# Children and Screens
Institute of Digital Media and Child Development

# UK
# Age-Appropriate Design Code
## Impact Assessment

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# EXECUTIVE SUMMARY

Rare is the opportunity with proposed regulation to see proof of concept, laws in action and the impact of such laws on practice. The UK Age Appropriate Design Code (AADC or "the Code") is a statutory Code of Practice established in the UK in 2019 to ensure youth data privacy and safety. Lack of compliance with the AADC is considered to be a breach of the EU General Data Protection Regulation (GDPR) as well as a violation of the 2018 Data Protection Act. The AADC makes clear that a violation of privacy rights, and lack of consideration for the best interests of children and their personal data, means noncompliance with the greater GDPR.

The UK AADC is a set of 15 interlinked standards (see Appendix A for details) that has been the basis of both proposed (Hawaii, Illinois, Maryland, Minnesota, New Mexico, Nevada, Oregon) and passed legislation (California) in the United States. This report provides a snapshot of the AADC in practice in the UK, and evaluates if and how the Code has catalyzed changes to create a safer and more age-appropriate online experience for children and teens.

Using publicly available announcements from tech companies, this review identifies 91 changes catalyzed by the Code since it passed across six of the biggest platforms and products children and teens are likely to access: YouTube, TikTok, SnapChat, Instagram, Amazon Marketplace, and Google Search. These changes cut across four categories: age-appropriate design, time management, privacy/security and data management, and youth safety and well being.

The parent companies of the platforms examined in this preliminary report (Google, Amazon, Meta, Snap Inc., and TikTok) are all members of NetChoice, the predominant litigator blocking online platform regulations in the US via dozens of lawsuits against state youth safety and privacy laws, including as the lead plaintiff in the case to halt the California AADC, passed into law in 2022. Despite commitments to age appropriate design and data privacy more broadly, and specific endorsements of the AADC itself by each platform, plus more than 90 changes in line with the Code, these companies continue to allow NetChoice to attack a set of standards that are making children's online experiences safer and better.

This snapshot reveals certain concrete steps platforms have publicized, the various approaches platforms take to ensure compliance, and the remaining challenges for both compliance and regulation. This analysis indicates where additional support or guidance is needed to ensure full compliance, and does not delve into the critical area of enforcement, which should be an in-depth area of inquiry in the years to come.

*Nearly 100 platform changes made because of the AADC*

**Youth Safety and Wellbeing**

**Age Appropriate Design**

**Privacy and Security**

**Time Management**

# METHODS

**Platform Selection:** A stepwise process was undertaken to select a subset of platforms which are representative of young users' experiences online and accountable to the AADC standards. First, we generated a list of platforms which meet the EU's Digital Services Act (DSA) definition of a "Very Large Platform." These are platforms with more than 45 million monthly users in the EU (approximately 10% of the EU population). The DSA has released a public list of these platforms, with a clear definition of what constitutes such a platform.

A subset of platforms were selected based on frequency of use by youth, including the four social media platforms most popular among youth in the UK and US (YouTube, TikTok, SnapChat, and Instagram), as well as the e-commerce platform and search engine with the largest market shares in both the UK and US (Amazon Marketplace and Google Search, respectively).

**Covered Dates:** May 2018 - September 2023. These dates encompass the ramp up to the UK AADC's passage in September 2020, and 2 years after full enforcement of the UK AADC. This time period also includes the initial passage of the AADC in the US (California in September 2022) prior to the injunction in September 2023, and thus may capture platform updates initiated due to the California AADC.

**Sources:** Platforms' press releases announcing related changes (see below). This is the only time-stamped source of this information available to the public, and is easily referenced within the report or by request as needed.

**Data Collection:** Five independent researchers reviewed and documented relevant policy or platform changes across the six platforms. One researcher reviewed all cataloged changes for consistency.

Announcements were reviewed for platform policy or design changes that impacted minor users and brought the platform into closer compliance with the AADC.[1] Changes that did not impact the UK were excluded.[2,3]

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1. Publication of data usage and transparency reports, or similar reports, were documented but not reported here due to inconsistencies in reporting and redundancies with public announcements. There were large disparities in the detail and presentation of changes announced by platforms. To the greatest extent possible, each update within a single announcement was documented as an independent change. Occasionally, new features were introduced to more easily provide mental health resources; such updates were considered on a case-by-case basis and were included when they constituted a clear policy change that impacted the use of user data or behavior for mental health resources.

2. Companies may implement platform changes globally in response to local/national regulations.

3. The timing of a change was logged according to the date in the report, recognizing that this may not represent the exact date that the change was made to the platform. Additionally, companies may or may not announce testing of certain changes, and if or when that testing ends. Our defensible assumption is that given the high visibility of the law and the scrutiny these companies were under, they would be incentivized to publicize efforts that demonstrate compliance. We excluded testing that was clearly not adopted, usually determined by an announcement of a test being phased out. Furthermore, if a change was clearly identified as a test with no intent of being widely implemented, and no further updates to that change were ever announced, that change was similarly excluded. If it was later announced that a tested change was being widely implemented, the date of the wider implementation was considered the start of that change, unless the initial test clearly started in the UK.

## LANDSCAPE OF CHANGES

Since the passage of the DPA and the release of the draft Code in 2019, online platforms have taken steps in four key areas related to the Code:

- Youth Safety and Well-Being

- Privacy/Security and Data Management

- Age-Appropriate Design

- Time Management

As a result of the changes we identified, minors can expect to have safer experiences with stricter default privacy settings, less profiling for content, and fewer notifications. These changes most often involve adjustments to two major design characteristics: default settings and user customization. Additionally, platforms are increasingly relying on automation (often through new AI) for age verification, to identify age-appropriate content, and to enforce their own community standards.

Furthermore, the age-range of users impacted by minor-specific changes has been broadened to meet the requirements of the Code. Prior to the UK AADC, platforms most often only considered users under 13 for additional protections. Now, many platforms have expanded minor-specific restrictions or design features to adolescents up to 16 or 17, following the mandate to protect children and teens under 18.

## AADC Impact:
*Youth Experience Online*

Protections Up To Age 18

Higher Default Privacy Settings

Less Profiling

Fewer Notifications & Interruptions

More Age-Appropriate Protections

**Youth Safety and Well-Being**

The UK AADC requires online platforms accessed by children to be a safe space for children. Together, the standards direct platforms to develop community guidelines that account for the ages of their users, enforce those standards, and provide assurances that design features adhere to those standards.[4]

**There were 44 changes across platforms** relating to this category. Across platforms we observed attempts to update community guidelines. Platforms expanded restricted content to encompass a wider range of potentially harmful content, particularly around hate speech and eating disorders. We observed several approaches to bolster community standard enforcement. With some exceptions these fell largely into three categories: strengthening reporting mechanisms, user experience customization, and automating content moderation. Users, especially minors, can also expect more tools to filter content and comments.

*Examples:*

- TikTok updated its reporting mechanisms in the app and clarified them in their guidelines.

- TikTok allows users to filter videos with specific words or hashtags and filter comments based on keywords.

- YouTube announced a new system that alerts users when their comments may be offensive, and detects and removes hate speech.

- Instagram will now filter comments that bully other users and alert people if a comment could be considered bullying.

- Instagram is trying to use machine learning to detect bullying in photos.

- Instagram now allows a content creator to hide comments from a specific user, without the user being aware.

- Under-18 users on TikTok must now opt-in to personalized advertisements.

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4. **STANDARD 3** - *Age appropriate application* instructs platforms to consider age in their community standards and use of data.
**STANDARD 4** - *Transparency* requires all community standards to be clear and age appropriate.
**STANDARD 5** - *Detrimental use of data* prevents platforms from using children's personal data in ways that may be harmful, including unintentionally suggesting inappropriate content to children or exposing them to unfair marketing practices.
**STANDARD 6** - *Policies and community standards* requires platforms to enforce their own community standards, including behavior and content guidelines.
**STANDARD 12** - *Profiling* overlaps with Standard *5,* but specifically mandates that platforms can only profile minors if safeguards are in place to prevent minors from suffering harm due to profiling. This includes, but is not limited to, suggested content or targeted advertising.

**Age-Appropriate Design**

The UK AADC requires platforms take a minor's developmental stage into consideration in all platform designs, and gives guidelines on ages and developmental stages of children.[5]

**There were 43 changes across platforms** relating to this category. As a result of these changes, minors can expect fewer personalized advertisements, fewer advertisements in general, and an experience that is catered more specifically to their developmental stage. Many, if not most, of the changes included in this report include some age-specific components. Privacy settings, content management, screen time management, and potentially addictive designs are all impacted. Some changes simply delineate between children and adolescents (e.g. defined as under 13 versus 13 and over), whereas others attempt to divide developmental stages more finely.

*Examples:*

- TikTok's "curfew" on push notifications delineates between users 13-15 (who will no longer receive push notifications after 9pm), and users 16-17 (who will no longer receive push notifications after 10pm).

- YouTube Kids started to remove what they call "overly commercial content" such as product packaging videos.

- YouTube now offers 3 different content settings for minors, all of which can be controlled by their parents. *Explore* permits content appropriate for children 9+, *Explore More* permits content appropriate for adolescents 13+, and *Most of YouTube* permits content intended for nearly all YouTube audiences.

- Instagram began asking for a user's age when they make an account and are purportedly using machine learning to confirm user age.

- YouTube is attempting to use machine learning to identify underage users, and those profiles flagged as minors will require a "hard identifier" like a credit card.

- YouTube announced an AI tool to detect videos that require age-restriction.

- TikTok introduced *Restricted Mode*, an AI-powered tool to filter age-inappropriate content and updated their system to identify mature content for age-restriction.

- SafeSearch, a Google Search feature that filters inappropriate content, is automatically turned on for users under 18.

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5. **STANDARD 3** - *Age appropriate application* explicitly states that age must be taken into consideration when applying any standard of the UK AADC, though it indicates flexibility in how this might be accomplished. This standard also requires platforms to develop proportionate age-estimation methods to ensure that specific users are receiving an experience that is developmentally appropriate, or to apply settings appropriate for minors to all users.
**STANDARD 4** - *Transparency* provides examples of what "age appropriate application" can look like
**STANDARD 11** - *Parental controls* provides examples of what "age appropriate application" can look like
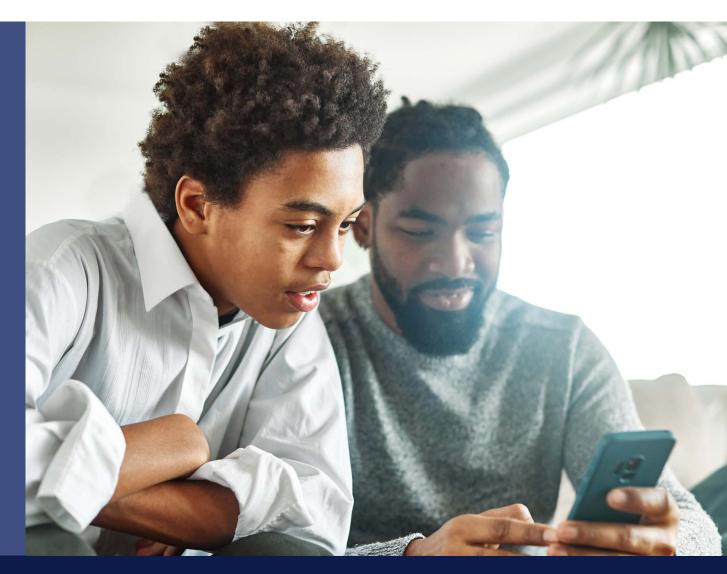**STANDARD 13** - *Nudge techniques* provides examples of what "age appropriate application" can look like
**STANDARD 15** - *Online tools* provides examples of what "age appropriate application" can look like

**Privacy, Security and Data Management**

The privacy of minors is a key concern of the UK AADC. A primary feature of the UK AADC is data minimization, meaning platforms may only collect, use, store and transfer the personal data of minors that is necessary to provide a service a child has requested.  Further, privacy settings (such as who can see a child's profile) must be set to high by default.

**There were 31 changes across platforms** relating to this category. Companies addressed this by either changing default privacy settings, or expanding user control over their own data.  We observed sweeping changes to privacy settings across many platforms, but not all. Social media accounts of underage users will default to the most private settings available. On search engines and social media, it is harder to find minors and to interact with them. In most instances minors can override these default settings, however for users under 13 many privacy settings are not adjustable.

On Google Search, all users can find and remove their personal information from search results, and minors and their guardians have additional control to remove personal information and the likeness of the minor from search results.

**Examples:**
- YouTube,  TikTok, and Instagram will now automatically set accounts of underage users to the most private setting (under 18, and under 16 respectively).
    - On TikTok, this includes restrictions on direct messaging (including 16-17 year old years), video sharing only to friends and followers, and restrictions on video downloads.
    - On Instagram, this includes restricting content to followers only, prohibiting comments on minors' content, and preventing minors' content from appearing in "Explore" or hashtag searches.
    - On YouTube, underage users' content is automatically uploaded as private, though minors can opt-in to sharing publicly. Additionally, commenting on underage user's material is either prohibited by default or severely restricted.

- On Instagram, users can no longer tag minors who do not follow them.

- Instagram prohibits adults from messaging minors who are more than 2 years younger than them.

- Instagram will notify minors when they are interacting with an adult who has been flagged for suspicious behavior.

- TikTok limits who can download a minor's content, unless the user permits it.

- Instagram now allows users to revoke third-party app access to new content on their accounts.

- Google gives users under 18 and their guardians the ability to remove images of the user from Google Search.

- Google added additional types of information to the personal information users could request to have removed.

- Google announced the Google Search tool to help track personal information available on Google Search and request its removal.

**Time Management**

The UK AADC prevents platforms from using designs or features that can lead minors to make harmful decisions or may be used to manipulate a user's behavior. Platforms are encouraged to add structures to support healthy engagement and remove features that may promote addictive patterns of use.[6]

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6. **STANDARD 1** - *Best interests of the child* considers children's best interests, including their health and wellbeing, in their designs and operations.
**STANDARD 5** - *Detrimental use of data* cautions platforms against using minors' data in a way that could lead to harm, including profiling a minor in order to keep them on a platform, such as personalized content feeds.
**STANDARD 12** - *Profiling* instructs platforms to be very careful about how they profile minors and how they use profiling data, including to present personalized advertisements or content.
**STANDARD 13** - *Nudge techniques* overlaps with Standard *12,* and specifically prohibits designs that could lead a minor to give up more data than absolutely necessary. This standard also recommends implementing designs that promote privacy and wellbeing, including screen time management.

**There were 11 changes across platforms** relating to this category. All three of the social media platforms that we reviewed made changes to improve screen time management. Some included design changes while others included new user tools. Minors can expect fewer features intended to keep them on a platform, such as notifications. They can now access more features to help manage screen time, like reminders to take breaks or even screen time limits. Platforms took a two-fold approach to screen time management. Some opted to just turn off certain features for minors. These features include personalized feeds and notifications, particularly at night. Other platforms opted for additional features to manage screen time, such as regular nudges that remind underage users to take breaks. Some were also minor-specific changes, often changing default settings for certain age groups of users to promote better screen time management.

**Examples:**
- On YouTube, autoplay is turned off by default on YouTube Kids and reminders to take breaks will be turned on by default for users 13-17.

- TikTok now provides all users with additional methods to reset their recommendation feed.

- Tiktok introduced a curfew on push notifications for users under 18, with age-specific curfews.

- TikTok also introduced new screen time limit options. Initially users could limit to 2 hours per day. Now they can choose 40, 60, 90 or 120 minutes per day, for 30 days.

- Snapchat piloted methods to allow users to pause "Snap Streaks".

- Instagram now allows users to mute notifications in the application.

- Instagram announced the Take A Break tool that, when turned on, will notify users when they have been on Instagram for a certain amount of time.

# DISCUSSION

As this preliminary snapshot shows, the UK AADC has been successful in guiding a number of the largest tech companies in redesigning their platforms for enhanced safety and well-being of their youth users. Notably, not all platforms made progress in all areas and all of the fifteen standards were not fully addressed. In spite of these shortcomings, these changes have the potential to create a safer and healthier online experience for children and adolescents than what was available five years ago. At a minimum our findings suggest that industry can make potentially meaningful changes in response to legislation and regulations.

It is not possible to attribute platform changes to any specific Code standard with certainty, though some suites of changes are more likely to be connected to UK AADC requirements. These include default privacy settings, age-assurance, and restrictions on personalized ad content, which are all specifically mentioned in the UK AADC. Additionally, some changes are related to UK AADC guidance, even if it may be unclear whether or not the UK AADC is the direct cause. These include screen time management and reduction in addictive design. Other changes are arguably in the spirit of the UK AADC, such as updates intended to improve mental health or overall health. Overall, the evidence in **this report suggests a strong impact of the UK AADC to the global regulatory landscape and specific positive changes made by the largest platforms.**

Notably, other changes outside of the scope of the AADC have also gained momentum. Since 2018, we have seen a substantial expansion of parental control tools. The broad expansion of parental control tools could be viewed as an attempt to address varied concerns with online platforms without changing the fundamental user experience, or to circumvent age-verification. Parental controls are not required by the UK AADC. Other than a brief mention of "the role of parents in protecting and promoting the best interests of the child," the UK AADC only discusses them in terms of children's privacy. According to Standard *11 - Parental controls,* minors must be notified when being monitored by parental controls. This means the expansion of parental controls may move platforms out of compliance with the UK AADC if they are not notifying minors appropriately. While parental controls can be one way of incorporating additional support for youth, it is crucial that these tools not be used to put additional burden on parents (or the parent-child relationship) or excuse a lack of changes to the fundamental designs which put youth at greater risk online.

The direct effects on user experiences were not tested by this report, though there is substantial research on the effects of certain designs which may suggest we can expect positive impacts. However, future research should include a more direct examination of how these changes are viewed by users under 18, particularly at the intersection of multiple identities, and how their experiences have changed as a result. A deeper analysis of how the changes announced publicly actually function for individual users is also needed to expand our understanding of the full scope of the AADC's impact. In addition, research tracking enforcement actions will help in understanding the effectiveness of the Code and the potential for fines and remedies to compel compliance.

## Companies in Their Own Words on the AADC

**TikTok:** "We have voluntarily implemented much of the Age-Appropriate Design Code here in the United States… We strongly and enthusiastically support that kind of child safety law."

**Snapchat:** "The Age Appropriate Design Code… we are looking to exactly that model to apply elsewhere."

**Meta:** "We're committed to meeting the obligations under the code, and to providing young people with age-appropriate experiences."

**Google:** "The Age Appropriate Design Code has helped us determine new ways to keep our users safe."

The findings of this report are preliminary. Only changes announced directly by companies were included, thus it is possible that changes announced elsewhere, or not announced at all, were missed. However, given the public pressure to comply and increasingly negative press, it seems reasonable to assume that companies would publicize positive changes when possible. There was significant variability in what was announced and the way it was presented, which required subjective assessments of whether an announced change was appropriate to include. Companies may have opted to announce changes in transparency reports, which were not included in this report.

Additionally, this report does not confirm direct causality between the Code and the changes discussed in this report, though the comparative timing and parallels between Code guidance and announced changes do imply a relationship. It should be noted that enforcement is not necessarily the goal of the UK AADC, but instead to identify potential areas of noncompliance with GDPR requirements. Whereby the AADC has provided additional guidance needed to help platforms improve their compliance, as indicated by many of the positive changes noted above, the Code can be considered successful.

In structure the UK AADC is intended to inform all actions of a company without being overly prescriptive and thus is necessarily ambiguous. This creates flexibility, but can be difficult for companies to interpret and challenging to enforce. Additional research should explore more directly how companies are interpreting the standards of the AADC and applying them to design changes, as well as where additional guidance or specificity may be needed for further progress.

It is also harder to monitor compliance with an ambiguous code, since compliance may take many forms, or may be something intangible, such as the *intent* of the design choice.

More prescriptive codes are easier to monitor, if the changes are publicly detectible, but may narrow the scope of regulations too much, permitting loopholes for companies. Furthermore, just because a code is specific does not mean monitoring compliance is easy either. Code 6 - *policies and community standards* states that platforms "need to adhere to your own published terms and conditions and policies." This is very specific, but the only way to truly determine compliance is to check the platform policies with actual moderation practices. As the UK AADC was not written with direct enforcement in mind, these limitations are not surprising. However, future AADC legislation should consider monitoring and enforcement guidelines from the outset. Some of this is improved on in US AADC proposals, since they are introduced as laws. Future research should also explore broader compliance with the UK AADC standards with more detailed data than can be acquired from public announcements to expand upon the findings of this report.

Of note, the parent companies of the platforms examined in this preliminary report (Google, Amazon, Meta, Snap Inc., and TikTok) are all members of NetChoice, the predominant litigator blocking online platform regulations in the US. Netchoice is currently the plaintiff in the challenge to the CA AADC, which is modeled off of the UK's AADC. Despite strong efforts to stall the progress of the AADC in the US, these platforms continue to make changes informed by the standards outlined in the UK AADC. The impact of the UK AADC continues to have a significant impact on global regulatory strategies, as well. Other countries in Europe (France, the Netherlands, and Sweden) and other states in the US (Minnesota, Maryland, Vermont, Illinois, and Hawaii) continue to develop their own legislation modeled after the Code established in the UK. We hope that each additional passage generates the same momentum for change as we saw first with the UK AADC and then again with the CA AADC prior to its injunction.

*Future research should include a more direct examination of how these changes are viewed by users under 18, particularly at the intersection of multiple identities, and how their experiences have changed as a result.*

# APPENDIX A: *AADC Background*

## UK AADC

The UK AADC is part of the Data Protection Act, born out of the GDPR. The European Union's General Data Protection Regulation (GDPR) is a comprehensive set of rules designed to enhance personal data protections and ensure consistency across the European Union, addressing the collection and use of personal data by both governments and the private sector. It emphasizes informed consent, data portability, and increased transparency, with strict penalties for non-compliance. The GDPR was adopted in April 2016, and went into effect May 2018.

The Data Protection Act 2018 (DPA 2018) is a law in the United Kingdom that serves as the country's implementation of the GDPR. It is designed to control the use of personal information by organizations, businesses, or the government, and uphold individuals' rights. The Act requires that personal data must be used in a manner that is adequate, relevant, and limited to what is necessary. It also mandates that appropriate security measures be put in place to protect the data. The law implements stronger legal protection for more sensitive information, such as health, racial/ethnic origin, political opinions, and religious beliefs. Furthermore, it grants individuals certain rights with respect to their personal data, such as improved access, the right to data portability, and protections against automated or machine-generated decision making.

The draft UK AADCs were released in 2019, and went into effect September 2020. Companies were given a 12-month grace period. Thus meaningful enforcement did not start until September, 2021.

The UK AADC, DPA, and GDPR exist in a broader landscape of legislation and regulation in the UK that support data privacy and online safety. For a list of other relevant policies, see Appendix B.

## California AADC

The California Consumer Privacy Act (CCPA) was passed and signed into law June 2018, and went into effect January 2020. The act established consumer data privacy protection in the State of California, requiring greater transparency of data sales and allowing users to opt out of the sale of their data. The California Privacy Rights Act of 2020 is an amendment to the CCPA, giving consumers additional control over the collection and use of their personal data, and created the California Privacy Protection Agency to implement and enforce the CCPA and CPRA.

Passed in September 2022, AB-2273, "The California Age-Appropriate Design Code Act," (CA AADC) is intended to further "the purposes and intent of the The California Privacy Rights Act of 2020." The CA AADC is inspired by the UK AADC. It recapitulates much of the UK AADC, modifying some language, and creates The California Children's Data Protection Working Group to advise on the implementation of the CA AADC. Of note, the CA AADC operates as primary legislation in CA, whereas the UK AADC is a non-regulatory code of practice. Though the CA AADC was set to take effect July 2024, NetChoice, an industry lobbying group representing Amazon, Meta, Google, TikTok, Snapchat, and a range of other tech companies, challenged the CA AADC in 2023, which resulted in an injunction placed on the law in September 2023.

## The UK AADC Standards

### 1. Best interests of the child
- Asserts that the "best interests of the child should be a primary consideration" in the design of any online services which are likely to be accessed by children.
- Rooted in The United Nations Convention on the Rights of the Child (UNCRC), which recognizes fundamental rights and freedoms of children, and culturally-specific rights of families and communities in raising children. While the United States signed the treaty, it remains the only U.N. member nation not to ratify it.

### 2. Data protection impact assessments (DPIA)
- Required for potentially risky operations, including "the use of the personal data of children or other vulnerable individuals for marketing purposes, profiling or other automated decision-making, or if you intend to offer online services directly to children," and should be conducted before any data processing begins.
- Publishing a DPIA is encouraged but not required.

### 3. Age appropriate application
- Intended to ensure that services likely to be accessed by children are developmentally appropriate by identifying the age of individual users and tailoring services as needed. If a service is not likely to be accessed by a specific age range, or is not intended to be accessed by that age range, design does not need to consider that range. Suggested age ranges include:
  - 0-5 years: pre-literate and early literacy
  - 6-9 years: core primary school years
  - 10-12 years: transition years
  - 13-15 years : early teens
  - 16-17 years: approaching adulthood
- Alternatively, services can choose not to assess individual user ages by reducing data risks through the application of the AADC standards for all users.

### 4. Transparency
- Platforms must provide clear explanations of their data use, policies, and community standards to their users, written with consideration for the developmental stage of the audience. "Just-in-time" explanations are also recommended at the time when data use is activated.
- Additional guidance is provided for the use of video, audio, and graphical descriptions as needed for younger children.

### 5. Detrimental use of data
- Prohibits the clearly detrimental or unlawful use of children's data.
- ICO is clear that they are not experts on content moderation nor child welfare, but provide some guidelines.

### 6. Policies and community standards

- Platforms must adhere to and enforce their own published community standards, policies, and terms. These can include uses of personal data in accordance with privacy policies, but also user behavior and content policies.

### 7. Default settings

- Default settings must be high privacy for minors unless there is a compelling reason to not do so that is in the best interests of the child or is required for a core service.
- Minors may still elect to change these settings, but clear risk explanations should be provided at the time of any change, and options should be included for changes to be temporary or permanent.

### 8. Data minimization

- Recommends the minimum necessary data collection and retention for services knowingly used by minors. Minors must have as much control as possible over which data is collected based on which elements of a service they wish to use.

### 9. Data sharing

- Prohibits sharing of minors' personal data with third parties (or other sectors within an organization) without a compelling reason, taking into consideration the best interests of the child.

### 10. Geolocation

- Geolocation default setting should be "off" for minors, with clear notification whenever it is on. Geolocation for minors should default back to "off" whenever a session ends.

### 11. Parental controls

- If parental controls are available, platforms must inform the child, including clear notifications during any tracking or monitoring. The code includes recommendations for different developmental stages.
- Recommendations for parental education and resources on the importance of child safety and parent-child dialogue are included.

### 12. Profiling

- Any profiling must be off by default (defined as "any form of automated processing of personal data consisting of the use of personal data to evaluate certain aspects relating to a natural person, in particular to analyze or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour location or movements").
- Profiling can only be used with a compelling reason that considers the best interests of the child, and with appropriate risk mitigation measures.

## 13. Nudge techniques

- Prohibits nudge techniques that encourage minors to provide personal data or turn off privacy settings. Encourages the use of pro-privacy nudge techniques, particularly for younger children, as well as nudge techniques that promote the health and well-being of users.

## 14. Connected toys and devices

- Effective tools must be in place for all connected toys/devices to ensure compliance with the code. Connected toys and devices include any physical product which is connected to the internet for functionality; products which store personal data within the device itself need not comply.

## 15. Online tools

- Services must provide tools to allow minors to exercise their data rights and report concerns. These rights include:
  - The right to access
  - The right to rectification
  - The right to erasure
  - The right to restrict processing
  - The right to data portability
  - The right to object
  - Rights in relation to automated decision making and profiling
- All tools should be prominent, developmentally appropriate, and easy to both access and use. The code includes specific recommendations for different developmental stages.

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Youth Safety and Wellbeing

| Change | Month/Year + Platform |
|---|---|
| New filter that hides comments containing attacks on a person's appearance or character, as well as threats to a person's well-being or health. | **May 2018 Instagram** |
| Users can report a search result for being spam, phishing or malware. | **June 2018 Google Search** |
| New experience geared toward 8-12 year olds that includes additional age-appropriate content. | **September 2018 YouTube** |
| Using machine learning technology to proactively detect bullying in photos and their captions and send them to their Community Operations team to review. | **October 2018 Instagram** |
| Use of new machine learning tools to support removal of inauthentic likes, follows, and comments from accounts that use third-party apps to boost their popularity. | **November 2018 Instagram** |
| Will not allow any graphic images of self-harm, nor will they show/recommend non-graphic self-harm content in search, hashtags and the explore tab. | **February 2019 Instagram** |
| Disabled comments on videos featuring minors. | **February 2019 YouTube** |
| All comments including selected keywords will disappear in the conversations on users' videos, including previously published comments containing these comments. | **April 2019 TikTok** |
| Upgraded optional "Restricted Viewing Mode" that limits inappropriate content. The feature is activated via password and valid for 30 days. | **April 2019 TikTok** |
| New feature powered by AI that notifies people when their comment may be considered offensive before it's posted. | **July 2019 Instagram** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Youth Safety and Wellbeing, cont.

| *Change* | *Month/Year + Platform* |
|---|---|
| New policy where, in addition to removing accounts with a certain percentage of violating content, they will also remove accounts with a certain number of violations within a window of time. | **July 2019 Instagram** |
| New "Restrict" setting allows users to protect their account while still keeping an eye on a bully. Once Restrict is enabled, comments on posts from a restricted person will only be visible to that person. The user can choose to: view the comment; approve the comment so everyone can see it; delete it; or ignore it. | **October 2019 Instagram** |
| Series of policy and product changes that update how they tackle harassment on the platform, including additional consequences for violators and a new comment approval system for creators. | **December 2019 YouTube** |
| All creators are required to designate their content as "made for kids" or "not made for kids" in YouTube Studio, and data from anyone watching a video designated as made for kids will be treated as coming from a child, regardless of the age of the user. | **January 2020 YouTube** |
| New advertising policies place stronger restrictions on weight loss claims and references to body image. This means that ads for weight management products can only reach users above the age of 18. | **September 2020 TikTok** |
| Rolling out more AI-powered technology to scan and catch more videos that may require age restriction. | **September 2020 YouTube** |
| Using machine learning to detect content for review, by developing and adapting their technology to help them automatically apply age-restrictions. | **September 2020 YouTube** |
| New features to remove the spread of harmful and hateful comments, such as a new feature that will warn users when their comment may be offensive to others, giving them the option to reflect before posting. | **December 2020 YouTube** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Youth Safety and Wellbeing, cont.

| *Change* | *Month/Year + Platform* |
|---|---|
| Banner on a video if the content has been reviewed but cannot be conclusively validated. The video's creator will be notified that their video was flagged as unsubstantiated content. If a viewer attempts to share the flagged video, they'll see a prompt reminding them that the video has been flagged as unverified content. | **February 2021 TikTok** |
| There are 3 different versions of "tailored services" parents can choose from for their children, one for 9+, one for 13+, and one for "Most of YouTube." These experiences restrict what type of content a child will have access to. | **February 2021 YouTube** |
| New feature gives creators more control over the comments on their videos, and prompts people to reconsider posting unkind or inappropriate comments. | **March 2021 TikTok** |
| Adults assessed to have sent a large amount of follow or message requests to users under 18 will be flagged as exhibiting "suspicious behaviour." | **March 2021 Instagram** |
| Users under the age of 18 will receive a safety prompt if an adult flagged with 'suspicious behaviour' has messaged them. These safety prompts will give users under 18 the option to end the conversation, or block, report, or restrict the adult. | **March 2021 Instagram** |
| Adults with suspicious behaviour may have their comments automatically hidden when they comment on public posts on an account belonging to a child. | **March 2021 Instagram** |
| Users can now block accounts posting in comments in bulk. | **May 2021 TikTok** |
| Targeted ads to users under 18 restricted to age, gender and location only. | **July 2021 Instagram** |
| Filters out explicit results for all users under 18. | **August 2021 Google Search** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Youth Safety and Wellbeing, cont.

| Change | Month/Year + Platform |
|---|---|
| Removed overly commercial content on YouTube Kids. | **August 2021 YouTube** |
| Search interventions (when someone searces for suicide content they are guided to a helpline) and updated labels for sensitive content. | **September 2021 TikTok** |
| The dislike count is private across the platform, to minimize harassment of content creators. | **November 2021 YouTube** |
| Removed alarmist warnings about self-harm hoaxes. Safety center resources dedicated to challenges and hoaxes, particularly resources for caregivers. Improved warning labels for certain content. | **November 2021 TikTok** |
| Exploring expansion of  "Limit Even More," the highest control setting for sensitive content, beyond the Explore feature to also cover Search, Hashtags, Reels and Suggested Accounts. | **December 2021 Instagram** |
| Posts that may contain bullying, hate speech, or potentially upsetting content appear lower in Feed and Stories. | **January 2022 Instagram** |
| Clarified reporting mechanisms in the community guidelines. Will start to remove content that promotes disordered eating, not just eating disorders. Clarify prohibited content. | **February 2022 TikTok** |
| In-app reporting guide for potentially harmful content. Announced research collaborations. More streamlined content reporting. | **February 2022 TikTok** |
| Tool to automatically filter out videos with certain words or hashtags. | **July 2022 TikTok** |
| System to filter content to help prevent content with overtly mature themes from reaching audiences under the age of 18. | **July 2022 TikTok** |
| The Sensitive Content Control has only two options for teens: "Standard" and "Less." New users under 16 years old will be defaulted into the "Less" state. Teens already on Instagram will get a prompt encouraging them to select the "Less" experience. | **August 2022 Instagram** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Youth Safety and Wellbeing, cont.

| Change | Month/Year + Platform |
|---|---|
| When users block someone they'll have the option to block other accounts associated with the same person, making it more difficult for them to interact directly again. | **October 2022 Instagram** |
| More ways to report what types of content users want to avoid in places like Explore, Search and Reels. | **January 2023 Instagram** |
| Updates to reporting and penalizing accounts in violation of community guidelines. | **February 2023 TikTok** |
| Certain search terms or phrases will now be directed to resources about the dangers of human smuggling and trafficking from STOP THE TRAFFIK. | **March 2023 TikTok** |
| YouTube consulted with third-party experts to enact policies such as age verification on certain videos and updating its community guidelines to include ED details. | **April 2023 YouTube** |
| Changes to prevent My AI from giving responses that break Snapchat guidelines, including giving age-inappropriate responses. | **April 2023 Snapchat** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Age-Appropriate Design

| *Change* | *Month/Year + Platform* |
|---|---|
| New experience geared toward 8-12 year olds that includes additional age-appropriate content. | **September 2018 YouTube** |
| Upgraded optional "Restricted Viewing Mode" that limits inappropriate content. The feature is activated via password and is valid for 30 days. | **April 2019 TikTok** |
| Date of birth must be provided when creating an account, to maintain that all users are at least 13 years old. | **December 2019 Instagram** |
| Only users aged 18 and over are allowed to purchase, send, or receive virtual gifts. | **December 2019 TikTok** |
| All creators are required to designate their content as "made for kids" or "not made for kids" in YouTube Studio, and data from anyone watching a video designated as made for kids will be treated as coming from a child, regardless of the age of the user. | **January 2020 YouTube** |
| Direct messaging disabled for users under 16. | **April 2020 TikTok** |
| Provided users between 13 and 17 in Europe with a summary of the Privacy Policy. Added details about when users are asked to provide proof of identity or age to use certain features, such as Live. | **June 2020 TikTok** |
| More viewers will be asked to sign in to their accounts to verify their age before watching, as more videos are being age-restricted. | **September 2020 YouTube** |
| New attempt to establish that a user is above the age of 18, first with "historical indicators / profiling" followed by submission of a hard identifier (photo ID or credit card) if needed. | **September 2020 YouTube** |
| New advertising policies place stronger restrictions on weight loss claims and references to body image. This means that ads for weight management products can only reach users above the age of 18. | **September, 2020 TikTok** |

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# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Age-Appropriate Design, cont.

| Change | Month/Year + Platform |
|---|---|
| Rolling out more AI-powered technology to scan and catch more videos that may require age restriction. | **September 2020 YouTube** |
| Using machine learning to detect content for review, by developing and adapting their technology to help them automatically apply age-restrictions. | **September 2020 YouTube** |
| Users ages 13-15 can only choose between "Friends" or "No one" when selecting who can comment on their videos. They will not be able to choose "Everyone." | **January 2021 TikTok** |
| The setting 'Suggest your account to others,' which recommends profiles in the For You page will be switched to Off by default for users under the age of 16. | **January 2021 TikTok** |
| Duet and Stitch, which allow users to collaborate virtually with other TikTok users/videos will not be available to users under the age of 16. | **January 2021 TikTok** |
| For users aged 16-17, the default download setting for their videos will be set to "Off." | **January 2021 TikTok** |
| Users cannot download videos that have been created by users under 16. | **January 2021 TikTok** |
| There are 3 different versions of "tailored services" parents can choose from for their children, one for 9+, one for 13+, and one for "Most of YouTube." These experiences restrict what type of content a child will have access to. | **February 2021 YouTube** |
| Developing new machine learning and AI technology to identify underage accounts. | **March 2021 Instagram** |
| Adults cannot directly message young people who do not follow them. | **March 2021 Instagram** |
| Users under the age of 18 will receive a safety prompt if an adult flagged with "suspicious behaviour" has messaged them. These safety prompts will give under 18s the option to end the conversation, or block, report, or restrict the adult. | **March 2021 Instagram** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Age-Appropriate Design, cont.

| Change | Month/Year + Platform |
|---|---|
| Accounts of users under the age of 16 will automatically default to "private" during initial account set-up, meaning only followers that a user accepts and approves of will be able to see their photos, videos, and posts. | **July 2021 Instagram** |
| Targeted ads to users under 18 restricted to age, gender and location only. | **July 2021 Instagram** |
| New users and existing users who have not entered their date of birth will be regularly prompted to do so, with access to the app eventually shut off until date of birth is provided. Warning screens will be placed on sensitive or graphic posts, with users required to enter their birthdate in order to view them. | **August 2021 Instagram** |
| Removed overly commercial content on YouTube Kids | **August 2021 YouTube** |
| Autoplay turned off for users under 18 and break and bedtime reminders will be turned on by default. | **August 2021 YouTube** |
| When someone aged 16-17 joins TikTok, their Direct Messaging setting will now be set to "No One" by default. | **August 2021 TikTok** |
| A pop-up will appear when teens under the age of 16 are ready to publish their first video, asking them to choose who can watch the video. They won't be able to publish their video until they make a selection. | **August 2021 TikTok** |
| Additional information to help users aged 16-17 understand how downloads work. If they opt to turn the download option on, they'll receive a pop-up asking them to confirm that choice before others can download their videos. | **August 2021 TikTok** |
| Push notifications disabled after a certain time (9 pm for 13-15 year old users, 10 pm for 16-17 year old users) | **August, 2021 TikTok** |
| The default upload settings are changed to the most private setting for users under 18. | **August 2021 YouTube** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Age-Appropriate Design, cont.

| Change | Month/Year + Platform |
|---|---|
| Filters out explicit results for all users under 18. | **August 2021 Google Search** |
| Produced a collection of new resources to help 13-17 year-olds understand how advertising works on the platform, as well as the best ways to keep themselves safe. | **October 2021 TikTok** |
| Removed the ability for people to tag or mention teenagers who don't follow them, or to include their content in Reels Remixes or Guides by default when they first join Instagram. | **December 2021 Instagram** |
| Testing of new age verification options. In addition to providing an ID, people will now be able to ask others to vouch for their age, or use technology that can confirm their age based on a video selfie. | **June 2022 Instagram** |
| "About this ad" feature so users can see howTikTok uses activity to inform the ads users see. Alongside this, changing the controls users have over ads based on activity. | **June 2022 TikTok** |
| Users under 18 will have to opt-in to personalized ads. | **June 2022 TikTok** |
| System to filter content to help prevent content with overtly mature themes from reaching audiences under the age of 18. | **July 2022 TikTok** |
| The Sensitive Content Control has only two options for teens: "Standard" and "Less." New users under 16 years old will be defaulted into the "Less" state. Teens already on Instagram will get a prompt encouraging them to select the "Less" experience. | **August 2022 Instagram** |
| Livestream hosting is disabled for users under 18. | **March 2023 TikTok** |
| 60-minute daily screen time limit set for all users under 18. | **March 2023 TikTok** |
| YouTube consulted with third-party experts to enact policies such as age verification on certain videos and updating its community guidelines to include ED details. | **April 2023 YouTube** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Privacy, Security and Data Management

| *Change* | *Month/Year + Platform* |
|---|---|
| Changes to prevent My AI from giving responses that break Snapchat guidelines, including giving age-inappropriate responses. | **April 2023 Snapchat** |
| Disabled comments on videos featuring minors. | **February 2019 YouTube** |
| New in-app features to help users better control the data users share with third-parties. | **October 2019 Instagram** |
| Only users aged 18 and over are allowed to purchase, send, or receive virtual gifts. | **December 2019 TikTok** |
| Data from anyone watching a video designated as "made for kids" will be treated as coming from a child, regardless of the age of the user. | **January 2020 YouTube** |
| Direct messaging disabled for users under 16. | **April 2020 TikTok** |
| Provide users between 13 and 17 in Europe with a summary of the Privacy Policy. Added details about when users are asked to provide proof of identity or age to use certain features, such as Live. | **June 2020 TikTok** |
| Users 13-15 can only choose between "Friends" or "No one" when selecting who can comment on their videos. They will not be able to choose "Everyone." | **January 2021 TikTok** |
| Duet and Stitch, which allow users to collaborate virtually with other TikTok users/videos will not be available to users under the age of 16. | **January 2021 TikTok** |
| The setting "Suggest your account to others," which recommends profiles in the For You page will be switched to Off by default for users under the age of 16. | **January 2021 TikTok** |
| Users cannot download videos that have been created by users under 16. | **January 2021 TikTok** |
| For users aged 16-17, the default download setting for their videos will be set to "Off." | **January 2021 TikTok** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Privacy, Security and Data Management, cont.

| Change | Month/Year + Platform |
|---|---|
| New filter, which includes a swipe-up link to more resources, such as a student privacy communications toolkit. | **January 2021 Snapchat** |
| Adults cannot directly message young people who do not follow them. | **March 2021 Instagram** |
| Adults assessed to have sent a large amount of follow or message requests to users under 18 will be flagged as exhibiting "suspicious behaviour." | **March 2021 Instagram** |
| Users under the age of 18 will receive a safety prompt if an adult flagged with 'suspicious behaviour' has messaged them. These safety prompts will give under 18s the option to end the conversation, or block, report, or restrict the adult. | **March 2021 Instagram** |
| Adults with suspicious behaviour may have their comments automatically hidden when they comment on public posts on an account belonging to a child. | **March 2021 Instagram** |
| Removes content that can potentially be harmful (e.g. personal info like government-issued IDs, medical and financial information etc). | **April 2021 Google Search** |
| Removes content that can potentially be harmful (e.g. personal info like government-issued IDs, medical and financial information etc). | **April 2021 Google Search** |
| Accounts of users under the age of 16 will automatically default to "private" during initial account set-up, meaning only followers that a user accepts and approves of will be able to see their photos, videos, and posts. | **July 2021 Instagram** |
| No longer showing posts from young people's accounts, or the accounts themselves, to adults that have shown potentially suspicious behavior. | **July 2021 Instagram** |
| When someone aged 16-17 joins TikTok, their Direct Messaging setting will now be set to "No One" by default. | **August 2021 TikTok** |

# APPENDIX B: *Exhaustive List of Changes Made*

## Category: Privacy, Security and Data Management, cont.

| Change | Month/Year + Platform |
|---|---|
| A pop-up will appear when teens under the age of 16 are ready to publish their first video, asking them to choose who can watch the video. They won't be able to publish their video until they make a selection. | **August 2021 TikTok** |
| Additional information to help users aged 16-17 understand how downloads work. If they opt to turn the download option on, they'll receive a pop-up asking them to confirm that choice before others can download their videos. | **August 2021 TikTok** |
| The default upload settings are changed to the most private setting for users under 18. | **August 2021 YouTube** |
| Form to request removal of images of minors from Google search results, | **October 2021 Google Search** |
| Removed the ability for people to tag or mention teenagers who don't follow them, or to include their content in Reels Remixes or Guides by default when they first join Instagram. | **December 2021 Instagram** |
| Users can bulk delete content they've posted like photos and videos, as well as their previous likes and comments. | **December 2021 Instagram** |
| Permits removal of additional types of personal information such as contact information like a phone number, email address, or physical address and additional information that may pose a risk for identity theft from search results. | **April 2022 Google Search** |
| New tool that helps users keep track of search results containing personal info and request their removal. | **May 2022 Google Search** |
| When users block someone they'll have the option to block other accounts associated with the same person, making it more difficult for them to interact directly again. | **October 2022 Instagram** |
| Livestream hosting is disabled for users under 18. | **March 2023 Tiktok** |
| New tools to help users manage their time: an activity dashboard, a daily reminder, and a new way to limit notifications. | **August 2018 Instagram** |

# APPENDIX B: *Exhaustive List of Changes Made*

| Category: Time Management | |
|---|---|
| *Change* | *Month/Year + Platform* |
| Additional screen time management options, including 40, 60, 90 or 120 minutes per day, for 30 days. | **April 2019 TikTok** |
| Push notifications disabled after a certain time (9 pm for 13-15 year old users, 10 pm for 16-17 year old users). | **August 2021 TikTok** |
| Autoplay turned off for users under 18 and break and bedtime reminders will be turned on by default. | **August 2021 YouTube** |
| If someone has been scrolling for a certain amount of time, a notification will ask them to take a break and suggest they set reminders to take more breaks in the future. They will also be shown tips to help them reflect and reset. | **December 2021 Instagram** |
| Tool to let people control how much time they spend on TikTok in a single sitting by enabling regular screen time breaks. | **June 2022 TikTok** |
| Can now set account to Quiet Mode. Users won't receive any notifications, profile's activity status will change to "In quiet mode" and will automatically send an auto-reply when someone DMs you. | **January 2023 Instagram** |
| New options to pause/restore streaks to permit breaks (full feature requires payment). | **March 2023 Snapchat** |
| 60-minute daily screen time limit set for all users under 18. | **March 2023 TikTok** |
| Screen time management and sleep reminders for all users. | **March 2023 TikTok** |
| Added option for users to reset their recommended feed. | **March 2023 TikTok** |

## APPENDIX C: *Relevant EU/UK Legislation and Regulations*

**General Data Protection Regulation (GDPR)**

**Irish Data Protection Commission**
- Tasked with upholding the data protection rights in Ireland

**Irish ePrivacy Regulations**
- Includes Communications (Retention of Data) Act 2011
- Codified EU ePrivacy Directive into Irish law (full directive; additional information provided by EPIC and McKinsey & Company)

**UK Privacy and Electronic Communications Regulations**
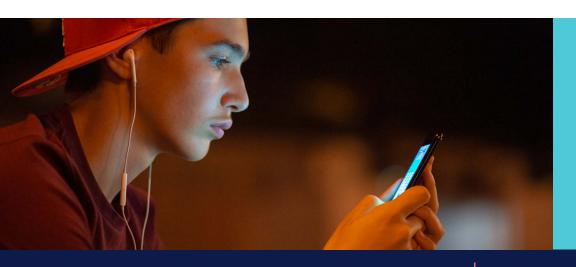
**The Data Protection Acts 1988 and 2003**

**Data Protection Act 2018**
- Additional resources
- Implementation of the GDPR for UK law
- Sits alongside the UK GDPR - the UK version of the GDPR that automatically converted the GDPR into UK law under the Brexit withdrawal agreement.

**UK Online Safety Act 2023**

**The Digital Services Act (DSA) and Digital Markets Act (DMA)**
- The DSA requires platforms to report monthly users to determine if they meet the "very large platform" threshold. This threshold was used to select platforms for this report.

## ABOUT US

**Children and Screens: Institute of Digital Media and Child Development** is an international non-profit organization founded in 2013 to understand and address compelling questions regarding media's impact on child development through interdisciplinary dialogue, public information, and rigorous, objective research bridging the medical, neuroscientific, social science, public health, educational, and academic communities.

At Children and Screens, we see an urgent need not only to advance research in the field, but also to more effectively share this research in ways that can positively influence policy and support families, educators, and others in making decisions about media with and for children.

We understand that it is not enough to look at questions of digital media use among children from a single perspective—whether medical, educational, or sociological. Rather, effective progress requires a multidisciplinary, comprehensive, "kaleidoscopic" approach. For this reason, Institute staff, partners, and colleagues represent a wide range of fields including pediatrics, child psychiatry, child psychology, neuroscience, communications, public health, education, and more. By bringing together experts from across both the medical and social sciences, the Institute seeks to broaden how the field is defined, the kind of questions that can be asked, and the diversity of impact that can be investigated.

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