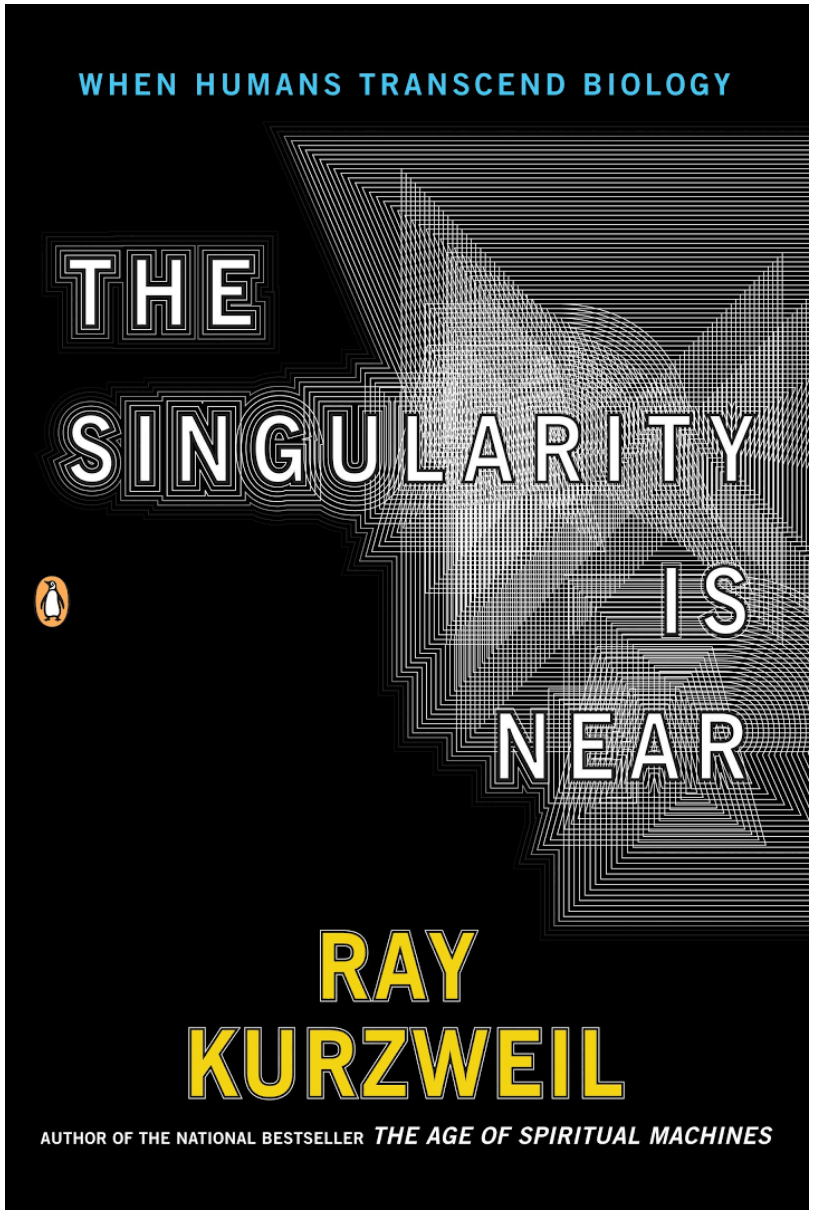

HAND
PHYSICS
LAB


ENDS
PLANAR
AUTO SCALE
SYMMETRY
wireframe
surface
images

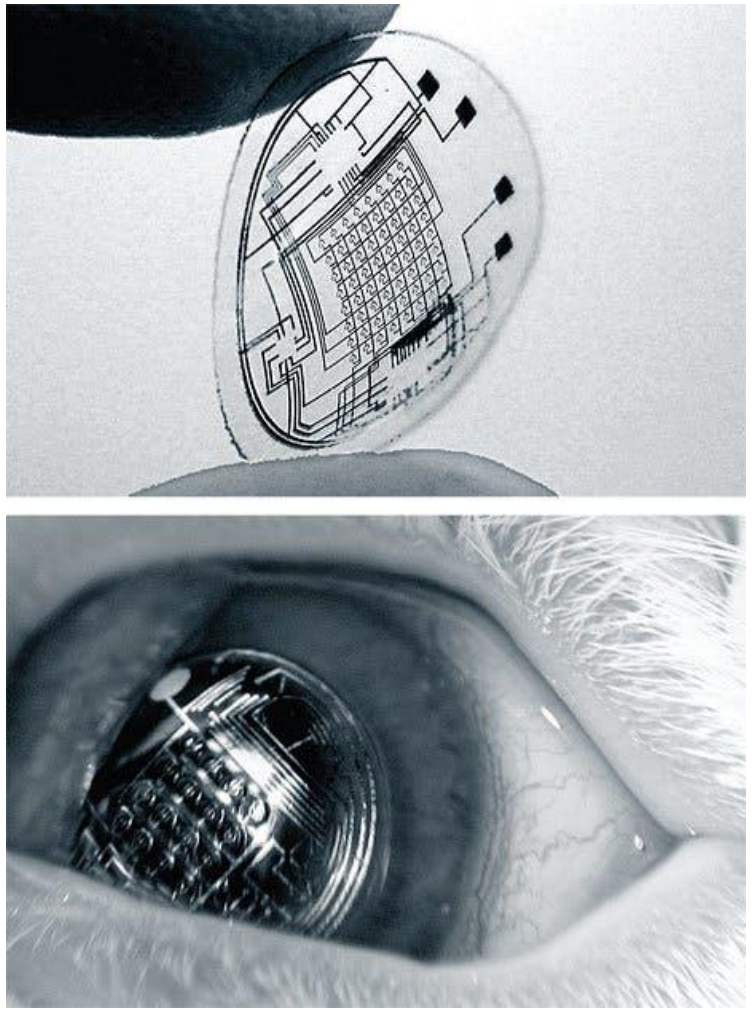

3D Repo

“Every decade our overall rate of progress is doubling. “We won’t experience 100 years of progress in the 21st century – it will be more like 20,000 years of progress” (2001).

Ray Kurzweil, The Singularity Is Near



MOJO VISION: AR CONACT LENSES



SONY: AR PATENT

The Metaverse: Where are we heading?

- Advantages of VR vs AR? Or will everything merge to be XR
- What are the benefits and impact?
- Do we need to allow this technology (XR) to mature?
- How do we regulate virtual environments? Social environments.
- Which sectors will benefit from the Metaverse? Who are we building for and why? Too soon / too quick
- Are we all ready for XR / wearable technologies?
- Will we immerse ourselves in the metaverse or will technological advances present further avenues? Not a metaverse.
- Will it be one Metaverse or sub metaverses that connect to one another within virtual spaces?
- Will this be accessible to everyone? Digital divide.

AR in Education

- (Akcayir, Akcayir, 2017; Wang, et al., 2017; Radu, 2014; Yuen, Yaoyuneyong, Johnson, 2011), suggest educators and designers need to collaborate in terms of **creating sound pedagogy to develop AR applications** that maximise on learning outcomes.

- A study by Silva et al. (2019) found that although educators did recognise the potential of AR, the **adoption of such technologies within mainstream schools is rare**.

- (Kerawalla, Woolward, Luckin, 2006; Bistaman, Idrus, Rashid, 2018) specifically demonstrate AR provides a **positive impact on a teaching and learning experience** for primary science education.

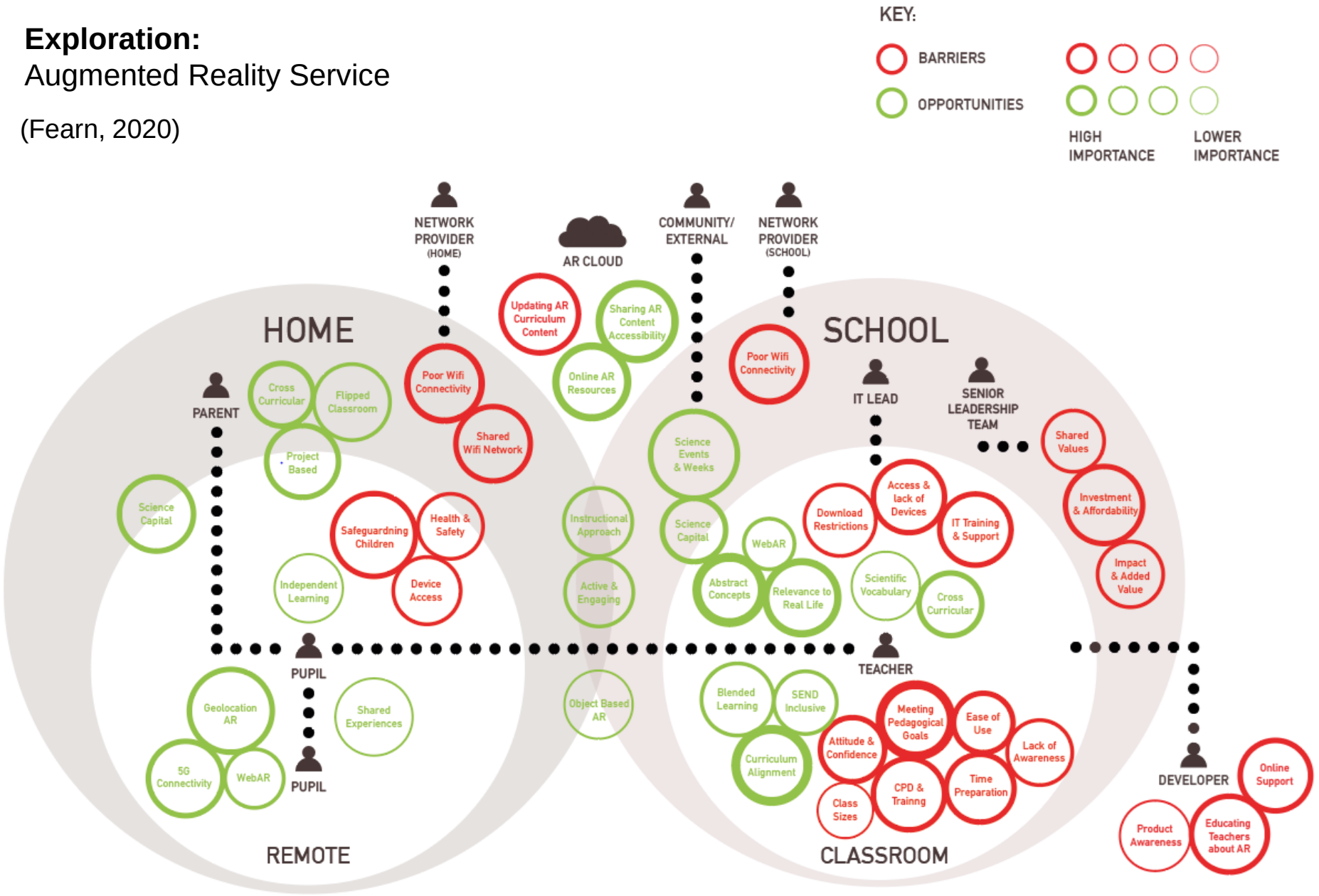
Primary Education: Science

- (Wellcome Trust, 2017) that primary teachers within the UK education system are now only managing to devote on average **1 hour and 24 minutes per week** in teaching science.

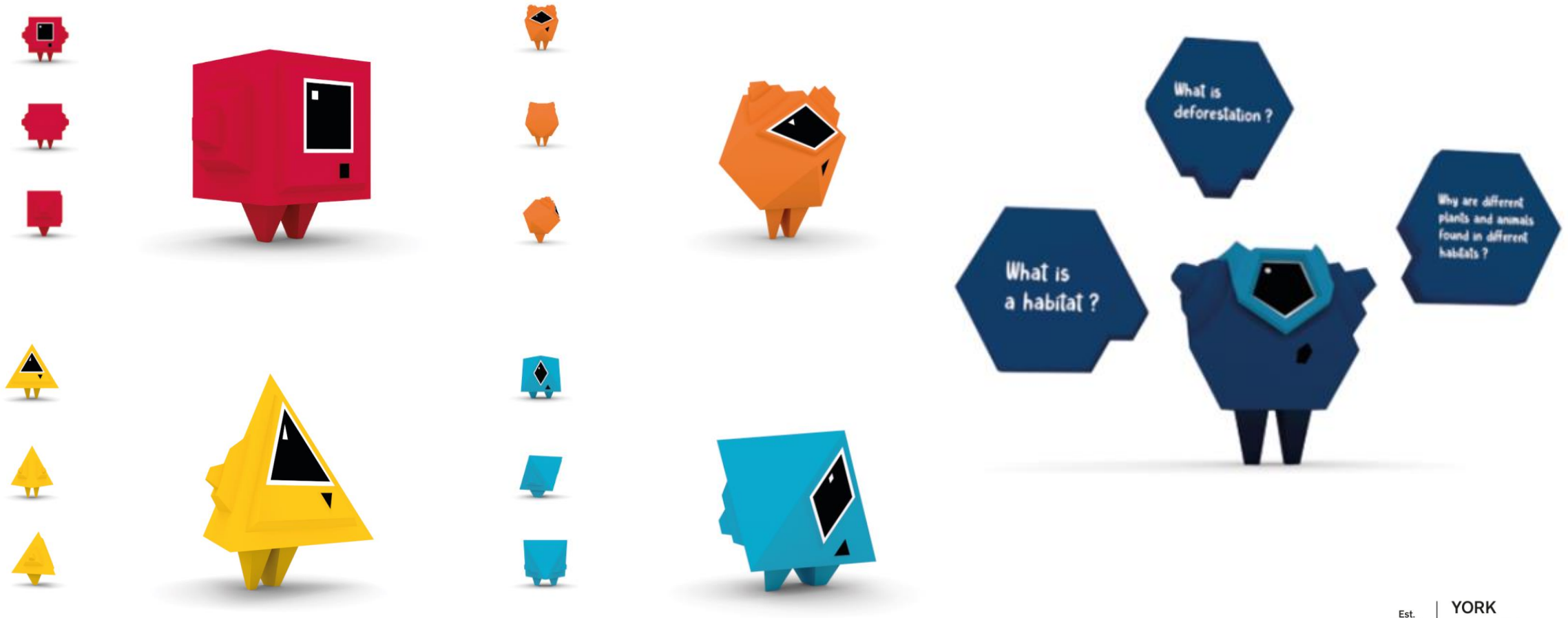
- Ofsted warned that science “has clearly been **downgraded in some primary schools**” since the key stage 2 science test was scrapped in 2009.

Exploration:
Augmented Reality Service

(Fearn, 2020)

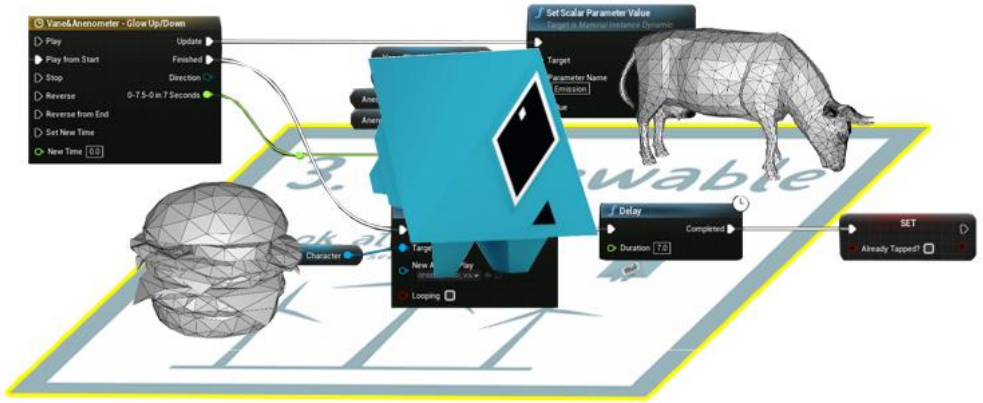


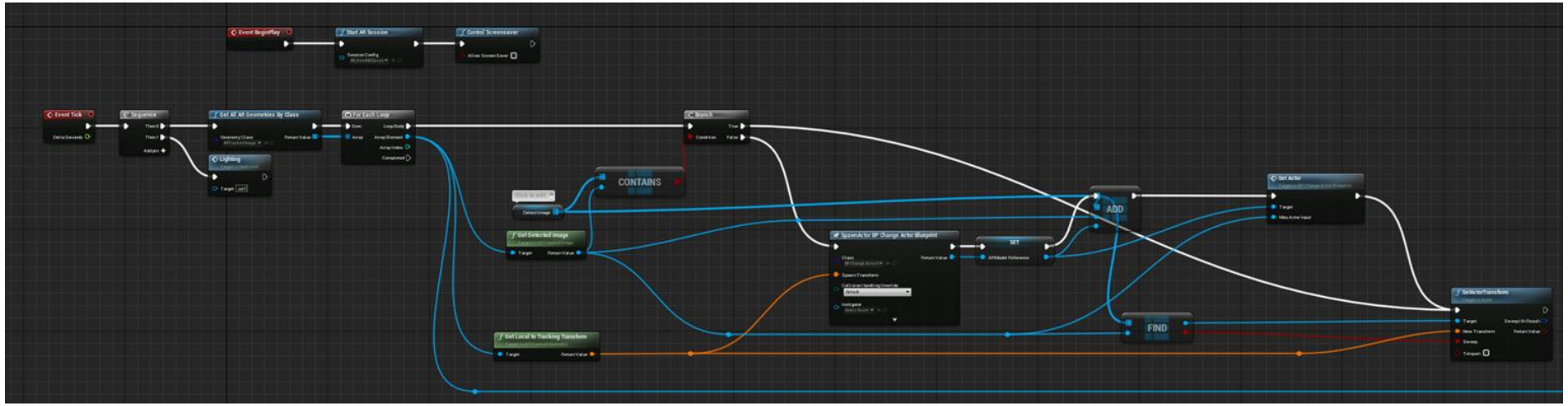
Creation:
Character AR Design
(Fearn, 2021)



Creation:
AR Mechanics (Blueprint)

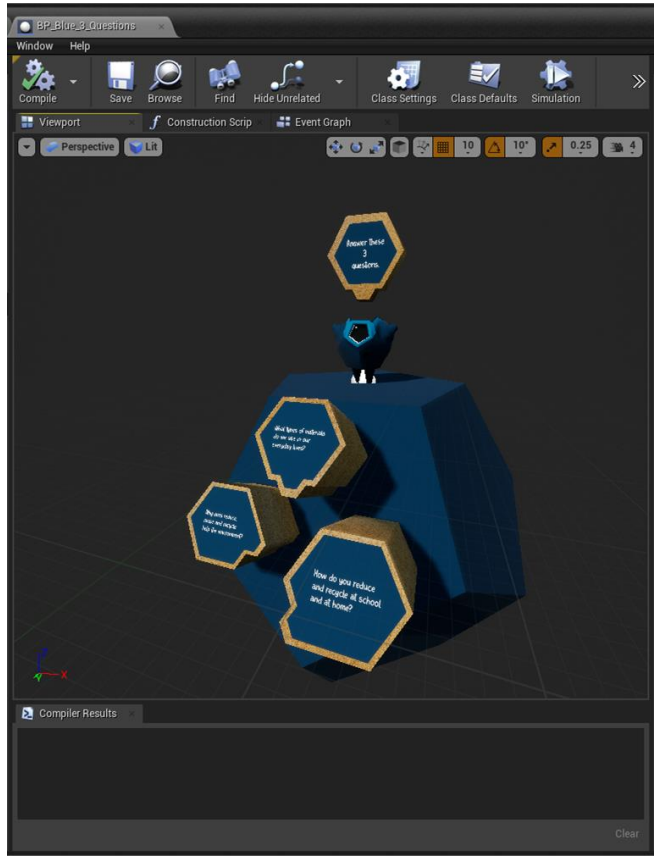
(Fearn, 2021)

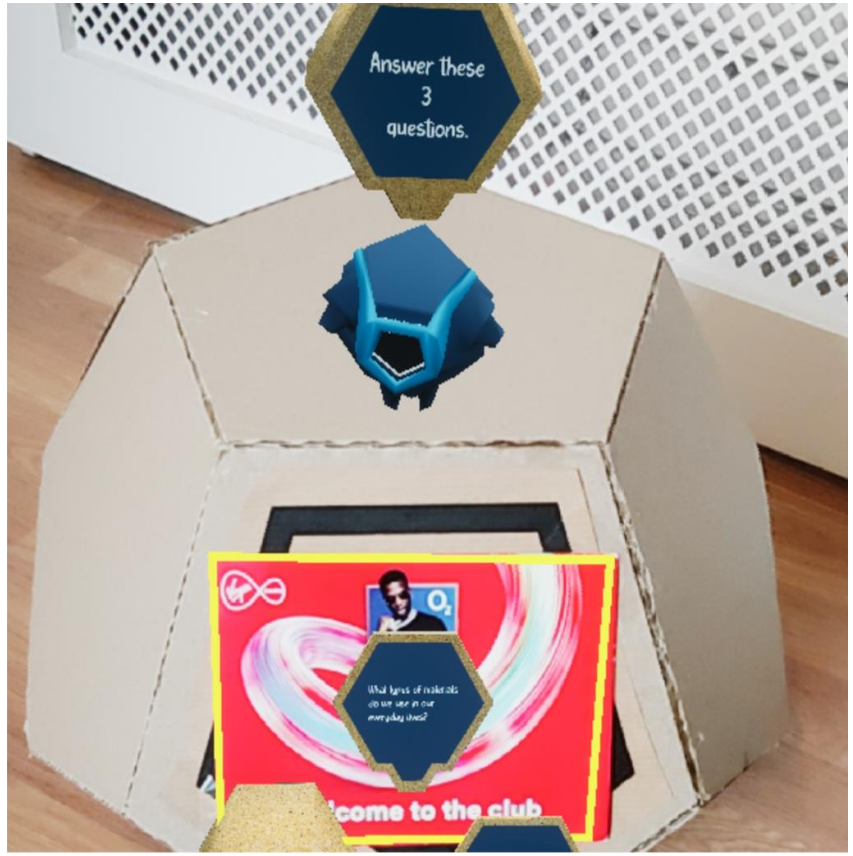




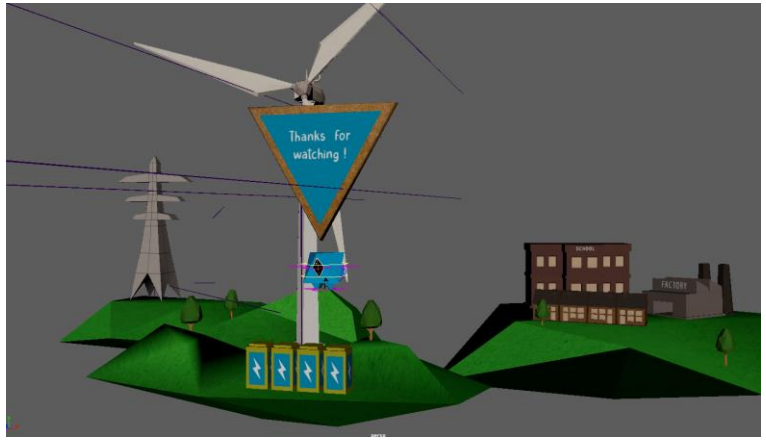
Creation:
Mechanics (Augmentation)

(Fearn, 2022)

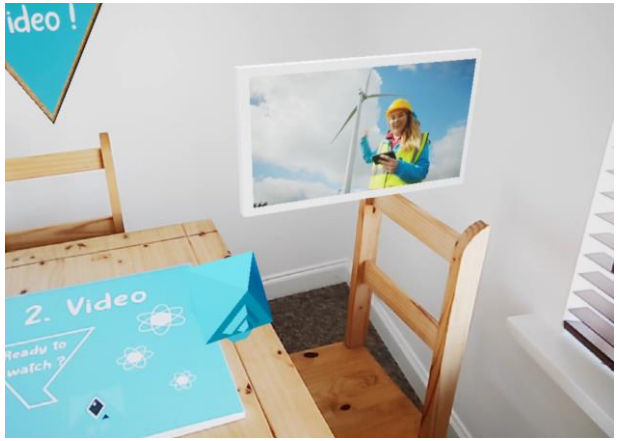


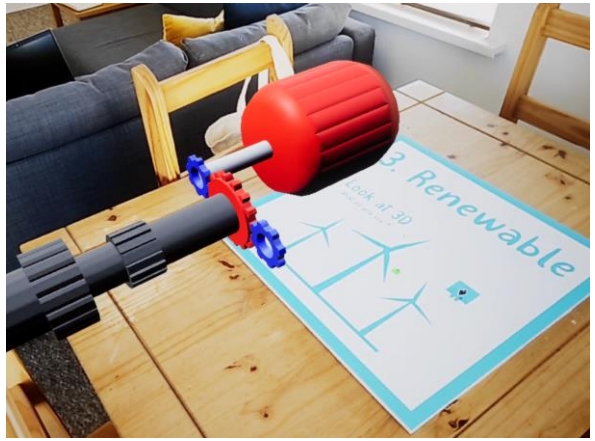


Creation:
Mechanics (Augmentation)



(Fearn, 2022)





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Thank you.

Contact:
Warren Fearn
w.fearn@yorksj.ac.uk

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