

Next Generation Digital Citizenship

a resource guide (rev. 08.06.19)

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A selection of resources, current events, standards, and guiding questions
to assist digital citizens of all ages in using critical thinking
to thrive and successfully confront personal & global dilemmas
in our complex, dangerous, enticing, 'brave new digital world'

the Digital Citizenship categories included in the Resource Guide have been adopted by Fairfax County Public Schools for the 2019-20 school year and are based on recently revised categories found on the CommonSense.org website.

Digital Dilemma: The Digital Citizenship Card Game

Version - Beta 6

a game to teach & assess Digital Citizenship knowledge & skills through application

[Player's Guide](#)

[Card Deck](#)

(best printed on card stock and inserted into [card sleeves](#))

The "Critical Thinking Standards" referenced on Digital Dilemma cards come from:

Paul, Richard & Elder, Linda (2007). *A guide for educators to critical thinking competency standards*. [Foundation for Critical Thinking](#).

Digital Dilemma: The Digital Dilemma Card Game is a project of [The Curiosity Shoppe](#), a student-curated inquiry-based learning resource center containing over 1000 mechanical puzzles, serious/thinking games Maker gadgets, and books to advance inquiry-based learning within K-12 education.

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Digital Citizenship 'Current Events'

Classroom Strategies

The Current Events referenced in this Resource Guide come from [ACM TechNews](#) which is published every 2-3 days by the [Association for Computing Machinery](#). Each release features summaries of 10-15 articles as well as a link to the original online articles (from credible newspapers, magazines, and academic publications).

The Curiosity Shoppe website maintains a select collection (approx. 200) in a Google Slides presentation: [ACM TechNews - STEM Current Events Slideshow](#). This collection is updated each month and has the advantage of each article being classified by keywords to make it easier for secondary teachers to locate articles to 'shock & awe' the digital citizens in their classroom and inspire STEM careers.

Instructional Strategy 1: Assign students to (or have them self-select) a 'stakeholder' group to discuss the pro's and con's of how the technology described in the article could affect the world. Some possible 'stakeholders' include: civil rights lawyer, environmental advocate, entertainment & sports industry, law enforcement, medical community, the military, political dictator, student (K-12), teacher (K-12), transportation industry.

Instructional Strategy 2: Discuss a Current Event using [De Bono's 'Six Thinking Hats'](#) approach.

Instructional Strategy 3: (Technology/Design or Civics/Economics class). The teacher creates cards with a student friendly summary of Current Event article. Student groups select a card (or combine several) and in [Shark Tank](#) fashion come up with a marketable product. Groups need to 'pitch' their product identifying their target market (market size, age group, estimated sales) as well as describe individual, local, and global benefits. Students should be instructed to be prepared to address the 'unintended' consequences of developing the technology/product which might be raised by the 'Shark Tank' panel.

News & Media Literacy (including Creative Credit & Copyright)

Resources

BOOK: Kovach, Bill, & Rosenstiel, Tom (2011). *Blur: how to know what's true in the age of information overload.*

Current Events

[The Rise of the Robot Reporter](#)

The New York Times Jaclyn Peiser February 5, 2019

[Scientific Sonnets: Duke Team Wins Competition for Poetry-Generating Algorithm](#)

Duke Chronicle Brian Guo December 27, 2018

[AI Created More Than 100,000 Pieces of Music After Analyzing Irish and English Folk Tunes](#)

Karlsruhe Institute of Technology David Callahan September 24, 2018

[Beyond Deep Fakes](#)

Carnegie Mellon University Byron Spice September 10, 2018

[Bots, Russian Trolls Influenced Vaccine Discussion on Twitter](#)

George Washington University August 23, 2018

[Lip-Syncing Thanks to Artificial Intelligence](#)

Max Planck Institute for Informatics (Germany) August 27, 2018

[Deepfake Videos Are Getting Impossibly Good](#)

Gizmodo George Dvorsky June 12, 2018

[China's Schools Are Quietly Using AI to Mark Students' Essays ... but Do the Robots Make the Grade?](#)

South China Morning Post Stephen Chen May 28, 2018

[Facebook AI Turns One Style of Music Into Another](#)

The Next Web Tristan Greene May 22, 2018

[AI Generates New Doom Levels for Humans to Play](#)

Technology Review May 7, 2018

AI that Deletes People From Photos Makes Rewriting History Easy

New Scientist Chris Baraniuk May 1, 2018

Guiding Questions

Organizations trying to sell you something, or persuade you to have a certain view, or vote in a specific way have 'profiled you' using 100's of behavioral, consumer, and demographic 'data points' gathered from your online & offline activity over the years. How can you be sure that what you are viewing on the Internet is balanced 'reliable' information rather than 'fake news' or biased information selected for you based on your 'profile'?

Companies like FaceBook and Google have commercial interests & political biases, and can make it harder to find information from companies/organizations with which they disagree or which don't pay for advertising. How can you make sure you have access to more sources of information before you form beliefs & make decisions.

Critical Thinking Standards

3- Based on Data, Info, Experience, Research

Students express in their own words (clearly and precisely) the most important information

Students actively search for information against, not just for, their own position

Students draw conclusions only to the extent that those conclusions are supported by the facts and sound reasoning. They demonstrate the ability to objectively analyze and assess information in coming to conclusions based on the information

Students demonstrate understanding of the types of information used within particular subjects and disciplines, as well as understanding of how professionals within fields use information in reasoning through problems

25- Skills in Detecting Media Bias & Propaganda

Students recognize that the purpose of the mainstream news media is to maximize profit, not to educate the public or to objectively report the news

Students recognize the nature and function of bias and propaganda

Students understand that every society and culture has a unique worldview that colors (and often distorts) what they see and how they see it)

Digital Dilemma Cards

Creative Commons



creativecommons.org

Counters:

Copyright Lawsuit

Database of Reliable Research

(e.g., ERIC, Google Scholar, Infotopia)



Counters:

FaceBook Page
Website Goes Viral

Detect Media Bias & Propaganda

(Critical Thinking Competency #25)

Understand that news stories are frequently included or excluded to validate the social ideology of the reporting organization or its target audience

Intelligently compare & contrast mainstream news with viewpoints represented in alternate and dissenting news sources

Counters:

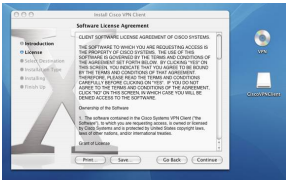
Post Fake News!
Unreliable Research Source!

Grammar & Spell Checker



Counters:

Blog Goes Viral
FaceBook Page
Website Goes Viral

License Software or Images  Counters: Copyright Lawsuit	Source Citation  Counters: Blog Goes Viral Plagiarized Term Paper! Website Goes Viral	Pirated Software  Event (0) Reality Check: Roll a d6 when first played and also at the beginning of the Event Master's turn. If a 5 or 6 is rolled, place a Copyright Lawsuit Token on this card.	
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Digital Footprint & Identity

(including Becoming an Ethical & Globally Concerned Digital Citizen)

Resources

BOOK: Aboujaoude, Elias (2011). *Virtually you: The dangerous powers of the e-personality*.

BOOK: [Gardner, Howard](#) (2012). *Truth, beauty, and goodness reframed: Educating for the virtues in the age of truthiness and twitter*.

BOOK: [Rushkoff, Douglas](#) (2010). *Program or be programmed: Ten commands for a digital age*. [Website](#)

Current Events

[\(ACM TechNews\)](#)

[How China Is Using AI to Profile Minority](#)

The New York Times Paul Mozur April 14, 2019

[Schools in China Track Students With GPS-Enabled 'Smart' Uniforms](#)

Fast Company Melissa Locker December 28, 2018

[The Challenges of Predicting Mob Behavior at Political Rallies](#)

IEEE Spectrum Michelle Hampson November 29, 2018

[This New AI Can Track 200 Eye Movements to Determine Your Personality Traits](#)

Business Insider Katharina Mass September 2, 2018

[Model Can More Naturally Detect Depression in Conversations](#)

MIT News Rob Matheson August 29, 2018

[AI, Electronic Health Records Could Help Suicide Prevention Efforts](#)

Swansea University Kathy Thomas August 24, 2018

[AI Footstep Recognition System Could Be Used for Airport Security](#)

University of Manchester May 29, 2018

[Editing Brain Activity With Holography](#)

Berkeley News Robert Sanders April 30, 2018

Guiding Questions

Most things posted to public & commercial websites are archived (see WaybackMachine.com) and available to view even though they were deleted many years ago. Even posts to 'protected' Facebook pages can be archived by 'bots' or by a person who is your friend (but later in life may have disagreements with you or your political opinions).

Do you think it is fair that something (videos, discussions) someone posted while in middle or high school can be retrieved many years later and cause them to be denied admittance into a university, lose their job, or be removed from an elected office?

What can you do now to make sure that your Digital Footprint is positive and will support rather than raise barriers for your future plans?

Critical Thinking Standards

10- Fairmindedness

Students avoid using their skills to gain advantage over others, score points on them, or make them look bad

Students do not favor the viewpoints of those who support them, but equally consider the viewpoints of those who agree and those who oppose them (using the quality of reasoning in determining what to accept or reject)

11- Intellectual Humility

Students discover their own false beliefs, misconceptions, prejudices, illusions, and myths

Students suspend judgment about matters of which they are ignorant

Students accurately distinguish what they understand about a subject from what they don't.

Students demonstrate understanding of the importance of intellectual humility in thinking within any discipline and profession

13- Intellectual Empathy

Students imaginatively put themselves in the place of others (striving to accurately articulate other's viewpoints)

Students demonstrate understanding of the importance of intellectual empathy in thinking within specific disciplines and professions

18- Insight into Egocentricity

Students routinely identify their natural human tendency to focus on their own needs and desires at the expense of others

Students identify egocentric emotions that affect their thinking (defensiveness, insecurity, anger, or arrogance)

Students respond constructively to people caught up in an egocentric mindset

Digital Dilemma Cards

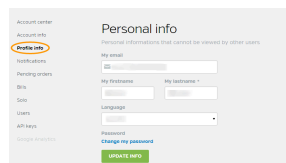
Delusions of Grandeur



Mindset

Place this card on one player's side. Until removed, "Dopamine Addiction Tokens"

Exclude Personal Info From Profile



Counters:

Online Stalker Token
Profile Contains Personal Info

Insight into Egocentricity (Critical Thinking Competency #18)

The human mind is constantly pursuing selfish desires at the expense of the rights & needs of others. This seems reasonable to the egocentric mindset.

Communicate in a rational, seeking mutual benefit. Respond constructively to people caught up in egocentrism.

Intellectual Empathy (Critical Thinking Competency #13)

Sympathetically enter into points of view that differ from my own

Articulate the views of others in an intelligent and insightful way

Modify my thinking by seriously considering widely different viewpoints over time

Recall "I've been wrong in the

count as (-2) instead of (-1) for that player. Remove this card when 2 or more "Purposeful Activity" cards are in play on that player's side.		Mindset Until removed, the following cards cannot be played on the side where this Mindset card is located: Flame Wars!, Post Racist Remarks!, Post Violent Threats!	past" in situations I was convinced I was right Counters: Flame War! Post Racist Remarks!
Purposeful Activity (Activism)  Counters: Become a Digital Couch Potato! Dopamine Addiction	Trivial Pursuit (e.g. Click Bait)  The endless pursuit of sensational 'viral content' (entertainment, gossip, 'herd mentality' activism) leaves little time for the progress in critical thinking skills. Mindset Place this card on one player's side. Until removed, that player must discard down to 5 cards at the end of his/her turn.		
Privacy & Security			
Resources			
LINK: Wayback Machine (archive of hundreds of billions of webpages -- included deleted ones) SOFTWARE: ClamAV (free anti-virus) SOFTWARE: Malwarebytes (free anti-spyware/malware)			
Current Events			
New York School District's Facial Recognition System Sparks Privacy Fears <i>The Guardian</i> Erin Durkin May 31, 2019 Scientists in China Develop Ultra-Long Range AI Camera <i>Daily Mail (United Kingdom)</i> James Pero May 10, 2019 China's Mass Surveillance More Sophisticated Than Thought <i>Bloomberg</i> Blake Schmidt May 1, 2019 U.S. Airports Will Use AI To Scan 97% Of Passengers' Faces Within 4 Years <i>Forbes</i> Nicole Martin April 24, 2019 Employee Privacy in the U.S. at Stake as Corporate Surveillance Technology Monitors Workers' Every Move <i>CNBC</i> Ellen Sheng April 15, 2019			

[Big Brother at the Mall](#)

The Wall Street Journal John D. McKinnon; Laine Higgins April 13, 2019

[These Cameras Can Spot Shoplifters Even Before They Steal](#)

Bloomberg Lisa Du; Ayaka Maki March 4, 2019

[Parkland School Turns to Experimental Surveillance Software That Can Flag Students as Threats](#)

The Washington Post Drew Harwell February 13, 2019

[Think Your Smart Home Is Secure? William & Mary Computer Scientists Show That's Not the Case](#)

The Virginian-Pilot Tamara Dietrich December 27, 2018

[An AI Lie Detector Will Interrogate Travelers at Some EU Borders](#)

New Scientist Douglas Heaven October 31, 2018

[Alexa Can Be Hacked—By Chirping Birds](#)

Fast Company Jesus Diaz September 28, 2018

[Botnet of Smart Air Conditioners and Water Heaters Could Bring Down the Power Grid](#)

CSO Online August 19, 2018

[Interpol's New Software Will Recognize Criminals by Their Voices](#)

IEEE Spectrum Michael Dumiak May 16, 2018

Critical Thinking Standards

2- Problem-Solving

Students express in their own words (clearly and precisely) the question at issue

Students divide complex questions into sub-questions (accurately delineating the complexities in the issue)

Students distinguish significant questions from trivial ones, relevant from irrelevant ones

Students distinguish questions they can answer from those they cannot answer

7- Implications & Consequences

Students identify the most significant implications and consequences of their reasoning and behavior

Students distinguish probable from improbable (and therefore unlikely) implications and consequences

Guiding Questions

There are many entertaining & useful 'FREE' apps for computers & smartphones. However, to install/use them you frequently give the creator of the app the right to monitor your Internet activity, collect information, and sell the information to organizations for marketing & other purposes. Do you know which of your frequently used 'FREE' apps or websites are collecting information about you?

It is tempting to steal games, movies, etc. by downloading them from 'pirate' sites. However such sites, being run by dishonest people, sometimes contains malware (software that monitors & allows them to take control of your computer). Knowing this, what steps might you take to protect your privacy and increase your Internet security.

Digital Dilemma Cards

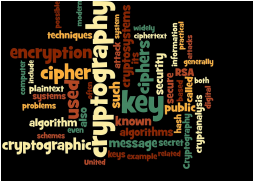
Anti-Spy/Adware Software (e.g., malwarebytes)

Anti-Virus Software (e.g., ClamAV, Windows Defender)

Complex Password (e.g., ABcd#&12)

Configure WiFi Data Encryption



 Counters: Spyware	 Counters: Software Virus Attack! Trojan Horse!	Counters: E-mail Account Attack! User Account Attack! WiFi Attack!	 Counters: WiFi Attack!!
Enable Private Browsing (e.g., Incognito, InPrivate)  Counter: Web Browser Data-Mined!	Encrypted E-Mail & Data (e.g., Pretty Good Privacy)  Counters: E-Mail Account Attack! WiFi Attack!	Identity Protection Service (e.g. Lifelock)  Play Anytime: When one of the cards below is played against you by an opponent, play this card to cancel its effect Identity Thief Phishing Attack! Spear Phishing Attack!	Internet Archive (Wayback Machine)  archive.org/web (310 billion archived web pages) When this card is played, search through the 'Discard Pile' and take a card of your choice. Then shuffle the "Discard Pile".
Virus Software Update  Counters: Rapidly Spreading Virus! Root Kit!	Free Software  Event (0) Reality Check: Roll a d6 when first played and also at the beginning of each round. If a 5 or 6 is rolled, place a Spyware Token on this card.		
Relationships & Communication Cyberbullying			
Resources			
BOOK: Kardaras, N. (2017). <i>Glow kids: How screen addiction is hijacking our kids -- and how to break the trance.</i> BOOK: Turkle, Sherry. (2017). <i>Alone together: Why we expect more from technology and less from each other.</i>			

VIDEO: [TEDx - Alone Together \(Sherry Turkle. 2011. 16 mins.\)](#)

Current Events

[Our Software Is Biased Like We Are. Can New Laws Change That?](#)

The Wall Street Journal Christopher Mims March 23, 2019

[The Autocrat's New Tool Kit](#)

The Wall Street Journal Richard Fontaine; Kara Frederick March 15, 2019

[Politicians Who Block Citizens on Social Media Violate First Amendment](#) (Loudon County, VA)

Ars Technica Cyrus Farivar January 7, 2019

[Army, UPenn Uncover Ways to Better Predict Viral Information](#)

U.S. Army Research Laboratory September 4, 2018

Critical Thinking Standards

8- Points of View, Frames of Reference

Students demonstrate awareness of the fact that reasonable people can vary significantly in points of view, especially on controversial issues

Students can empathetically enter into points of view with which they disagree, and accurately represent those viewpoints. They seek common ground whenever possible

Students think critically about their own point of view and avoid either notion that their viewpoint is in all respects true, correct, or insightful

12- Intellectual Courage

Students examine critically and all of their beliefs, especially those they hold dear

Students fairly evaluate popular and unpopular ideas and beliefs, and determine their reasonability without reference to their popularity

Students demonstrate understanding of the importance of intellectual courage in thinking within specific disciplines and professions

Guiding Questions

Digital Dilemma Cards

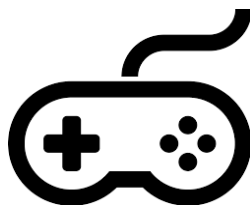
Advertising Revenue (Professional Quality Postings)



Epic Win (+1)

Blog Goes Viral
Website Goes Viral
YouTube Video Goes Viral

Join Guild (build friendships)



Epic Win (+1)

Online Multiplayer Games

Online Learning Community

(e.g. Khan Academy, Scratch.com)



Epic Win (+1)

Online Learning

Crowdfunding (e.g. GoFundMe, Patreon)



Epic Win (+1)

Give a 1-2 sentence speech about why someone should assist you with countering any Event on the playing field. Roll a 6-sided die. If you roll a 3, 4, 5, or 6, this card becomes an Epic Win (+1) for the Event you chose.

			Otherwise discard the card.
Seek Help (From Counselor)  Counters: Cyberbullied! Dopamine Addiction			
Media Balance & Well Being (including Health and Environmental Stewardship)			
Resources			
BOOK: Clement, Joe, & Miles, Matt (2018). <i>Screen schooled: Two veteran teachers expose how technology overuse is making our kids dumber</i>. [NOTE: The authors are both FCPS teachers] BOOK: Kardaras, Nicholas (2017). <i>Glow kids: How screen addiction is hijacking our kids -- and how to break the trance</i>.			
Current Events			
<u>Drones, Supercomputers and Sonar Deployed Against Floods</u> <i>The Denver Post</i> Adrian Sainz; Jeff Martin April 28, 2019 <u>New Algorithm Could Save Thousands of Animals From Toxic Testing</u> <i>Silicon Republic</i> Colm Gorey April 17, 2019 <u>Researchers Develop First Printed 3D Heart</u> <i>ABC News</i> Navjot Kaur Sobti April 15, 2019 <u>Computer Kidney Could Provide Safer Tests for New Medications</u> <i>Waterloo News</i> March 11, 2019 <u>How Georgia Tech is Using GPS Technology to Improve Performance</u> <i>Atlanta Journal-Constitution</i> Ken Sugiura March 4, 2019 <u>AI Empowers Conservation Biology</u> <i>Nature</i> Roberta Kwok March 4, 2019 <u>How Analytics are Making Peace Between Fishermen, Turtles</u> <i>The Washington Post</i> Andrew Van Dam February 4, 2019 <u>How Eavesdropping on Elephants Is Keeping Them Safe</u> <i>BBC News</i> Rachel Nuwer January 31, 2019 <u>Ingestible Capsule Can Be Controlled Wirelessly</u> <i>MIT News</i> Anne Trafton December 13, 2018			

[Brain-Computer Interface Lets Paralyzed People Control Tablet Devices](#)

Discover Roni Dengler November 21, 2018

[Putting Food-Safety Detection in the Hands of Consumers](#)

MIT Media Lab Rob Matheson November 14, 2018

[Heat-Seeking Drones Find Brisbane's Hiding Koalas](#)

Sydney Morning Herald (Australia) Tony Moore October 3, 2018

[Flint Water Crisis: How AI Is Finding Thousands of Hazardous Pipes](#)

New Scientist Frank Swain August 22, 2018

[New Algorithm Could Improve Diagnosis of Rare Diseases](#)

Stanford Health & Safety News Center Erin Digitale August 16, 2018

[The Underwater Drones That Hunt for Oil Spills](#)

New Scientist Joshua Howgego August 8, 2018

[Exoskeletons Debut at Ford Factories](#)

ZDNet Charlie Osborne August 7, 2018

[Smart Bandages Designed to Monitor and Tailor Treatment for Chronic Wounds](#)

Tufts Now Mike Silver July 6, 2018

[First 3D-Printed Human Corneas](#)

Newcastle University (UK) May 30, 2018

[An Electronic Rescue Dog](#)

ETH Zurich Fabio Bergamin May 16, 2018

[Gait Assessed With Body-Worn Sensors May Help Detect Alzheimer's](#)

Newcastle University (UK) May 4, 2018

[Monkey Face Recognition App Can Help Spot Endangered Primates](#)

New Scientist Chris Baraniuk May 4, 2018

[Heart Is Where the Chips Are, Helping Keep the Beat](#)

Rice University Mike Williams April 24, 2018

Critical Thinking Standards

7- Implications & Consequences

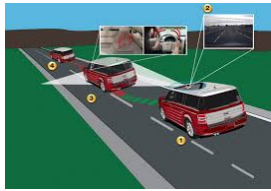
Students identify the most significant implications and consequences of their reasoning and behavior
Students distinguish probable from improbable (and therefore unlikely) implications and consequences

19- Insight into Sociocentricity

Students critically examine the groups to which they belong (as well as any group they study)
Students can give multiple examples from history of negative consequences that have resulted from sociocentric thought
Students are willing to openly and publicly dissent from the mainstream view whenever reason and evidence require it

Guiding Questions

Digital Dilemma Cards

App/Sensor Monitored Fitness Band  Counters: Become A Digital Couch Potato!	App/Sensor Monitored Water Bottle  Counters: Become A Digital Couch Potato! Purposeful Activity (Team Sports)	Multi-Tasking Driver! Weapon of Mass Distraction (e.g. eating, phoning)  Event (-1)	Safety Sensors (e.g. collision detection, lane departure)  Counters: Multi-Tasking Driver!
Online Multiplayer Games  Event (0) Reality Check: Roll a d6 when first played and also at the beginning of the Event Master's turn. If a 5 or 6 is rolled, place a Dopamine Addiction Token on this card.			