



2017

**THE COMMON SENSE CENSUS:
MEDIA USE BY KIDS AGE
ZERO TO EIGHT**

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Jennifer Caldwell**

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INTRODUCTION

THIS REPORT DESCRIBES THE results of a unique national study — the third in a series of nationally representative, probability-based surveys documenting media-use patterns among children from birth to age 8 in America. The 2017 survey includes a representative sample of more than 1,400 parents from all regions of the country, from low- and high-income families, including parents who never graduated from high school and those who hold doctorates, and representing diverse racial and ethnic backgrounds. Combined with the results from the two earlier waves of the survey, in 2011 and 2013, the data offer an unprecedented opportunity to see how children's use of media has evolved over time as new technologies and new forms of content have been introduced.

Media have become such a central part of children's lives that understanding which media activities children are engaged in, for how long, and in what context is essential knowledge for those who are working to support children's healthy development. The topics covered in this report include:

- How much time children spend engaged in various media *activities*, including watching TV or online videos, playing video games, reading, or listening to music.
- How children divide their activities among various media *devices*, from television sets and console video games to computers, tablets, and mobile phones.
- How children's use of media varies by age, gender, socio-economic status, and race/ethnicity.
- How children's patterns of media use have changed over the course of the three waves of the study, in 2011, 2013, and 2017.

We explore the media devices to which children have access at home, how access to mobile media is disrupting more traditional forms of media use, whether the digital divide is closing, and what is happening with screen media use among children under 2. This year's survey also provides key insights into how parents view their children's media use — whether they think it helps or hurts their children across a range of developmental outcomes, and what does or does not concern them about media. It also explores parental co-use of media with children.

Media are so integrated into our daily lives that we inevitably assume that our own experiences and those of the people we know are at least somewhat indicative of what's happening in the rest of the country — that what happens with our own children or our friends' kids is probably what's happening with all kids. This report gives us a chance to get out of our "bubbles" and observe the revolutionary national trends that are unfolding around us, and to base our conclusions about kids and media not on anecdote or opinion, but on statistically reliable data.

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KEY FINDINGS

1

Mobile media have become a nearly universal part of the children's media landscape, across all levels of society.

Nearly all (98 percent) children age 8 and under live in a home with some type of mobile device, the same percentage that have a TV in the home (mobile media ownership is up from 75 percent in 2013 and 52 percent in 2011). Ninety-five percent of families with children this age now have a smartphone, up from 63 percent in 2013 and 41 percent in 2011, and 78 percent have a tablet (up from 40 percent in 2013 and 8 percent just six years ago, in 2011). Indeed, 42 percent of children now have their own tablet device — up from 7 percent four years ago and less than 1 percent in 2011.

2

Though the overall amount of media use is about the same as in past years, how children are using media has shifted considerably.

The average amount of time spent with mobile devices each day has tripled (again), going from 5 minutes a day in 2011 to 15 minutes a day in 2013 to 48 minutes a day in 2017. Overall, children 8 and under spend an average of about two-and-a-quarter hours (2:19) a day with screen media, up from 1:55 in 2013 but almost exactly the same amount they devoted to screens in 2011 (2:16). But online videos and content accessed through subscription services are a substantial part of the mix: Children spend an average of 17 minutes a day watching online videos from a source such as YouTube, 17 percent of all TV/video viewing time, and families with young children are now more likely to have a subscription video service such as Netflix or Hulu (72 percent) than they are to have cable TV (65 percent). Screen media use among children under 2 appears to be trending downward, from 58 minutes a day in 2013 to 42 minutes in 2017 (though this

FIGURE A. Mobile Devices in the Home, 2011-2017

Among 0- to 8-year-olds, those with:

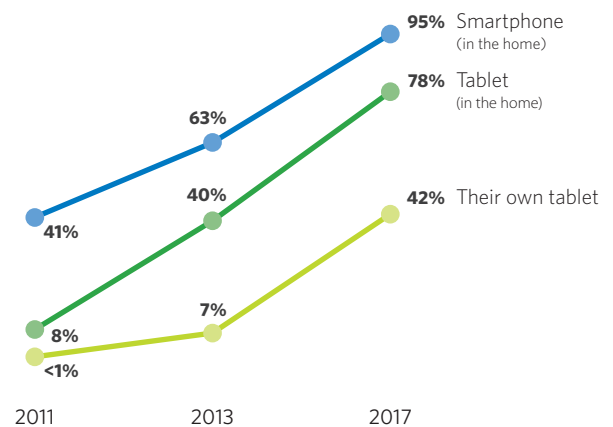
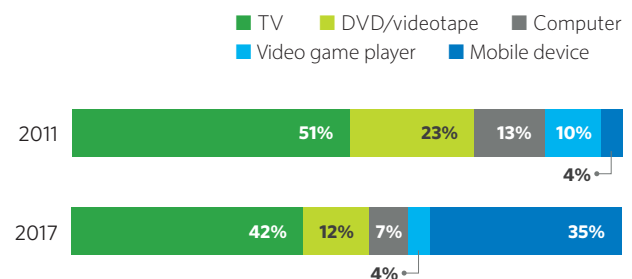


FIGURE B. Screen Media Use, by Platform, 2011 vs. 2017

Among 0- to 8-year-olds, share of time spent using:



Note: Video game player includes console and handheld players. Mobile device includes smartphone, tablet, iPod Touch, or similar device. Totals may not add to 100% due to rounding.

16-minute difference is not statistically significant), due mostly to declining viewing of DVDs. Use of mobile devices in this age group has increased modestly, but not as much as DVD viewing has declined.

3

Contrary to recommendations from pediatricians, many children use media shortly before bedtime, and many families leave the TV on in the background most of the time.

According to parents, nearly half (49 percent) of children age 8 or under often or sometimes watch TV or videos or play video games in the hour before bedtime, and 42 percent say the TV is on “always” or “most of the time” in their home, whether anyone is watching or not. But the American Academy of Pediatrics (AAP) recommends that children not sleep with devices in their bedrooms and refrain from using screen media for an hour before bed.¹ The AAP also recommends that parents turn off TVs when not in use, due to negative effects of background media.²

4

There are large differences in screen time by household income and parent education.

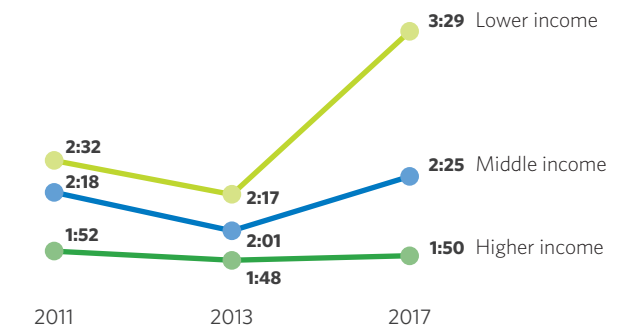
Children from lower-income homes spend an average of 1:39 more with screen media each day than those from higher-income homes (3:29 vs. 1:50). Children from homes with lower parent education consume more screen media than children from homes with higher parent education (2:50 vs. 1:37; a 1:13 difference). In contrast to these large differences by household income and parent education, there are no statistically significant differences in overall screen time by gender or race/ethnicity. The difference in screen media use between lower- and higher-income children and between those with lower- vs. higher-educated parents has been apparent across all three waves of the survey (2011, 2013, and 2017), but the gap is even larger in 2017 than it was in prior years. The reason the gap has grown larger is

TABLE A. Screen Media Use, by Device and Age, 2017
Average time spent daily (hours:minutes)

Device	All	Child's age			
	0 to 8	Under 2	2 to 4	5 to 8	
Television set	:58	:29 ^a	1:09 ^b	1:04 ^b	
DVD/videotape	:17	:06 ^a	:23 ^b	:18 ^b	
Mobile device	:48	:07 ^a	:58 ^b	1:02 ^b	
Computer	:10	* ^a	:05 ^b	:20 ^c	
Video game device	:06	* ^a	:04 ^b	:12 ^c	
Total screen media	2:19	:42^a	2:39^b	2:56^b	

*Less than one minute but more than zero.
Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

FIGURE C. Screen Media Use, by Income, 2011-2017
Average time 0- to 8-year-olds spent daily (hours:minutes)



Note: *Lower income* is less than \$30,000 a year; *middle income* is \$30,000 to \$75,000 a year; and *higher income* is more than \$75,000 a year.

1. AAP Council on Communications and Media (2016). Media use in school-aged children and adolescents. *Pediatrics*, 138(5). <http://dx.doi.org/10.1542/peds.2016-2592>
2. AAP Council on Communications and Media (2016). Media and young minds. *Pediatrics*, 138(5). <http://dx.doi.org/10.1542/peds.2016-2591>

that in 2017, lower-income children's television use has gone up (along with their use of mobile media), but higher-income children's television use has gone down. On any given day, more lower-income kids watch TV now than did four years ago (58 percent vs. 42 percent), and those who watch TV spend more time doing so (2:23 vs. 2:02).

5

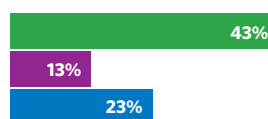
In general, Hispanic/Latino parents are the most concerned about children's media use, and African-American parents are most likely to say their children benefit from screen media.

Hispanic/Latino parents express the highest levels of concern about every potentially negative issue raised in the survey, such as sex and violence in media. For example, 54 percent of Hispanic/Latino parents are "very" concerned about violence in media, compared to 38 percent of African-American parents and 28 percent of whites. Similarly, 43 percent of Hispanic/Latino parents "strongly" agree that the less time kids spend with screen media the better, compared to 23 percent of white parents and 13 percent of African-American parents. On the other hand, African-American parents are more likely than white parents to say their child benefits from media use (83 percent vs. 72 percent, with Hispanic/Latino parents in between at 77 percent).

Hispanic/Latino parents express the highest levels of concern about every potentially negative issue raised in the survey, such as sex and violence in media.

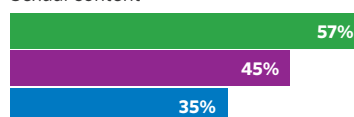
FIGURE D. Parental Concerns About Media, by Race/Ethnicity, 2017

Parents who "strongly" agree that the less time kids spend with screen media the better off they are.

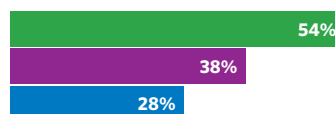


Parents who are "very concerned" about each of these in media.

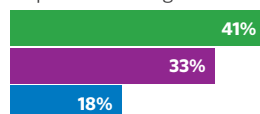
Sexual content



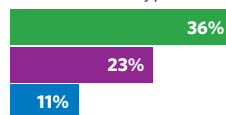
Violent content



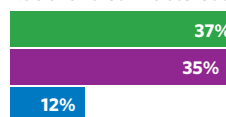
Depictions of drugs and alcohol



Gender stereotypes



Racial and ethnic stereotypes



■ Hispanic/Latino
■ African-American
■ White

6

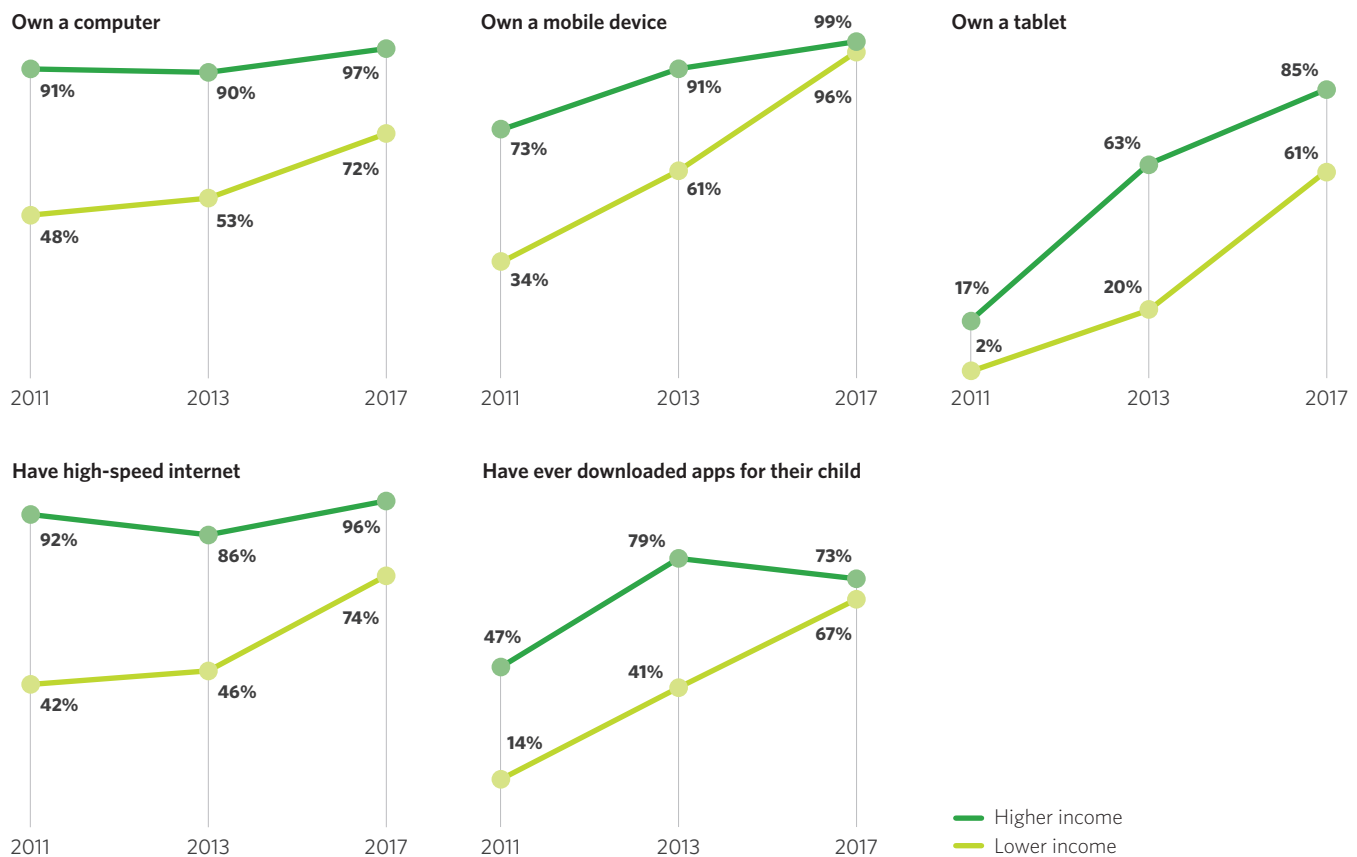
The digital divide still exists, but is much smaller than it used to be.

Today there is a 25 percentage-point gap in home computer access and a 22 percentage-point gap in high-speed internet access at home between children in lower- and higher-income households (72 percent vs. 97 percent for a home computer and 74 percent vs. 96 percent for high-speed internet). The gap in home computer and internet access is much smaller than it used to be: down from gaps between groups of 43 and 50 percentage points, respectively, in 2011. Children in lower-income homes are also still less likely to have a tablet at home (a 24 percentage-point difference). Sixty-one percent of lower-income families now have a tablet device, compared to only 2 percent in 2011 (and

compared to 85 percent of higher-income families today). However, the gap in overall mobile ownership has virtually disappeared (3 percentage points), due to the number of lower-income families that now have a smartphone. In 2011, 34 percent of lower-income families had a mobile device in the home; today 96 percent do. What we previously dubbed the “app gap” has shrunk substantially as well. Today two-thirds of lower-income parents (67 percent — not significantly different from higher-income parents) have downloaded apps for their child to use, compared to 14 percent in 2011. And lower-income children are as likely as higher-income children to have their own tablet device (40 percent from each group, and 45 percent of those in the middle-income group).

FIGURE E. Digital Divide and App Gap, by Income, 2011-2017

Among families of 0- to 8-year-olds, those who:



Note: Lower income is less than \$30,000 a year and higher income is more than \$75,000 a year. Middle income group is left off for clarity.

7

The amount of time children spend reading each day has held steady since 2011, but many children under 2 are not read to regularly.

On average, 0- to 8-year-olds spend about a half-hour a day reading or being read to, an amount that has remained remarkably steady over the past six years (:29 in 2011, :28 in 2013, and :29 in 2017). Forty percent of low-income children read or are read to every day, compared to 65 percent of children from high-income families (57 percent among all). Although the AAP recommends reading to children “beginning in infancy” because of its importance to children’s language skills and literacy acquisition, fewer than half (43 percent) of children under 2 are read to on a daily basis.³ Despite the advent of e-readers and the spread of tablets, electronic reading has not become popular among children. Of the 29 minutes a day of reading children do, 26 are in print and only three are electronic.

8

Parents are concerned about the amount of violence, sexual content, and advertising in media, but they are optimistic about the use of media for learning and supporting creativity.

Top concerns are violent content (78 percent are very or somewhat concerned), sexual content (77 percent), spending too much time with media (70 percent), and exposure to materialism and advertising in media (69 percent). On the other hand, 67 percent of parents whose children use screen media say it helps their learning (a lot or a little), and 57 percent say it helps their creativity.

9

Pediatricians have reached only one in five parents with their recommendations about children’s media use and have been more successful in reaching white, higher-income, and higher-educated parents.

One in five (20 percent) parents say they know the AAP recommendations for their child’s media use, half (51 percent) don’t know but say they are interested in learning about them, and 29 percent aren’t interested. The AAP has been more successful in reaching white, higher-income, and higher-educated parents: 24 percent of higher-income and college-educated parents know the AAP recommendations for their child, compared to 16 percent of low-income or high school-educated parents. Hispanic/Latino parents are the least aware of the AAP recommendations (13 percent say they know what they are, compared to 21 percent of African-American parents and 23 percent of white parents) and are most interested in learning more about them (69 percent, compared to 49 percent of African-American parents and 42 percent of white parents).

FIGURE F. Parental Concerns About Media Content, 2017

Among parents of 0- to 8-year-olds, those who are very or somewhat concerned as it relates to their child’s use of screen media, today and in the future

Violent content

78%

Sexual content

77%

Time spent with media

70%

Advertising and materialism in media

69%

3. AAP Council on Early Childhood (2014). Literacy promotion: An essential component of primary care pediatric practice. *Pediatrics*, 134(2). <http://dx.doi.org/10.1542/peds.2014-1384>

10

Several cutting-edge technologies, including virtual reality, voice-activated assistants, and internet-connected toys, are making their first appearances in children's homes.

The survey offers a first look at the early penetration of these new technologies, any one of which could ultimately have profound implications for children's development. Today, about one in 10 kids age 8 or under live in a home with a virtual reality headset (11 percent), have "smart" toys that connect to the internet (10 percent), or have a voice-activated virtual assistant device available to them in the home, such as an Amazon Echo or Google Home (9 percent).

METHODOLOGY

THIS REPORT PRESENTS the results of a nationally representative, probability-based online survey of 1,454 parents of children age 8 or under, conducted from January 20, 2017, to February 10, 2017. The survey was designed by Common Sense and VJR Consulting and fielded by the research firm GfK, using its KnowledgePanel®, a probability-based web panel designed to be representative of the U.S. population. The project was directed by Michael Robb, director of research at Common Sense, and Victoria Rideout of VJR Consulting. Data analyses were conducted by Melissa Saphir of Saphir Research Services. The report was written by Ms. Rideout.

The survey is the third in a series of cross-sectional tracking surveys conducted by Common Sense. Previous surveys were conducted in 2011 and 2013. To the extent possible, the survey conducted in 2017 duplicates the questions asked in previous years. The full text of the questionnaire and all topline results can be found at the end of this report. In cases where the question wording or structure has changed, those changes are noted in the relevant tables.

Measuring children's media use. It should be noted that all findings in this report are based on parents' responses to questions about their child's use of media. Parents were asked about a specific, randomly selected focal child in their household. No parent's estimate of their child's media use is likely to be exact. However, when dealing with children age 8 and under, time and frequency estimates from parents are more likely to be reliable than those obtained from the child. By asking parents to focus on a specific day in their child's life (the day prior to taking the survey), we hope to elicit more precise estimates of children's media use than by asking about a "typical day." Surveying was spread out over the seven days of the week in order to avoid any bias toward either weekdays or weekend days.

Survey Sample

The use of a probability sample. GfK's KnowledgePanel members were recruited using probability-based methods such as address-based sampling and random-digit-dial telephone calls. Households that were not already online were provided with a notebook computer and internet access for the purpose of participating in surveys. The use of a probability sample means the results are substantially more generalizable to the U.S. population than are results based on "convenience" samples. Convenience samples include only respondents who are already online and/or who volunteer through word of mouth or advertising to participate in surveys.

Participant consent and respondent compensation. Consent was obtained for all respondents. Respondents received a cash equivalent of \$5 for their participation; some African-American respondents received an additional \$5 or \$10 equivalent to improve response rates among this lower-incidence demographic group.

Treatment of outliers. Of the 1,476 cases completing the main survey, 1,454 cases were determined to be valid cases to be included in the final analyses. Fourteen cases were excluded due to speeding through the survey (completing in less than a third of the median time), and eight were excluded due to reporting media use times of greater than 24 hours for their child.

Weighting. The use of probability-based recruitment methods for the KnowledgePanel is designed to ensure that the resulting sample properly represents the U.S. population geographically, demographically (e.g., age, gender, race/ethnicity, income), and in terms of home internet access. Study-specific post-stratification weights were applied once the data were finalized, to adjust for any survey nonresponse and to ensure the proper distributions for the specific target population (in this case, parents of 0- to 8-year-olds). Geo-demographic distributions for this population were obtained from the March 2016 supplemental data from the U.S. Census Bureau's Current Population Survey.

Over-samples. Over-samples of African-American ($n = 250$) and Hispanic/Latino ($n = 352$) respondents were included in the survey, enabling us to analyze results by various demographic factors within each racial/ethnic group (for example, by age or gender). Those samples were then weighted back down to their representative level for analyzing the survey results as a whole. Separate weights were used when analyzing results among African-American or Hispanic/Latino respondents alone. The survey was offered in English and Spanish.

Margin of error. The margin of error for the full sample at a 95 percent confidence level is ± 3 percent. The margin of error among white respondents is ± 3.7 percent, for Hispanic/Latino respondents ± 6.8 percent, and for African-American respondents ± 8.5 percent.

Media Definitions

This report looks at children's media use two ways: by *activities* and by *devices*.

Activities. In recent years, "screen time" has come to encompass behaviors as diverse as watching (i.e., video content), reading, interactive play (i.e., gaming), video-chatting, and immersion in virtual worlds. Accordingly, this report quantifies the portion of young people's screen media time that is devoted to the following broad categories of media activities: watching TV, DVDs, or videos; playing media games (including video, computer, and mobile gaming); electronic reading; homework; video-chatting; using virtual reality; and using digital devices for other purposes, such as browsing websites. In addition to screen media, the study also measures time spent reading print and listening to music.

Devices. This report covers many media technologies, including television sets, digital video recorders (DVRs), DVD players, videotapes, video game consoles, handheld video game players, desktop and laptop computers, tablets, smartphones, iPod Touches or similar devices, e-readers, virtual reality headsets, toys that connect to the internet, and voice-activated virtual assistant devices such as the Amazon Echo or Google Home. The survey also asked about print reading materials, such as books, and about listening to music, without specifying which devices were used for listening. This report often groups media devices into five major *platforms*: television set; DVD/videotapes; mobile device (i.e., smartphones, tablets, and e-readers); computer (i.e., laptop and desktop); video game device (i.e., console and handheld players).

Other subcategories of activities or devices referenced in the report (in alphabetical order):

Handheld video game players include devices specifically designed for playing video games, such as a Game Boy, PSP, or DS.

Live TV means content watched on a TV set as it was broadcast (i.e., not time-shifted).

Mobile media/devices refers to smartphones, tablet devices such as iPads or similar products, and other devices such as the iPod Touch that can connect to the internet, display videos, and download "apps" (mobile applications).

Screen media includes television, DVDs/videotapes, video game players, computers, tablets, smartphones, other small digital devices such as an iPod Touch or similar, and virtual reality headsets.

Smart TV or internet-connected TV includes television sets that are connected to the internet, whether directly or through an add-on device such as Apple TV or Roku.

Streaming video includes time spent watching TV shows or movies through subscription services.

Subscription services are companies such as Netflix, Hulu, or Amazon Prime Video that charge membership fees to enable users to stream or download TV shows or movies.

Total TV/video time includes time spent watching TV or movies on a television set, watching DVDs or videotapes, or watching any type of online or streaming video, such as YouTube-type videos or TV shows or movies watched through a website or internet-based subscription service, whether on a computer or mobile device.

Demographic Definitions

Families. This survey concerns media use among children age 8 or under and the views of parents of children in that age range. In the report, we occasionally use the term "families" as shorthand to refer to families with children in this age group or the term "children" to refer to children age 8 or under.

Income categories. For the purposes of this report, "lower income" is defined as families earning less than \$30,000 a year; "middle income" includes those earning from \$30,000 to \$75,000 a year; and "higher income" is families earning over \$75,000 a year.

Education categories. For the purposes of this report, parents who have a high school degree or less are referred to as “less educated,” parents with some college experience are referred to as “middle educated,” and parents with a college degree or higher are referred to as “highly educated.”

Race/ethnicity. The term “African-American” refers to any respondents who self-identify as “black, non-Hispanic.” The term “white” refers to any respondents who self-identify as “white, non-Hispanic.” The term “Hispanic/Latino” refers to any respondents who self-identify as Hispanic. The term “other” is a collapsed category that includes individuals who self-identify as another racial group or as two or more races, none of which is Hispanic. Where findings are broken out by race/ethnicity, results are presented for only white, African-American, and Hispanic/Latino children. Respondents in the “other” category are included in results based on the total sample but not in results that are broken out by race, because the cell sizes of each individual group in the “other” category are not large enough to examine differences among them.

Presentation of Data in the Text

Statistical significance. Where relevant, differences over time or among demographic groups have been tested for statistical significance. Unless otherwise noted, findings are described in the text in a comparative manner (e.g., “more than,” “less than”) only if the differences are statistically significant at the level of $p < .05$. In tables where statistical significance has been tested, superscripts (using letters such as *a*, *b*, or *c*) are used to indicate whether results differ at a statistically significant level ($p < .05$) within a set of columns or rows (e.g., parent race/ethnicity, or 2011 vs. 2017). Means that share a common superscript — and means that have no superscript at all — are not significantly different from each other.

Notation of hours and minutes. Throughout the report, times spent with media are presented in hours:minutes. For example, two hours and 10 minutes is presented as 2:10, and 10 minutes is presented as :10.

Percentages. Percentages will not always add up to 100 due to rounding or multiple response options, or because those who marked “don’t know” or did not respond are not included.

TABLE B. Demographics of Survey Sample

Among U.S. parents of children age 0 to 8	Unweighted <i>n</i>	Unweighted percentage	Benchmark percentage*	Weighted percentage
Race/ethnicity				
• White, non-Hispanic	750	51.58%	55.83%	56.15%
• Hispanic/Latino	352	24.21%	23.22%	22.88%
• African-American, non-Hispanic	250	17.19%	10.95%	10.91%
• Other, non-Hispanic	56	3.85%	8.67%	8.72%
• 2+ race, non-Hispanic	46	3.16%	1.33%	1.34%
Language				
• Hispanic, bilingual	156	10.73%	12.93%	12.54%
• Hispanic, Spanish dominant	86	5.91%	5.72%	5.75%
Parent gender				
• Female	870	59.83%	56.36%	56.46%
• Male	584	40.17%	43.64%	43.54%
Region				
• Northeast	220	15.13%	16.11%	16.21%
• Midwest	321	22.08%	21.00%	20.92%
• South	530	36.45%	37.78%	37.77%
• West	383	26.34%	25.11%	25.09%
Parent education				
• Less than high school	148	10.18%	11.35%	11.05%
• High school diploma	311	21.39%	24.86%	24.94%
• Some college	409	28.13%	26.98%	26.94%
• College degree or higher	586	40.30%	36.81%	37.06%
Household income				
• <\$25,000	284	19.53%	13.59%	13.73%
• \$25,000 to \$49,999	313	21.53%	20.16%	20.27%
• \$50,000 to \$74,999	257	17.68%	18.02%	17.71%
• \$75,000 to \$99,999	193	13.27%	13.79%	13.87%
• \$100,000 to \$149,999	217	14.92%	17.93%	18.04%
• \$150,000+	190	13.07%	16.50%	16.38%

*March 2016 CPS Supplement.

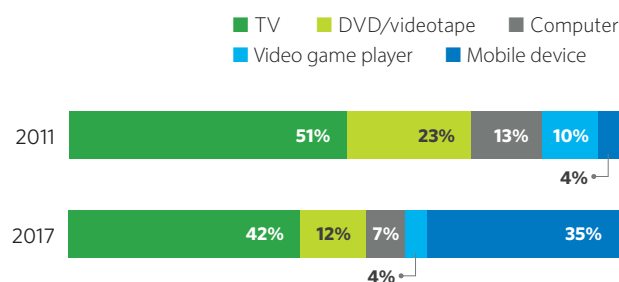
OVERALL SCREEN TIME

ON AVERAGE, CHILDREN 8 and under spend a little more than two-and-a-quarter hours a day (2:19) with screen media, almost exactly the same amount of time they devoted to screen media six years ago, in 2011 (2:16; see Table 1). In 2013, time spent with screen media had dropped by about 20 minutes (to 1:55), as TV time had gone down but mobile time had not yet replaced it. As of 2017, screen time is back up, although there has been a significant shift in *which* screens kids are using.

For example, since 2011 time spent watching DVDs is down by 14 minutes a day, time spent watching a television set is down by 11 minutes a day, time spent playing video games on a console or handheld game player is down eight minutes, and time spent using a computer is down by seven minutes — a total drop of 40 minutes a day in use of those screen devices (Table 2, page 14). But the amount of time spent using mobile devices is up almost exactly that amount: 43 minutes a day. The proportion of screen time that is spent on smartphones and tablets has gone from 4 percent of total screen time in 2011 to 35 percent in 2017, a remarkable shift over a short period of time, as illustrated in Figure 1.

FIGURE 1. Screen Media Use, by Platform, 2011 vs. 2017

Among 0- to 8-year-olds, share of time spent with:



Note: *Video game player* includes console and handheld players. *Mobile device* includes smartphone, tablet, iPod Touch, or similar device. Totals may not add to 100% due to rounding.

TABLE 1. Time Spent with Media, by Activity, 2011-2017

Among 0- to 8-year-olds, average amount of time spent in a typical day:	2011	2013	2017
Watching TV, DVDs, or videos	1:44^a	1:27^b	1:40^a
• TV on TV set	1:09 ^a	:57 ^b	:58 ^b
• DVDs/videotapes	:31 ^a	:22 ^b	:17 ^c
• TV/videos on computer	:03 ^{ab}	:03 ^a	:04 ^b
• TV/videos on mobile device	:01 ^a	:05 ^b	:21 ^c
Listening to music[§]	:29^a	:20^b	:18^b
Reading/being read to	:29	:28	:29
• Print [§]	:29	:28	:26
• Electronic	NA	NA	:03
Playing media games	:25	:23	:25
• Video games (console)	:10 ^a	:06 ^b	:05 ^b
• Video games (handheld) [†]	:04 ^a	:04 ^a	:01 ^b
• Computer games	:08 ^a	:05 ^b	:03 ^c
• Mobile games [‡]	:03 ^a	:08 ^b	:16 ^c
Video-chatting	NA	NA	:01
• On a computer	NA	NA	*
• On a mobile device	NA	NA	:01
Other digital activities	:07	:05	:10
• Educational software (computer)	:03	:02	NA
• Homework (computer)	:02 ^{ab}	:01 ^a	:02 ^b
• Anything else on computer	:01 ^{ab}	* ^a	:01 ^b
• Anything else on a mobile device	:01 ^a	:02 ^b	:07 ^c
Total screen media time	2:16^a	1:55^b	2:19^a
Total media time	3:14^a	2:43^b	3:06^a

* Less than one minute but greater than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Statistical significance should be read across rows.

Given the many affordances of new screen technologies, it is important to understand that “screen time” today can mean many different things beyond watching TV — from visiting with Grandma via Skype to reading a bedtime story on an ebook. The study indicates that at this point, video-viewing is still the dominant screen activity among children age 8 or under, taking up nearly three-quarters (72 percent) of all screen time (Figure 2). Gaming is next, at 18 percent, but thus far other activities are still limited; electronic reading constitutes 2 percent of screen time, while video-chatting and doing homework on a computer or mobile device accounts for only 1 percent of screen use.

In fact, the types of media activities children engage in and the time they devote to these media activities hasn't changed much — only the devices or platforms on which they do them. For example, children spend almost the same amount of time watching TV or videos in 2017 as they did in 2011 (1:40 today, 1:44 in 2011; see Table 1). Likewise, the amount of time children devote to gaming has been remarkably steady (an average of 25 minutes a day in 2011 and in 2017). While there has been a drop in computer gaming and in the use of console and handheld video game players, the increased use of smartphones and tablets for gaming has made up for those declines.

Video viewing is still the dominant screen activity among children age 8 or under, taking up nearly three-quarters (72 percent) of all screen time.

TABLE 2. Time Spent with Screen Media, by Device, 2011-2017

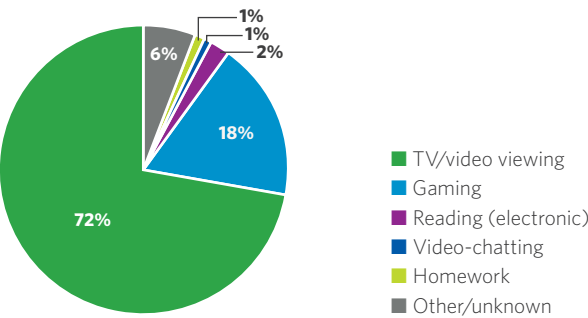
Among 0- to 8-year-olds, average amount of time spent in a typical day using:	2011	2013	2017
Television set	1:09^a	:57^b	:58^b
Mobile devices	:05^a	:15^b	:48^c
• Mobile games	:03 ^a	:08 ^b	:16 ^c
• TV/videos on mobile device	:01 ^a	:05 ^b	:21 ^c
• Skype/video chat	NA	NA	:01
• Reading/being read to	NA	NA	:03
• Anything else	:01 ^a	:02 ^b	:07 ^c
DVDs	:31^a	:22^b	:17^c
Computer	:17	:11	:10
• Computer games	:08 ^a	:05 ^b	:03 ^c
• Educational software	:03	:02	NA
• Homework	:02 ^{ab}	:01 ^a	:02 ^b
• TV/videos on computer	:03 ^{ab}	:03 ^a	:04 ^b
• Skype/video chat	NA	NA	*
• Anything else	:01 ^{ab}	* ^a	:01 ^b
Video game players	:14^a	:10^a	:06^b
• Console video game player	:10 ^a	:06 ^b	:05 ^b
• Handheld video game player	:04 ^a	:04 ^a	:01 ^b
Total screen media time	2:16^a	1:55^b	2:19^a

* Less than one minute but more than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

FIGURE 2. Screen Media Time, by Activity, 2017

Among 0- to 8-year-olds, proportion of average daily screen time devoted to:



Demographic differences. Screen time varies substantially by age (see Table 3). Although children under 2 are using screens, they do so much less than older children: an average of about three-quarters of an hour (:42) a day, compared to 2:39 a day among 2- to 4-year-olds and about three hours a day (2:56) among 5- to 8-year-olds. The types of devices children use vary substantially by age as well (Table 4). Babies and toddlers under 2 still spend relatively little time with mobile devices (an average of :07 a day), but 5- to 8-year-olds spend almost the same amount of time using mobile devices (1:02) as watching TV (1:04).

There are no statistically significant differences in the average amount of screen time per day between boys versus girls or by race and ethnicity, but there are large differences by income and parent education, as illustrated in Figure 3 (see page 16). Children from higher-income homes and those with more highly educated parents spend substantially less time with screen media per day than other children do. For example, lower-income children spend an average of in excess of an hour and a half *more* with screen media than higher-income children do (3:29 vs. 1:50). The difference in screen media use between lower- and higher-income children and between those with lower- vs. higher-educated parents has been apparent across all three waves of the survey (2011, 2013, and 2017), but the gap is even larger in 2017 than it was in prior years (see Table 5, page 16). In 2017, higher-income children's TV/video use has gone down, and lower-income children's use has gone up, along with their use of mobile media, widening the gap between the two groups. In any given day, more lower-income kids watch TV today than did four years ago (58 percent vs. 42 percent), and those who watch TV spend more time doing so (2:23 vs. 2:02).

Media multitasking. Previous research has indicated that many teens engage in media multitasking, using more than one medium at a time (for example, playing a game on a smartphone while watching shows on a TV set). One issue of interest to researchers is at what age media multitasking begins. Accordingly, the survey asked parents how often their child uses more than one type of media at a time. More than half (56 percent) say their child has never done this. Eighteen percent say their child uses multiple media at once "most of the time" (3 percent) or "some of the time" (15 percent), and 26 percent say their child does so "only once in a while." However, by the time they are in the 5- to 8-year-old age range, 26 percent of children multitask "most of the time" or "some of the time."

TABLE 3. Time Spent with Media, by Activity and Age, 2017

Average time spent per day:	Child's age		
	< 2	2 to 4	5 to 8
Watching TV, DVDs, or videos	:40^a	2:03^b	1:55^b
• TV on TV set	:29 ^a	1:09 ^b	1:04 ^b
• DVDs/videotapes	:06 ^a	:23 ^b	:18 ^b
• TV/videos on computer	* ^a	:03 ^b	:08 ^c
• TV/videos on mobile device	:05 ^a	:28 ^b	:25 ^b
Listening to music[†]	:23^a	:21^a	:14^b
Reading/being read to	:21^a	:34^b	:30^b
• Print [†]	:20 ^a	:30 ^b	:26 ^{ab}
• Electronic (mobile device)	:01 ^a	:04 ^{ab}	:04 ^b
Playing media games	*^a	:21^b	:42^c
• Video games (console)	:00 ^a	:03 ^b	:09 ^c
• Video games (handheld)	* ^a	:01 ^{ab}	:03 ^b
• Computer games	* ^a	:01 ^b	:06 ^c
• Mobile games	* ^a	:16 ^b	:24 ^c
Video chatting	*^a	:01	:01
• On a computer	* ^a	*	*
• On a mobile device	* ^a	:01 ^b	:01 ^{ab}
Other digital activities	:01^a	:10^b	:14^b
• Homework (computer)	:00 ^a	* ^a	:04 ^b
• Anything else on a computer	* ^a	:01 ^b	:02 ^b
• Anything else on a mobile device	:01 ^a	:09 ^b	:08 ^b
Total screen media time	:42^a	2:39^b	2:56^b
Total media time	1:25^a	3:30^b	3:36^b

TABLE 4. Time Spent with Screen Media, by Device and Age, 2017

Average time spent per day using:	Child's age		
	< 2	2 to 4	5 to 8
Television set	:29 ^a	1:09 ^b	1:04 ^b
DVD/videotape player	:06 ^a	:23 ^b	:18 ^b
Mobile device	:07 ^a	:58 ^b	1:02 ^b
Computer	* ^a	:05 ^b	:20 ^c
Video game device	* ^a	:04 ^b	:12 ^c
Total screen media time	:42^a	2:39^b	2:56^b

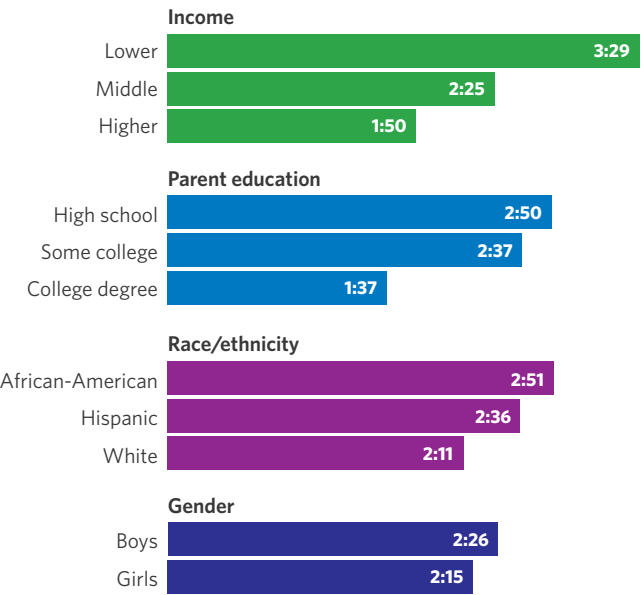
* Less than one minute but more than zero.

† Not included in screen media.

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

FIGURE 3. Screen Media Time, by Demographics, 2017

Among 0- to 8-year-olds, average time spent with screen media per day (hours:minutes)



Note: *Lower income* is less than \$30,000 a year; *middle income* is \$30,000 to \$75,000 a year; and *higher income* is more than \$75,000 a year.

TABLE 5. Time Spent with Screen Media, by Demographic, 2011-17

Among 0- to 8-year-olds, average time spent with screen media per day (hours:minutes)

	2011	2013	2017
Gender			
Boys	2:25 ^x	1:54 ^y	2:26 ^x
Girls	2:04	2:05	2:15
Race/ethnicity			
African-American	3:07 ^a	2:26	2:51
Hispanic/Latino	2:35 ^{a/x}	1:51 ^y	2:36 ^x
White	1:55 ^{b/x}	1:58 ^x	2:11 ^y
Income			
Lower	2:32 ^{a/x}	2:17 ^{a/x}	3:29 ^{a/y}
Middle	2:18 ^{a/xy}	2:01 ^{a/x}	2:25 ^{b/y}
Higher	1:52 ^b	1:48 ^b	1:50 ^c
Parent education			
High school or less	2:39 ^{a/xy}	2:14 ^{a/x}	2:50 ^{a/y}
Some college	2:18 ^{a/xy}	2:11 ^{a/x}	2:37 ^{a/y}
College degree	1:33 ^b	1:31 ^b	1:37 ^b

Note: *Lower income* is less than \$30,000 a year; *middle income* is \$30,000 to \$75,000 a year; and *higher income* is more than \$75,000 a year. Statistical significance between groups in each year can be read through the a, b, and c superscripts in each column. Differences within one demographic group over time can be read through the x and y superscripts across rows. Only items with different superscripts differ significantly ($p < .05$).

PATTERNS OF TV AND VIDEO VIEWING

NOT THAT LONG AGO, there weren't many variations in how a child watched TV or video content: She sat down in front of a television set and either popped in a DVD or videotape, or chose from the shows that were on at that time. Today, she could also decide to choose a show from the On Demand selection offered by her cable company, watch something her dad had recorded for her earlier on their DVR, stream a show through Netflix or Hulu onto a TV or a laptop, or watch YouTube videos on a phone or tablet — to name a few of her many options.

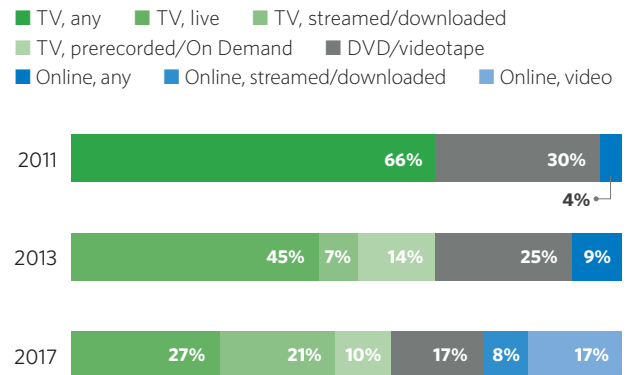
As with screen media overall, the total amount of time children devote to watching TV and video content in 2017 is almost the same as it was in 2011 (see Table 1). But what and how they watch has changed, with TV shows being time-shifted and streamed, and shorter content from sites like YouTube added to the mix. In 2011, online viewing accounted for just 4 percent of children's total TV/video time; today it makes up 25 percent of the total, as illustrated in Figure 4. Four years ago, in 2013, "live" TV (shows viewed at the time they were originally broadcast) accounted for 45 percent of children's total TV/video viewing; today it is 27 percent. The biggest changes are that children are increasingly streaming shows onto their television sets through a subscription service (21 percent of all viewing), and watching videos from sites like YouTube on a mobile device (about 17 percent of all viewing).

Demographic differences. How much TV and video content children watch in 2017 — and *how* they watch it — varies substantially by age (see Table 3). Total TV/video viewing ranges from 40 minutes a day among children under 2 to about two hours a day among older children (2:03 among 2- to 4-year-olds and 1:55 among 5- to 8-year-olds). Children younger than 2 watch almost exclusively on a TV set (an average of only five minutes a day on mobile devices), while 5- to 8-year-olds spend more than half an hour a day watching online videos (25 minutes on mobile devices and 8 minutes on a computer).

Streaming. The increase in time spent watching streamed programming on a TV (from six minutes a day in 2013 to 21 minutes a day in 2017) is made possible by a tremendous increase over the past four years in families with "smart" TVs, capable of connecting to the internet and streaming or downloading content (whether directly or through a plug-in device such as Roku or

FIGURE 4. TV and Video Viewing, by Delivery, 2011-2017

Among 0- to 8-year-olds, proportion of all TV/video watching that was viewed through:



Note: Differences between live, streamed/downloaded and prerecorded/On Demand television viewing were not measured until 2013; and differences between online viewing of streamed/downloaded content vs. short videos were not measured until 2017.

In 2011, online viewing accounted for just 4 percent of children's total TV/video time; today it makes up 25 percent of the total.

TABLE 6. Media in the Home, by Device, 2011-2017

Among 0- to 8-year-olds, percent who live in homes with:	2011	2013	2017
Television			
• Television set	98% ^a	96% ^b	98% ^a
• DVD player	80% ^a	78% ^b	86% ^a
• Internet-connected TV	NA	30% ^a	75% ^b
• Subscription video service (e.g., Netflix, Hulu, or Amazon Prime Video)	NA	NA	72%
• Cable TV	68% ^{ab}	70% ^a	65% ^b
• DVR	35% ^a	28% ^b	44% ^c
• HD antenna	NA	NA	29%
• TV in child's bedroom	42% ^a	36% ^b	29% ^c
• TV on all/most of the time in home	39% ^a	36% ^a	42% ^b
Computer			
• Computer (laptop or desktop)	72% ^a	76% ^a	91% ^b
• High-speed internet access	68% ^a	69% ^a	90% ^b
Mobile			
<i>Any mobile device</i>	52% ^a	75% ^b	98% ^c
• Smartphone	41% ^a	63% ^b	95% ^c
• Tablet	8% ^a	40% ^b	78% ^c
• iPod Touch	21% ^a	27% ^b	21% ^a
Video game player			
• Console video game player	67% ^{ab}	64% ^a	69% ^b
• Handheld video game player	44% ^a	35% ^b	31% ^c
Other			
• E-reader (e.g., Kindle, Nook)	9% ^a	21% ^b	29% ^c
• Virtual assistant device (e.g., Amazon Echo, Google Home)	NA	NA	9%
• Virtual reality headset	NA	NA	11%
Child's own device			
<i>Any mobile device</i>	3% ^a	12% ^b	45% ^c
• Tablet	* ^a	7% ^b	42% ^c
• Smartphone	* ^a	* ^a	4% ^b
• iPod Touch or similar	3% ^a	5% ^b	5% ^b
<i>Educational game player</i>	29% ^{ab}	26% ^a	33% ^b
<i>Handheld game player</i>	24% ^a	21% ^a	14% ^b

* Less than 1 percent but more than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

Apple TV) — from 30 percent in 2013 up to 75 percent in 2017 as shown in Table 6. Nearly three-quarters (72 percent) of families with children 8 or under subscribe to a streaming service.

Online videos/YouTube. As mentioned above, 17 percent of children's total TV/video viewing today consists of watching videos online on a site such as YouTube, an average of 17 minutes a day. As indicated in Table 7, the most-watched online videos are intended to teach things like literacy, numeracy, or emotional development (64 percent of online video users often or sometimes watch these). The second most popular are animal videos (46 percent). Many also watch how-to videos (tutorials about everything from cooking to Legos to hairstyles, watched by 38 percent of children). "Unboxing" videos are also popular, watched by 34 percent of online video users; these are videos in which someone opens up and unpacks or assembles a new toy or other product. Very few children in this age group are watching celebrity-related videos (4 percent of online viewers).

TABLE 7. Online Videos Watched, by Type, 2017

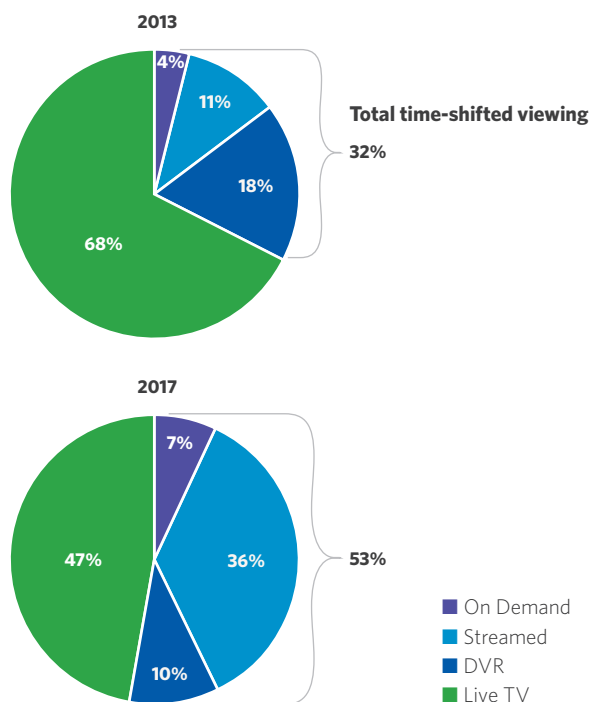
Among 0- to 8-year-olds who watch online videos, percent who often/sometimes watch:	
Learning videos	64%
Animal videos	46%
How-to videos	38%
Unboxing/product demonstration videos	34%
Music videos	33%
Video gaming/gameplay videos	27%
Challenge/stunt videos	20%
Celebrity videos	4%

ON AVERAGE, CHILDREN 8 and under spend slightly less than an hour a day watching TV shows on a TV set (:58), down from 1:09 in 2011, but holding steady from 2013 (:57) (Table 1). This is still more than twice the average amount of time spent watching TV or videos on a mobile device (:21). The proportion of children who watch TV on an everyday basis has dropped, from 65 percent in 2011 to 53 percent in 2017 (see Table 8). However, this is still more than twice the proportion that watch online videos every day (24 percent). Even among 5- to 8-year-olds, nearly twice as many watch TV every day (58 percent) as watch online videos that often (30 percent) (see Table 9).

Time-shifted vs. live TV. In 2017, of all the programming children watch on a TV set, less than half (47 percent) is content they watch live (down from more than two-thirds — 68 percent — of all TV time in 2013), and the majority (53 percent) is time-shifted (Figure 5). The big increase has been in streaming; over a third

FIGURE 5. Time-Shifted vs. Live TV Viewing, 2013 vs. 2017

Among 0- to 8-year-olds, percent of viewing on a TV set that is:



Note: Segments may not total exactly 100 percent due to rounding.

TABLE 8. Daily Media Use, by Activity, 2011-2017

Among 0- to 8-year-olds, percent who do the following at least once per day:	2011	2013	2017
Read/are read to	58%	60%	57%
Watch TV	65% ^a	58% ^b	53% ^c
Watch online videos	NA	NA	24%
Watch DVDs/videotapes	25% ^a	18% ^b	11% ^c
Use mobile device	8% ^{*a}	17% ^b	28% ^c
Use a computer	14% ^{ab}	14% ^a	11% ^b
Play handheld video games	NA [†]	7% ^a	4% ^b
Play console video games	9% ^a	6% ^b	6% ^b
Read an ebook	2% ^a	4% ^b	NA

* In 2011, question included handheld video game players.

† Handheld video game player was not asked as a separate item in 2011.

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

TABLE 9. Daily Media Use, by Age, 2017

Percent who do the following at least once per day:	Child's age		
	Under 2	2 to 4	5 to 8
Read/are read to	43% ^a	56% ^b	64% ^c
Watch any TV or video	35% ^a	67% ^b	67% ^b
• Watch TV	34% ^a	58% ^b	58% ^b
• Watch online videos	8% ^a	27% ^b	30% ^c
• Watch DVDs/videotapes	7%	12% ^{ab}	12% ^b
Use a mobile device	9% ^a	27% ^b	37% ^c
Use a computer	1% ^a	6% ^b	20% ^c
Play console video games	* ^a	3% ^b	10% ^c
Play handheld video games	1% ^a	3% ^a	7% ^b

* Less than 1 percent but more than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

(36 percent) of all content children watch on a television today is programming they stream through a subscription service such as Netflix or Hulu, up from 11 percent just four years ago, in 2013.

Demographic differences. The amount of time children spend watching TV in 2017 ranges from about a half-hour a day on average among those under 2 (:29) to a little over an hour a day for older children (1:09 among 2- to 4-year-olds and 1:04 among 5- to 8-year-olds) (see Table 10). There is no statistically significant difference in average time spent watching TV between boys and girls or between white, African-American, or Hispanic/Latino children. However, there are significant differences by income and parent education: Children whose parents have college degrees average 21 minutes a day less with TV than those whose parents have no more than a high school education, and those in the low-income group spend 34 minutes a day more watching TV than those in the high-income group.

TV in the home and bedroom. The percent of children with a TV set in their bedroom has continued to decline (Table 6). In 2011, 42 percent of kids 8 and under had a TV in their room; in 2013 that fell to 36 percent, and in 2017 it dropped further to 29 percent. On the other hand, a large number of children still live in homes where the TV is left on “always” or “most of the time,” whether anyone is watching or not (42 percent, up from 36 percent in 2013). The data indicate a relationship between how much time children spend watching TV and how often the TV is left on in the home (see Figure 6). Children who live in homes where the TV is left on all or most of the time, whether or not anyone is watching, spend far more time watching it (1:24) than do those who live in homes where the TV is hardly ever or never left on (:26); this does not appear to be an artifact of age, since the likelihood of having the TV on even when no one is watching does not vary by the age of the child.

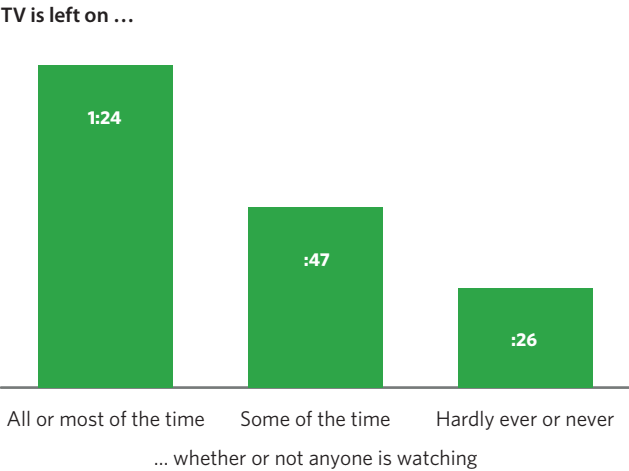
TABLE 10. Time Spent Watching TV on a TV Set, by Demographic, 2017

Among 0- to 8-year-olds, average time spent watching TV per day (hours:minutes)		
Age	• Under 2	:29 ^a
	• 2 to 4	1:09 ^b
	• 5 to 8	1:04 ^b
Gender	• Boys	:57
	• Girls	:59
Race/ethnicity	• African-American	1:12
	• Hispanic/Latino	1:05
	• White	:57
Income	• Lower (<\$30,000)	1:23 ^a
	• Middle (\$30,000 to \$75,000)	:58 ^b
	• Higher (>\$75,000)	:49 ^b
Parent education	• High school or less	1:07 ^a
	• Some college	1:03 ^a
	• College degree	:46 ^b

Note: Only those items with different superscripts differ significantly (*p* < .05). Items without a superscript do not differ significantly. Significance should be read vertically within each demographic group.

FIGURE 6. Relationship Between TV Viewing and TV in the Home, 2017

Average amount of time 0- to 8-year-olds spend watching TV on a TV set (not including DVDs/videotapes) in homes where:



Cable and subscription services. Today, more families have a subscription video service such as Netflix, Amazon Prime Video, or Hulu (72 percent) than have cable TV (65 percent) (see Table 6). The percent with cable is about the same as it was in 2011, however, and in fact the proportion that have DVR service has gone up (from 35 percent to 44 percent). At the same time, a substantial proportion (29 percent) of parents report that they have an HD antenna, enabling them to get TV reception without a cable subscription. Not surprising, there are substantial differences in TV equipment based on household income, as shown in Table 11. While 75 percent of families report having an internet-connected television set, that figure ranges from 58 percent among lower-income families up to 82 percent of higher-income ones. Lower-income families are less likely to have cable subscriptions as well (61 percent compared to 70 percent among higher-income families), and they are especially less likely to have DVR service (32 percent, compared to 52 percent among high-income homes). In general, this means that lower-income children are more likely to rely on broadcast television and on watching TV shows as they are aired rather than through time-shifting.

TABLE 11. TV/Video Equipment in the Home, by Income, 2017

Percent of 0- to 8-year-olds who live in homes with:	Lower (<\$30K)	Middle (\$30K-\$75K)	Higher (>\$75K)
TV set	98%	97%	99%
Internet-connected TV	58% ^a	75% ^b	82% ^c
Subscription service	60% ^a	73% ^b	77% ^b
Cable or satellite TV	61% ^a	61% ^a	70% ^b
DVR	32% ^a	40% ^b	52% ^c
HD antenna	32%	30%	27%

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

THE CURRENT WAVE OF this study offers clear evidence that the mobile media revolution has fully taken hold in the lives of young children across this country. As of 2017, virtually all (98 percent) homes with children age 8 or under now have a mobile device such as a smartphone or a tablet, up from three-quarters (75 percent) just four years ago in 2013, and half (52 percent) in 2011 (see Figure 7). The proportion of homes with a tablet has nearly doubled over the past four years (from 40 percent to 78 percent), a remarkable rate of adoption from 8 percent six years ago in 2011. And there has been a huge increase in smartphone ownership over the past four years as well, up from 63 percent of homes in 2013 to 95 percent today.

In fact, today nearly half (45 percent) of all children have their *own* mobile device, up from 3 percent in 2011 and 12 percent in 2013. Very few (4 percent) have smartphones, but many have tablets: 42 percent among all those 8 and under, up from 7 percent four years ago (see Table 6). Of course, these overall estimates include even very young children, which lowers the percentage. As seen in Table 12, among 5- to 8-year-olds, 59 percent have their own tablet, 9 percent have their own iPod Touch or similar device, and 7 percent have their own smartphone.

The proportion of homes with a tablet has nearly doubled over the past four years (from 40 percent to 78 percent).

FIGURE 7. Mobile Devices in the Home, 2011-2017

Percent of 0- to 8-year-olds with:

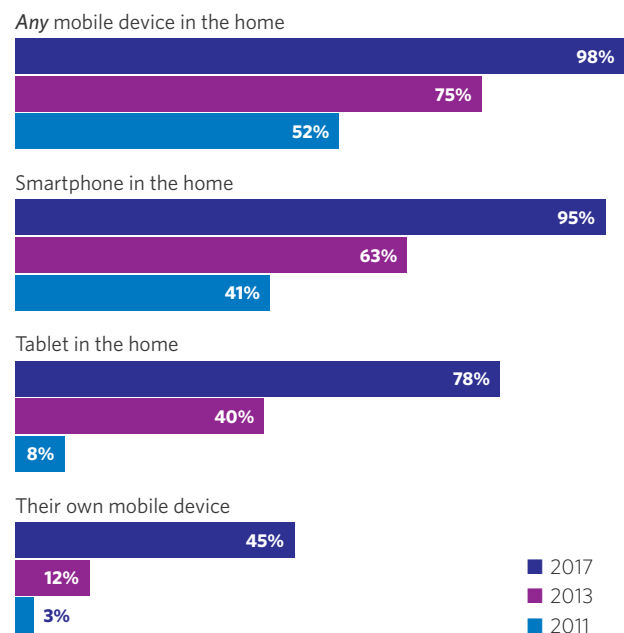


TABLE 12. Child's Own Media Devices, by Age, 2017

Percent with their own:	Child's age		
	Under 2	2 to 4	5 to 8
Tablet	5% ^a	43% ^b	59% ^c
Educational game player	13% ^a	39% ^b	39% ^b
Handheld video game player	1% ^a	6% ^b	26% ^c
Smartphone	1% ^a	3% ^a	7% ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

About eight in 10 (84 percent) children age 8 or under have ever used a mobile device; just six years ago, only 38 percent had, as illustrated in Figure 8. Today more than one in four (28 percent) children use a mobile device *every day* (Figure 8), ranging from 9 percent of those under 2, to 37 percent of 5- to 8-year-olds who are daily mobile users (Figure 9). In 2011, 8 percent of all children were daily users of mobile media.

On average, 0- to 8-year-olds spend 48 minutes a day using mobile devices, as indicated in Table 13. This is more than three times the amount of time they spent four years ago (:15 a day in 2013) and almost 10 times higher than it was in 2011 (:05). Time spent with mobile media varies substantially by age (Table 14). Children under 2 are still light users, averaging :07 a day of mobile use, but 2- to 8-year-olds spend about an hour a day with mobile devices on average (:58 a day among 2- to 4-year-olds and 1:02 among 5- to 8-year-olds).

Demographic differences. There are no differences between boys and girls in this age group in the time spent using mobile media, although there are differences by race, income, and parent education (see Table 15). White children, those from higher-income

FIGURE 8. Mobile Device Use, 2011-2017

Percent of 0- to 8-year-olds who:

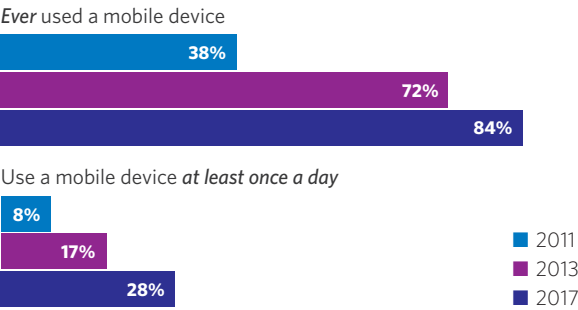


FIGURE 9. Daily Mobile Device Use, by Age, 2017

Percent who use a mobile device at least once a day



TABLE 13. Time Spent with Mobile Media, 2011-2017

Among 0- to 8-year-olds, average time spent daily on each activity	2011	2013	2017
TV/videos on mobile device	:01 ^a	:05 ^b	:21 ^c
Mobile games	:03 ^a	:08 ^b	:16 ^c
Skype/video chat on mobile device	NA	NA	:01
Read on mobile device	NA	NA	:03
Anything else on mobile device	:01 ^a	:02 ^b	:07 ^c
Total mobile media	:05^a	:15^b	:48^c

TABLE 14. Time Spent with Mobile Media, by Age, 2017

Average time spent daily on each activity	Child's age		
	< 2	2 to 4	5 to 8
TV/videos on mobile device	:05 ^a	:28 ^b	:25 ^b
Mobile games	* ^a	:16 ^b	:24 ^c
Skype/video chat on mobile device	* ^a	:01 ^b	:01 ^{ab}
Read on mobile device	:01 ^a	:04 ^{ab}	:04 ^b
Anything else on mobile device	:01 ^a	:09 ^b	:08 ^b
Total mobile media	:07^a	:58^b	1:02^c

* Less than one minute but more than zero.
Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

TABLE 15. Time Spent Using Mobile Media, by Demographic, 2017

Among 0- to 8-year-olds, average time spent using mobile media per day (hours:minutes)		
Gender	Boys	:51
	Girls	:46
Race/ethnicity	African-American	1:06 ^a
	Hispanic/Latino	:56 ^a
	White	:42 ^b
Income	Lower (<\$30,000)	1:13 ^a
	Middle (\$30,000 to \$75,000)	:50 ^b
	Higher (>\$75,000)	:37 ^c
Parent education	High school or less	1:01 ^a
	Some college	:52 ^a
	College degree	:32 ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read vertically within each demographic group.

households, and those whose parents have received a higher level of education spend less time with mobile media than other children. The difference is most pronounced by income (a 36-minute difference). There are also some differences in mobile device ownership by race/ethnicity, family income, and parent education, which are discussed in the Digital Divide section of this report.

Mobile media activities. The most popular activity on mobile devices is watching TV or videos followed by playing games, as indicated in Table 16. About seven in 10 young people have ever watched YouTube-type videos on a mobile device (73 percent) or played games on one (70 percent), and a majority (59 percent) has watched TV shows or movies on a mobile device. But only 28 percent have ever read a book on a smartphone or tablet. Since 2011, there has been a continual increase in children’s use of phones and tablets for watching TV or video or playing games — for example, the proportion that has ever watched TV on a mobile device has gone from 11 percent in 2011 to 38 percent in 2013 and 59 percent today. But the share that has used mobile devices for reading appears to have stalled, increasing from 4 percent in 2011 to 30 percent in 2013, but holding fairly steady at 28 percent today.

Watching TV or videos on a mobile device occupies an average of 21 minutes a day among 0- to 8-year-olds, followed by 16 minutes a day for gaming. Among 5- to 8-year-olds, mobile time is evenly split between TV/videos and gaming, at 25 minutes each. Reading is far behind, at four minutes a day. Although children do use these devices to Skype or video chat with relatives, that is a much less frequent activity, accounting for no more than a minute a day on average (the 6 percent of children in our survey who Skyped on a mobile device the previous day did so for an average of 23 minutes).

Mobile media use during meals and transportation. Most parents say their child hardly ever or never uses a mobile device during meals (either at home or in a restaurant) or while riding in a car or on public transportation (see Table 17). Only 14 percent of children “often” or “sometimes” use a mobile device while eating at home, and 19 percent “often” or “sometimes” use one while eating out with their family at a restaurant. Less than half (38 percent) “often” or “sometimes” use mobile media during car rides or while on the bus or subway.

TABLE 16. Use of Mobile Media, by Activity, 2011-2017

Among 0- to 8-year-olds, percent who have used a smartphone, iPod Touch, or tablet device to:	2011	2013	2017
Watch videos (e.g., YouTube)	20% ^a	47% ^b	73% ^c
Play games	33% ^a	63% ^b	70% ^c
Use apps	16% ^a	50% ^b	65% ^c
Watch TV/movies	11% ^a	38% ^b	59% ^c
Read books	4% ^a	30% ^b	28% ^b
Any mobile media use	38%^a	72%^b	84%^c

Note: Question structure changed in the 2017 survey. In 2011 and 2013, respondents were asked about each activity on each device separately; in 2017 they were asked about all device types together. Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

TABLE 17. Where Mobile Media Are Used, by Age, 2017

Percent who often/sometimes use a mobile device when they:	All	Child's age		
	0 to 8	< 2	2 to 4	5 to 8
Are in a car or on public transportation	38%	11% ^a	35% ^b	54% ^c
Eat at a restaurant	19%	7% ^a	23% ^b	23% ^b
Eat at home	14%	4% ^a	15% ^b	19% ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

Only 28 percent of kids age zero to eight have ever read a book on a smartphone or tablet.

Use of mobile apps. The majority of parents has downloaded apps for their children to use (71 percent), as indicated in Table 18 (there has not been a significant change since 2013). Nearly one in four (24 percent) parents say they have downloaded apps for a child under age 2, while 80 percent have done so for a 2- to 4-year-old and 88 percent for those in the 5- to 8-year-old range. There are no other demographic differences in the likelihood of a parent downloading apps for a child, such as by gender, race/ethnicity, income, or parent education. There are some differences in the likelihood of a parent *paying* to download an app for their child, as indicated in Figure 10; overall, 25 percent of parents have purchased apps and 45 percent have downloaded free apps only (29 percent haven't downloaded any apps for their child). Higher-income parents are twice as likely to purchase an app for a child (29 percent) as lower-income parents are (14 percent).

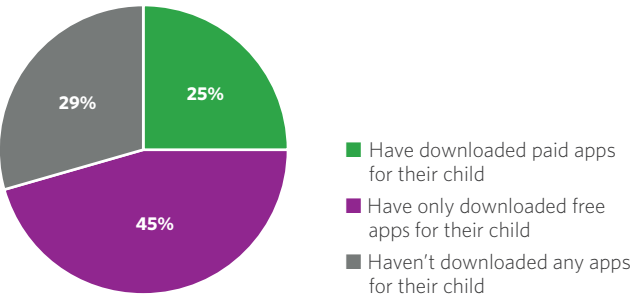
Other than age, there are no demographic differences in the likelihood of a parent downloading apps for a child.

TABLE 18. Downloading Apps

Among parents of 0- to 8-year-olds, percent who have downloaded apps for their child		
Year	• 2011	40% ^a
	• 2013	68% ^b
	• 2017	71% ^b
Child's age, 2017	• Under 2	24% ^a
	• 2 to 4	80% ^b
	• 5 to 8	88% ^c

FIGURE 10. Paid vs. Free Apps, 2017

Among parents of 0- to 8-year-olds, percent who:



Note: Segments do not add to 100 percent due to rounding.

COMPUTERS

AS INDICATED IN TABLE 19, more than half (57 percent) of all children age 0 to 8 have ever used a computer, ranging from nearly one in 10 (9 percent) children under 2, to almost half (46 percent) of 2- to 4-year-olds, to almost nine in 10 (88 percent) 5- to 8-year-olds. These rates are almost identical to those found six years ago, in 2011 (59 percent of all 0- to 8-year-olds, 53 percent of 2- to 4-year-olds, and 90 percent of 5- to 8-year-olds). There are no significant differences by gender, income, or parent education in the proportion of children who have ever used computers.

Children's computer usage appears to be trending downward, although the differences over time have not yet reached statistical significance (see Table 20): In 2011, children 8 or under spent 17 minutes a day using a computer, whereas in 2017, they are spending 10 minutes on average. In 2017, children's average computer time ranges from less than a minute a day among children under 2 to five minutes a day among 2- to 4-year-olds to 20 minutes a day among 5- to 8-year-olds (see Table 21).

About one in 10 (11 percent) children are daily computer users, meaning they typically use a computer at least once or more every day; this is down slightly from 14 percent in 2011 and 2013 (see Table 8). Of course, daily computer use varies substantially by age, such that among 5- to 8-year-olds, one in five (20 percent) uses a computer one or more times every day (Table 9). The main activities children do on a computer are watching TV or videos (:04 among all) and playing computer games (:03), as seen in Table 20.

TABLE 19. Ever Used a Computer, by Age, 2011 vs. 2017

Percent who have ever used a computer		2011	2017
Child's age	• Under 2	4%	9%
	• 2 to 4	53%	46%
	• 5 to 8	90%	88%
All (0 to 8)		59%	57%

Note: No differences between 2011 and 2017 are statistically significant.

TABLE 20. Time Spent Using a Computer, 2011-2017

Among 0- to 8-year-olds, average time spent using a computer each day for:	2011	2013	2017
TV/video on computer	:03 ^{ab}	:03 ^a	:04 ^b
Computer games	:08 ^a	:05 ^b	:03 ^c
Skype/video chat	NA	NA	*
Homework	:02 ^{ab}	:01 ^a	:02 ^b
Educational software	:03	:02	NA
Anything else	:01 ^{ab}	* ^a	:01 ^b
Total computer time	:17	:11	:10

* Less than one minute but greater than zero.

Note: Skype/video chat was included in "anything else" in 2011 and 2013, and educational software was dropped as a separate item in 2017. Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

TABLE 21. Time Spent Using a Computer, by Age, 2017

Average time spent using a computer each day for:	Child's age		
	Under 2	2 to 4	5 to 8
TV/video on computer	* ^a	:03 ^b	:08 ^c
Computer games	* ^a	:01 ^b	:06 ^c
Skype/video chat	*	*	*
Homework	:00 ^a	* ^a	:04 ^b
Anything else	* ^a	:01 ^b	:02 ^b
Total computer time	*^a	:05^b	:20^c

* Less than one minute but greater than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

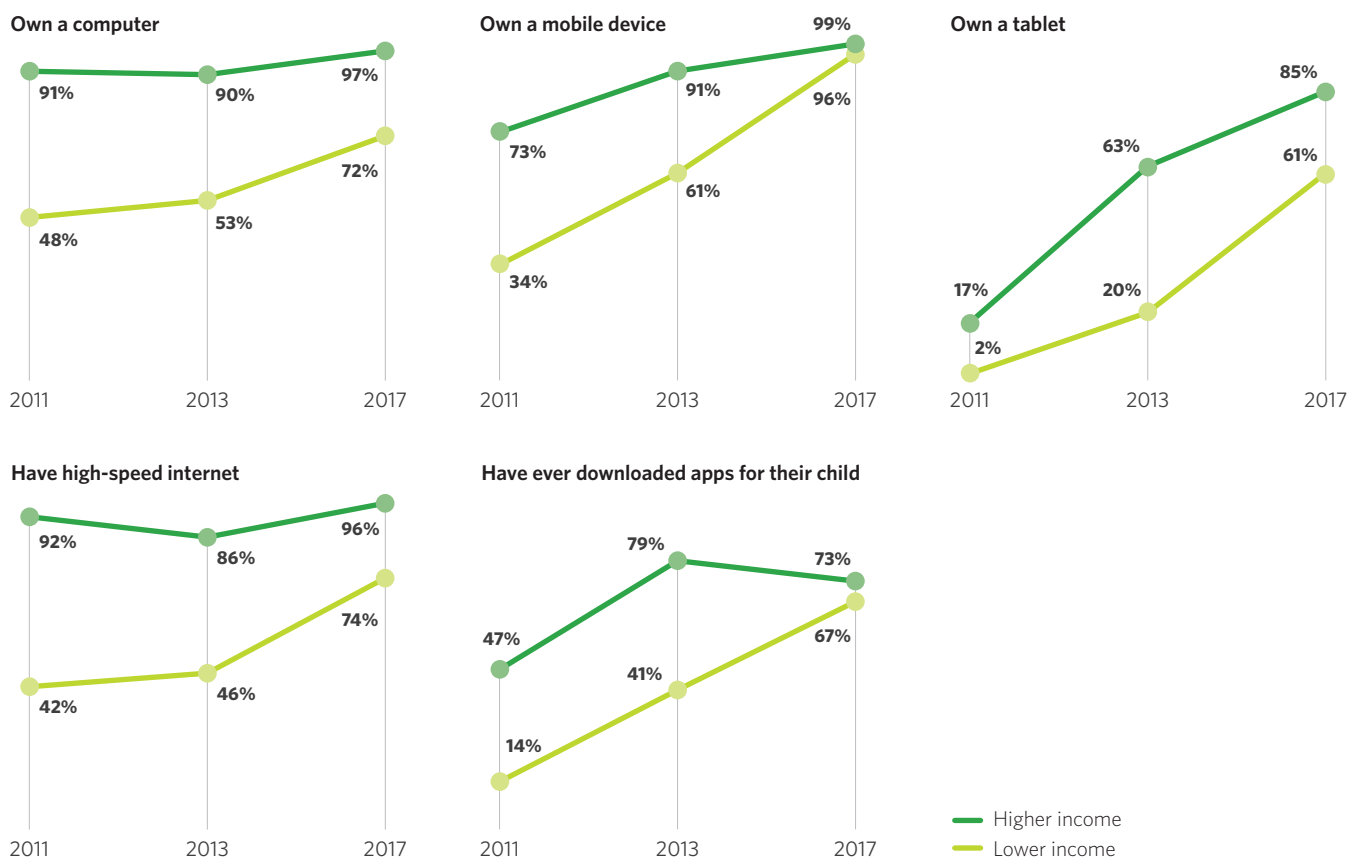
DIGITAL DIVIDE

AS SEEN IN TABLE 22 (page 30), there are still substantial gaps between lower- and higher-income children in home computer access (25 percentage points) and high-speed home internet access (22 percentage points), but these gaps are much smaller than they have been in the past, as seen in Figure 11. In 2011, the gap between lower- and higher-income families was 43 percentage points in computer ownership and 50 percentage points in high-speed internet access at home. Today, 72 percent of children in lower-income homes have a home computer, and 74 percent have high-speed internet access (compared to 97 percent and 96 percent respectively, among higher-income children).

In addition to the gap in computer ownership and internet access, children in lower-income homes are still less likely to have a tablet at home (a 24 percentage-point difference). However, the gap in overall mobile ownership has virtually disappeared (3 percentage points), due to the number of lower-income families that now have a smartphone. In 2011, 34 percent of lower-income families had a mobile device in the home; today 96 percent do (see Table 23, page 30).

FIGURE 11. Digital Divide and App Gap, by Income, 2011-2017

Among families of 0- to 8-year-olds, those who:



Note: Lower income is less than \$30,000 a year and higher income is more than \$75,000 a year. Middle-income group is left off for clarity.

TABLE 22. Digital Divide and App Gap, by Income, 2017

Among 0- to 8-year olds, percent who:	All	Lower (<\$30K)	Middle (\$30K-\$75K)	Higher (>\$75K)
Have a computer in the home	91%	72% ^a	91% ^b	97% ^c
Have high-speed internet at home	90%	74% ^a	89% ^b	96% ^c
Have a mobile device at home (any)	98%	96% ^a	98% ^{ab}	99% ^b
• Smartphone	95%	89% ^a	94% ^b	98% ^c
• Tablet	78%	61% ^a	76% ^b	85% ^c
• Child's own tablet	42%	40%	45%	40%
Parents downloaded apps for the child	71%	67%	71%	73%
Used a computer the previous day	15%	15%	17%	15%
Use a computer every day	11%	12%	11%	11%
Average time spent with computers per day	:10	:15 ^a	:11 ^{ab}	:08 ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

Despite the fact that lower-income households are less likely to have a tablet in the home, there is actually no difference in the likelihood of a lower- or higher-income child having their own tablet (Table 22). Sixty-one percent of lower-income children have a tablet in the home, and 40 percent have their own tablet. Eighty-five percent of higher-income children have a tablet in the home, and 40 percent have their own tablet.

The “app gap” discussed in our 2011 and 2013 reports (the difference in the percent of parents who have downloaded apps for their children to use) has decreased substantially as well (Figure 11), going from 38 percentage points in 2013 to 6 percentage points today. Today, two-thirds (67 percent) of low-income parents have downloaded apps for their child to use (compared to 14 percent in 2011), not statistically different from the 73 percent of higher-income parents who have done so.

Despite the ongoing (although reduced) gap in computer ownership, lower-income children are equally as likely as kids in higher-income homes to use a computer on a daily basis and to have used a computer the previous day (Table 22) — which points to either increased use among those lower-income children who do have a computer and internet access at home, or to lower-income children getting access to computers elsewhere, such as at school, the library, or a friend's home. Even more interesting is that lower-income children, who have less home access to computers and the internet, spend more time using them than higher-income children do (15 minutes a day on average, compared to 8 minutes a day among higher-income youth). In short,

TABLE 23. Digital Access Among Lower-Income Families, 2011-17

Among 0- to 8-year olds in lower-income families, percent whose family has:	2011	2013	2017
Computer at home	48% ^a	53% ^a	72% ^b
High-speed internet access at home	42% ^a	46% ^a	74% ^b
Any mobile device	34% ^a	61% ^b	96% ^c
• Smartphone	27% ^a	51% ^b	89% ^c
• Tablet	2% ^a	20% ^b	61% ^c
• Child's own tablet	* ^a	4% ^b	40% ^c
Ever downloaded apps for the child	14% ^a	41% ^b	67% ^c

* Less than 1 percent but greater than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

the ongoing gap in access does not appear to be resulting in a gap in use.

There is a similar trend regarding the amount of time children spend using mobile devices (see Table 15). White children, those from higher-income homes, and those whose parents graduated from college all spend less time with mobile media than other children do. For example, children from higher-income households spend an average of 36 minutes less per day using mobile media than those in low-income homes (:37 vs. 1:13).

GAMING AND SOCIAL MEDIA

Gaming

Children under 8 spend an average of 25 minutes a day gaming, an amount that has remained remarkably steady since 2011 (see Table 1). This estimate of total gaming time includes mobile games, computer games, and video games (console and those played on a handheld gamer). This is still far less than they spend watching TV or videos (1:40) and a little less than they spend reading or being read to (:29).

The vast majority of gaming among this age group today occurs on mobile devices such as tablets or smartphones: an average of 16 minutes a day, compared to no more than five minutes a day each on console players (:05), computers (:03), or handheld gamers (:01). While the overall time devoted to gaming has remained steady since 2011, there has been a shift in which devices children use for gameplay. Time spent playing on mobile

devices such as phones and tablets has gone steadily up (from three minutes in 2011, eight in 2013, and now 16 minutes a day in 2017), while time spent gaming on every other device has gone down.

As seen in Table 6, the majority of children's homes have a console video game player (69 percent), about the same as in 2011 (67 percent), but fewer homes have a handheld gaming device such as a Game Boy or Nintendo DS (31 percent today, down from 44 percent in 2011). On the other hand, children have far more access to mobile devices such as tablets and smartphones today than in years past: 98 percent have a mobile device in the home, compared to 52 percent in 2011 and 75 percent in 2013. So while mobile devices are gaining a presence in children's homes, more traditional video game platforms are holding steady or declining, as is their use.

TABLE 24. Time Spent Gaming Per Day, by Demographic and Type of Game, 2017

Among 0- to 8-year-olds, average time spent playing each type of electronic game per day (hours:minutes)

Demographic		Total	Mobile	Console Video	Handheld Video	Computer
Age	• Under 2	*a	*a	:00 ^a	*a	*a
	• 2 to 4	:21 ^b	:16 ^b	:03 ^b	:01 ^a	:01 ^b
	• 5 to 8	:42 ^c	:24 ^c	:09 ^c	:03 ^b	:06 ^c
Gender	• Boys	:32 ^a	:19 ^a	:07 ^a	:02	:04
	• Girls	:20 ^b	:13 ^b	:03 ^b	:01	:03
Race/ethnicity	• African-American	:29	:21	:03	:02	:03
	• Hispanic/Latino	:28	:17	:05	:02	:04
	• White	:25	:16	:05	:01	:03
Income	• Lower (<\$30,000)	:43 ^a	:28 ^a	:08	:04 ^a	:03
	• Middle (\$30,000 to \$75,000)	:26 ^b	:16 ^b	:04	:02 ^{ab}	:04
	• Higher (>\$75,000)	:18 ^c	:11 ^c	:04	*b	:03
Parent education	• High school or less	:34 ^a	:22 ^a	:06	:03 ^a	:03 ^{ab}
	• Some college	:29 ^a	:17 ^a	:05	:02 ^a	:05 ^a
	• College degree	:15 ^b	:09 ^b	:04	*b	:02 ^b
All		:25	:16	:05	:01	:03

* Less than one minute but greater than zero.

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read vertically within each demographic group.

Demographic differences. Gaming varies a lot by age (Table 24, page 31), ranging from virtually none among children under 2 to 21 minutes a day among 2- to 4-year-olds and 42 minutes a day among 5- to 8-year-olds. Boys spend more time gaming than girls (:32 vs. :20). There are no differences by race/ethnicity, but children from lower-income homes and those with less-educated parents spend more than twice as much time gaming than their peers do (for example, lower-income children average :43 a day gaming, compared to :18 a day among higher-income youth).

Social Media and Social Gaming

Because of the increasing popularity of social media among teens and tweens, it is of interest to track at what age social media use begins. Of course, social media have become increasingly difficult to define decisively, as sites like YouTube, virtual worlds such as Club Penguin, and apps like Musical.ly can all involve communication with others online and therefore be considered social media. For the purposes of this survey, two questions were asked about social media: First, whether and how often children play social games with other children online, such as Club Penguin, Animal Jam, or Minecraft, and second, whether and how often they use social media sites such as Instagram, Snapchat, or Musical.ly.

Among all 0- to 8-year-olds, 12 percent play online social games often/sometimes (Table 25). Not surprising, most of this social gameplay occurs among the older children in the survey: 22 percent of 5- to 8-year-olds often or sometimes play social games. Consistent with other findings on gaming, boys are more likely than girls to play social games, with 28 percent of 5- to 8-year-old boys playing often/sometimes, compared to 15 percent of girls that age.

Nongame social media use is less common among this young age group. Only 4 percent of 0- to 8-year-olds often or sometimes use sites such as Instagram, Snapchat or Musical.ly. Even among 5- to 8-year-olds only, just 5 percent use such sites often/sometimes. There are no statistically significant differences by gender.

TABLE 25. Frequency of Social Media Use, by Age and Gender, 2017

Percent who often/ sometimes:	0 to 8	5 to 8		
		All	Boys	Girls
Play social games*	12%	22%	28% ^a	15% ^b
Use social site [†]	4%	5%	4%	6%

* Such as Club Penguin, Animal Jam, or Minecraft, if played online with other kids.

† Such as Instagram, Snapchat, or Musical.ly.

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read across rows.

Social media have become increasingly difficult to define decisively, as sites like YouTube, virtual worlds such as Club Penguin, and apps like Musical.ly can all involve communication with others online.

THE AMOUNT OF TIME children spend reading per day has remained remarkably steady over the past six years, at about a half-hour a day on average (:29 in 2011, :28 in 2013, and :29 in 2017, as seen in Table 1). Almost all reading among children takes place via print; just three minutes is e-reading. About six in 10 children (57 percent) read or are read to on a daily basis, a proportion that has also been largely unchanged since 2011 (Table 8).

Demographic differences. The frequency (Table 26) and amount (Table 27) of children's reading varies by age. Fewer than half of children under 2 are read to on a daily basis (43 percent), compared to just over half (56 percent) of 2- to 4-year-olds and nearly two-thirds (64 percent) of 5- to 8-year-olds who read or are read to every day. Girls are more likely to be daily readers than boys (61 percent vs. 53 percent). The only statistically significant difference in frequency or average amount of reading per day by race/ethnicity is that more white children (65 percent) read or are read to daily than are African-American or Hispanic children (41 percent and 42 percent, respectively). In contrast, there are significant differences in both frequency and time spent reading between groups defined by income and parent education. For example, 40 percent of low-income children read or are read to every day, compared to 65 percent of children from high-income families. This translates into a difference of eight minutes a day in average reading time based on family income. The gap by parent education is even higher: 11 minutes a day (:34 for children whose parents attended college, compared to :22 among those whose parents have a high school education or less).

E-reading. Despite the advent of e-readers and the spread of tablets, electronic reading has not become popular among children. Twenty-nine percent of children's homes now have e-readers and 78 percent have a tablet (Table 6). But of the 29 minutes a day children spend reading, 26 is in print and just three is electronic. A total of 28 percent of children has ever read a book on an electronic device (Table 16), a large increase from the 4 percent who had done so in 2011, but virtually no change from 2013 (30 percent); among this age group, e-reading simply doesn't seem to have caught on in a substantial way. Despite the increase in the number of children who have tried e-reading, they are still far less likely to have used a mobile device for reading (28 percent) than for any of the other activities asked about in the survey, such as watching videos (73 percent) or playing games (70 percent) (Table 16).

TABLE 26. Frequency of Reading, by Demographic, 2017

Percent of 0- to 8-year-olds who read/are read to every day		
Age	• Under 2	43% ^a
	• 2 to 4	56% ^b
	• 5 to 8	64% ^c
Gender	• Boys	53% ^a
	• Girls	61% ^b
Race/ethnicity	• White	65% ^a
	• Hispanic/Latino	42% ^b
	• African-American	41% ^b
Income	• Lower (<\$30,000)	40% ^a
	• Middle (\$30,000 to \$75,000)	54% ^b
	• Higher (>\$75,000)	65% ^c
Parent education	• High school or less	44% ^a
	• Some college	60% ^b
	• College degree	67% ^b

TABLE 27. Time Spent Reading Per Day, by Demographic, 2017

Average time spent reading per day among 0- to 8-year-olds		
Age	• Under 2	:21 ^a
	• 2 to 4	:34 ^b
	• 5 to 8	:30 ^b
Gender	• Boys	:27
	• Girls	:32
Race/ethnicity	• White	:30
	• African-American	:28
	• Hispanic/Latino	:25
Income	• Lower (<\$30,000)	:26 ^{ab}
	• Middle (\$30,000 to \$75,000)	:25 ^a
	• Higher (>\$75,000)	:33 ^b
Parent education	• High school or less	:22 ^a
	• Some college	:34 ^b
	• College degree	:33 ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read vertically within each demographic group.

MUSIC

ON AVERAGE, CHILDREN AGE 8 and under spend 18 minutes a day listening to music (Table 1). This amount is not significantly different from 2013 (:20), but is down from the 29 minutes a day devoted to music among this age group in 2011. Given the many new methods available to families for listening to music — through phones, Bluetooth speakers, computers and television sets, and via downloads or streaming services, in addition to CDs and radios — it is somewhat surprising that time spent listening to music among young children has declined over the past six years. Younger children spend more time listening to music than older children do (Table 3): 23 minutes a day among babies under 2 and 21 minutes a day among 2- to 4-year-olds, compared to 14 minutes a day among 5- to 8-year-olds.

While the survey didn’t explore the panoply of ways children and parents can now access music, it did ask about two methods: watching online music videos, and using a voice-activated virtual

assistant (such as Siri or Alexa) to play music (see Table 28). One in four (26 percent) children age 8 and under often or sometimes watch online music videos, including 13 percent of babies under 2, 27 percent of 2- to 4-year-olds, and 31 percent of 5- to 8-year-olds. Six percent of all 0- to 8-year-olds have ever used a voice-activated assistant to request music (11 percent of 5- to 8-year-olds).

Demographic differences. As indicated in Table 28, girls spend more time listening to music than boys (:21 a day on average, compared to :15 among boys). Girls are also more likely than boys to watch online music videos (32 percent often/sometimes do so, compared to 20 percent of boys). There are also some differences in music listening by race or household income. Children in lower-income homes average more time listening to music than middle-income children do (:25 a day, vs. :16, with higher-income children in between, at :17).

TABLE 28. Musical Experiences, by Demographic, 2017

Demographic		Average time spent listening to music per day (hours:minutes)	Percent who watch music videos often or sometimes	Percent who have ever used a voice-activated assistant to listen to music
Age	• Under 2	:23 ^a	13% ^a	1% ^a
	• 2 to 4	:21 ^a	27% ^b	4% ^b
	• 5 to 8	:14 ^b	31% ^b	11% ^c
Gender	• Boys	:15 ^a	20% ^a	6%
	• Girls	:21 ^b	32% ^b	7%
Income	• Lower (<\$30,000)	:25 ^a	31% ^a	6% ^a
	• Middle (\$30,000 to \$75,000)	:16 ^b	26% ^{ab}	4% ^{ab}
	• Higher (>\$75,000)	:17 ^{ab}	23% ^b	8% ^b
All (0 to 8)		:18	26%	6%

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read vertically within each demographic group.

EMERGING TECHNOLOGIES

ONE ADVANTAGE OF A regularly repeated survey such as this one is that it enables us to track the introduction of new technologies to children's lives. In the years since the previous wave of this survey (2013), three new technologies have emerged that warranted investigation: virtual reality headsets, "smart" toys that connect to the internet, and voice-activated virtual assistant devices, such as Amazon Echo or Google Home.

Virtual reality. Virtual reality (VR) headsets place a screen directly in front of the eyes and offer the user a three-dimensional experience of video or gaming content. Examples include the Oculus Rift and Sony PlayStation VR, both launched in 2016, and Google Cardboard, developed in 2014 (and distributed for free to all New York Times subscribers in November 2015). Using a VR headset is an immersive experience in which the entire range of vision is taken up by the video content, and users' movements alter the viewpoint and trajectory of the game or movie. The experience is so heightened and exciting that it may make playing games and viewing videos even more compelling to young people. As a result, some experts are excited about the learning potential of VR for children, while others worry it may also exacerbate any negative media effects — for example, from exposure to violence.

As seen in Table 6, this survey indicates that 11 percent of children age 8 or under now live in homes with a VR headset. Average daily times for using VR headsets have not been included in the screen media tables in this report because use of the devices appears to be extremely infrequent among this age group; in our sample, fewer than one-half of 1 percent (five individuals) had used a VR headset the previous day. Because so few children used VR headsets, the average daily time spent using them was less than half a minute, with no statistically significant variations among demographic groups.

Smart toys. Smart or "connected" toys link to the internet through Wi-Fi and can interact with the child, as well as remembering what activities the child likes to do and what the child has said to the toy in the past. Examples of smart toys include Hello Barbie, Fisher-Price's Smart Toy Bear, and the CogniToys Dino. The toys use voice and image recognition and web-searching functions to

interact with the child, and they receive updates through Wi-Fi, so the content of the interactions stays fresh. Connected toys have engendered a great deal of controversy over privacy concerns and hacking incidents. According to the survey, 10 percent of all 0- to 8-year-olds now have a connected toy. The group most likely to have smart toys is 2- to 4-year-olds, at 15 percent (Table 29). African-American children are more likely to have a smart toy (17 percent) than either white or Hispanic/Latino children (10 percent and 8 percent, respectively). There is no statistically significant gender difference in smart toy ownership.

TABLE 29. The Internet of Toys, 2017

Percent of 0- to 8-year-olds with an internet-connected toy		
Age	• Under 2	7% ^a
	• 2 to 4	15% ^b
	• 5 to 8	9% ^a
Race/ethnicity	• African-American	17% ^a
	• White	10% ^b
	• Hispanic/Latino	8% ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read vertically within each demographic group.

Virtual assistants. Voice-activated virtual assistant devices such as Amazon Echo were first introduced in a limited way in 2014, then more broadly in 2015. These devices use voice recognition to respond to queries from users, and they can play music, search the internet, tell jokes, or send texts, among other functions. The devices use "personalities" such as Amazon's Alexa to interact with the user and respond to queries. As seen in Table 6, this survey indicates that 9 percent of homes with children age 0 to 8 now have such a device (Amazon Echo, Amazon Echo Dot, or Google Home). Additionally, voice-activated assistants such as Apple's Siri have been available on smartphones since 2011 and on tablets since 2012. Among all 0- to 8-year-olds, 14 percent often/sometimes ask questions of those devices or of virtual assistants on smartphones or tablets. Among 5- to 8-year-olds,

23 percent interact with such virtual assistants often or sometimes (Table 30).

The survey also explored how children use virtual assistants. As seen in Table 30, some children interact with these devices or assistants “just to talk or fool around” (14 percent of all 0- to 8-year-olds have done so), 10 percent have asked questions to get information, 7 percent have used them to search for videos, 6 percent to play music, and 5 percent have used them to get jokes. Only 1 percent have used the virtual assistant function to make calls or send texts.

TABLE 30. Use of Virtual Assistants by Children, by Age, 2017

	All	Child's age		
		< 2	2 to 4	5 to 8
Use virtual assistant often/sometimes	14%	2% ^a	11% ^b	23% ^c
Have ever used a virtual assistant to:				
• Talk/fool around with	14%	3% ^a	10% ^b	23% ^c
• Get information	10%	2% ^a	2% ^a	21% ^b
• Search for videos	7%	* ^a	5% ^b	11% ^c
• Play music	6%	1% ^a	4% ^b	11% ^c
• Get jokes	5%	0% ^a	2% ^b	10% ^c
• Check the weather	3%	0% ^a	1% ^a	6% ^b
• Make calls/send texts	1%	*	1%	2%

* Less than 1 percent but greater than zero.

Note: “Virtual assistant” includes either a voice-activated device such as an Amazon Echo or Google Home, or a voice-activated “character” on a mobile device, such as Apple’s Siri. Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

CHILDREN UNDER AGE 2

CHILDREN UNDER 2 SPEND an average of 42 minutes a day using screen media, 23 minutes a day listening to music, and 22 minutes a day reading or being read to (Table 31). Despite AAP recommendations that parents avoid the use of screen media by children under 2 — more recently amended to apply only to children under 18 months⁴ — it has been clear for years that many children under 2 are using screen media, almost exclusively for watching TV and videos. The vast majority of children under 2 have watched TV (71 percent).

This year, however, screen media use of children under 2 appears to be trending downward, as seen in Table 31, from more than 50 minutes in 2011 and 2013 to 42 minutes in 2017, although this difference is not statistically significant. The apparent decline in screen media comes from a decline in TV and DVD use, with only a modest increase in mobile media to offset it. TV viewing has dropped by 15 minutes a day (also not statistically significant), from an average of 44 minutes in 2013 to 29 minutes today, and DVD use is down by another five minutes a day. In contrast, time spent watching TV or videos on a mobile device is up only four minutes on average.

The apparent decline in average TV time appears to be a result of children under 2 who do watch TV but now spend less time per day doing so. There is no overall decline in the likelihood of children under 2 watching TV: 71 percent have ever watched TV (compared to 66 percent in 2013, Table 32); 34 percent watch TV every day (compared to 31 percent in 2013, Table 33), and 37 percent did so the previous day (compared to 34 percent in 2013, Table 34). But the average time spent viewing among those who did watch TV the previous day was down, from 2:09 in 2013 to 1:21 in 2017. It appears that parents may be turning off the TV sooner for their infants and toddlers than they were in the past.

Mobile media use under 2. Contrary to the hype about babies and touchscreens, the time devoted to mobile media among this age group remains limited thus far. While a large proportion of children under 2 have used mobile media (46 percent, Table 32, page 38), the average time spent watching TV or videos on a mobile device is still only five minutes a day (up from one minute in 2013, Table 31). Whereas 34 percent of children under 2 watch TV

TABLE 31. Time Spent Using Media, Among Children Under Age 2, 2011-2017

Average time spent per day:	2011	2013	2017
Watching TV, DVDs, or videos	:53	:56	:40
• TV on TV set	:37	:44	:29
• DVDs	:16 ^a	:11 ^{ab}	:06 ^b
• TV/video on computer	*	*	*
• TV/videos on mobile device	* ^a	:01 ^a	:05 ^b
Listening to music	:39^a	:34^{ab}	:23^b
Reading/being read to	:23	:19	:21
• Print	:23	:19	:20
• E-reading [†]	NA	NA	:01
Playing media games	*	:01	*
• Video games (console)	*	*	:00
• Video games (handheld)	*	:00	*
• Computer games	*	*	*
• Mobile games	*	:01	*
Video-chatting[‡]	NA	NA	*
• On a computer	NA	NA	*
• On a mobile device	NA	NA	*
Other digital activities	*	:01	:01
• Educational software (computer) [§]	*	:01	NA
• Homework (computer)	*	:00	:00
• Anything else on a computer	*	*	*
• Anything else on a mobile device	* ^a	* ^{ab}	:01 ^b
Total mobile media	*^a	:02^b	:07^b
Total screen media	:53	:58	:42
Total media	1:55^a	1:51^{ab}	1:25^b

* Less than one minute but greater than zero.

† Not measured separately until 2017.

§ This item was dropped from the survey in 2017.

Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

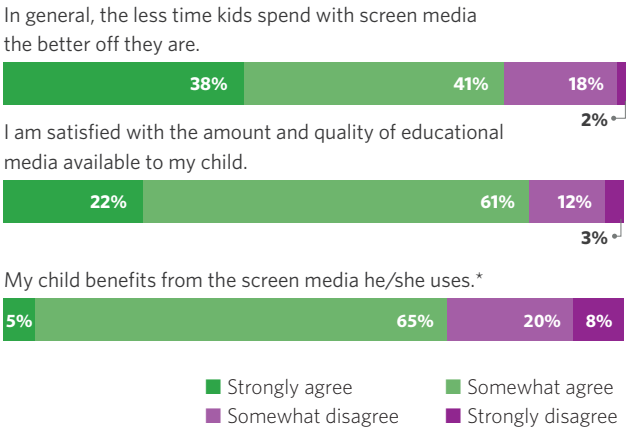
4. AAP Council on Communications and Media (2016). Media and young minds. *Pediatrics*, 138(5). <http://dx.doi.org/10.1542/peds.2016-2591>

every day, only 8 percent watch online videos that often (Table 33). In our survey, 11 percent of children under 2 had watched TV or videos on a mobile device the previous day, and those who watched averaged 46 minutes of viewing time, but 37 percent had watched TV the previous day, and those children had averaged 1:21 of TV time (Table 34).

Reading under 2. Fewer than half of children under 2 read or are read to on a daily basis (43 percent, Table 33). That number has been relatively stable over the years, as has the average amount of time spent reading each day (21 minutes in 2017, Table 31). Only one minute a day on average is devoted to e-reading among this age group.

Parents' views of media for children under 2. Many parents of children under 2 have mixed feelings about media. As illustrated in Figure 12, a large majority (79 percent) agrees with the statement "In general, the less time kids spend with screen media the better off they are," including more than a third (38 percent) who "strongly" agree. At the same time, a majority of those whose children use screen media agrees with the statement "My child benefits from the screen media he/she uses," although only 5 percent "strongly" agree. And 83 percent of parents of children this age say they are satisfied with the amount and quality of educational media available for their child (22 percent agree strongly). Among parents with children under 2 who use screen media, two-thirds say their child's media use helps the child's learning (66 percent), nearly half (48 percent) say it helps their creativity, 46 percent say it helps their ability to focus, and 42 percent say it helps their social skills (see Figure 16 in the next chapter).

FIGURE 12. Parents' Views of Media for Children Under 2, 2017
Percent who agree/disagree that:



* Among those whose child uses screen media.
Note: Segments may not add to 100 percent due to rounding and those who didn't answer the question.

TABLE 32. Screen Media Activities Ever Engaged in by Children Under Age 2, 2011-2017

Percent who have ever:	2011	2013	2017
Watched TV	66%	66%	71%
Watched DVDs/videotapes	52%	46%	45%
Watched online videos [†]	NA	NA	43%
Total ever watched TV, DVDs, videotapes, or online videos	NA	NA	78%
Used a mobile device (smartphone, iPod Touch, tablet)	10% ^a	38% ^b	46% ^b
Used a computer	4% ^a	10% ^b	9% ^{ab}
Played console video games	3%	4%	5%
Played handheld video games [§]	NA	6%	6%

TABLE 33. Daily Media Use, Among Children Under Age 2, 2011-2017

Percent who do each activity daily:	2011	2013	2017
Read/are read to	44%	48%	43%
Watch any TV or videos	40%	32%	35%
• Watch TV	37%	31%	34%
• Watch DVDs/videotapes	16% ^a	11% ^{ab}	7% ^b
• Watch online videos [†]	NA	NA	8%
Use a mobile device	1% ^a	6% ^b	9% ^c
Use a computer	1%	1%	1%
Play console video games	*	1%	*
Play handheld video games [§]	NA	*	1%

TABLE 34. TV Viewing and Online Viewing, Among Children Under Age 2, 2011-2017

	2011	2013	2017
Watched TV the previous day	42%	34%	37%
Average time watching TV among viewers	1:30	2:09	1:21
Watched TV/videos on mobile device the previous day	1% ^a	3% ^a	11% ^b
Average time watching TV/videos on mobile device among viewers	‡	‡	:46

* Less than 1 percent but greater than zero.
† Not measured separately until 2017.
‡ Not asked in 2011.
‡ Cell size not large enough for reliable results.
Note: Only those items with different superscripts differ significantly ($p < .05$). Items without a superscript do not differ significantly. Significance should be read across rows.

PARENTS' VIEWS ABOUT CHILDREN'S MEDIA

PARENTS CLEARLY HAVE MIXED views about their children's use of media, as illustrated in Figure 13. Most parents agree that, in general, "the less time kids spend with screen media the better off they are" (28 percent strongly agree, 48 percent somewhat). But when asked about their own child's use of screen media, 74 percent of parents whose child ever uses screen media say their child "benefits from the screen media he/she uses" (9 percent strongly agree, 65 percent somewhat). And parents are far more likely to say media helps rather than hurts their child's learning, creativity, social skills, and focus (Figure 14). Most think their child spends the right amount of time with screen media (68 percent, Figure 15, page 40), and very few use any kind of device for limiting media time (15 percent of those whose child uses screen media). Yet they also have concerns about their child's media use going forward, especially about sex and violence in media.

Parents are far more likely to say media helps rather than hurts their child's learning, creativity, social skills, and focus.

FIGURE 13. Parents' Views About Children's Media, 2017

Among parents of 0- to 8-year-olds, percent who agree/disagree that:

In general, the less time kids spend with screen media the better off they are.



I am satisfied with the amount and quality of educational media available to my child.



My child benefits from the screen media he/she uses.*



■ Strongly agree ■ Somewhat agree
■ Somewhat disagree ■ Strongly disagree

* Among those whose child uses screen media.

Note: Segments may not add to 100 percent due to rounding and those who didn't answer the question.

FIGURE 14. Parents' Views of Media Effects, 2017

Among parents of 0- to 8-year-olds who use screen media, percent who say their child's media use helps/hurts the child's:

Learning



Creativity



Social skills



Ability to focus



Behavior



Physical activity



■ Helps (a lot or a little) ■ Makes no difference ■ Hurts (a lot or a little)

Note: Segments may not add to 100 percent due to rounding.

Time spent with screen media. The proportion of parents who “strongly” agree that children are better off the less time they spend with screen media is higher among parents with young children (38 percent of those whose child is under 2) than among others (25 percent and 24 percent among parents of 2- to 4-year-olds and 5- to 8-year-olds, respectively), as seen in Table 36. Parents’ opinions about this statement don’t differ based on their educational level and differ only modestly by household income (middle-income parents are more likely than others to strongly agree). But there are large differences by race and ethnicity (Table 35): 43 percent of Hispanic/Latino parents strongly agree that the less time children spend with screen media the better, compared to 23 percent of white parents and 13 percent of African-American parents.

But when it comes to their own children, the vast majority of parents thinks their child spends the right amount of time with screen media (Figure 15): 68 percent, compared to 23 percent who say their child spends too much time with screen media, and 7 percent who say too little. By the time children are in the 5- to 8-year-old age range, nearly a third (31 percent) of parents think their child spends too much time with screen media (Table 36, page 41).

FIGURE 15. Parents’ Views About Their Child’s Screen Media Time, 2017

Among parents of 0- to 8-year-olds who use screen media, percent who say their child spends:

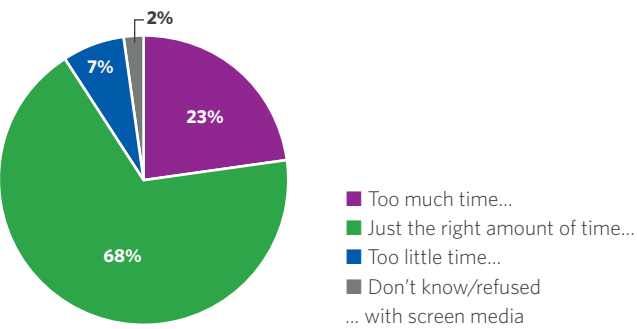


TABLE 35. Parents’ Concerns About Media, by Race/Ethnicity, 2017

Among parents of 0- to 8-year-olds, percent who are very/somewhat concerned about:	All	White	African-American	Hispanic/Latino
• How much violent content is in media	78%	75% ^a	73% ^a	84% ^b
• How much sexual content is in media	77%	73% ^a	75% ^a	85% ^b
• Spending too much time with media	70%	70% ^a	60% ^b	71% ^a
• How much advertising and materialism is in media	69%	66% ^a	62% ^a	78% ^b
• Cyberbullying online	68%	64% ^a	60% ^a	82% ^b
• Companies collecting data about child through media	67%	64% ^a	68% ^b	74% ^b
• Depictions of drugs and alcohol in the media	65%	58% ^a	66% ^a	80% ^b
• Racial and ethnic stereotypes in the media	55%	44% ^a	66% ^b	74% ^b
• Gender stereotypes of girls and boys in the media	50%	39% ^a	60% ^b	72% ^c
• People smoking cigarettes in the media	48%	36% ^a	51% ^b	69% ^c
Percent who “strongly” agree that “the less time children spend with screen media, the better”	28%	23% ^a	13% ^a	43% ^b
Percent who “strongly” or “somewhat” agree that “My child benefits from the screen media he/she uses” (among those who use)	74%	72% ^a	83% ^b	77% ^{ab}

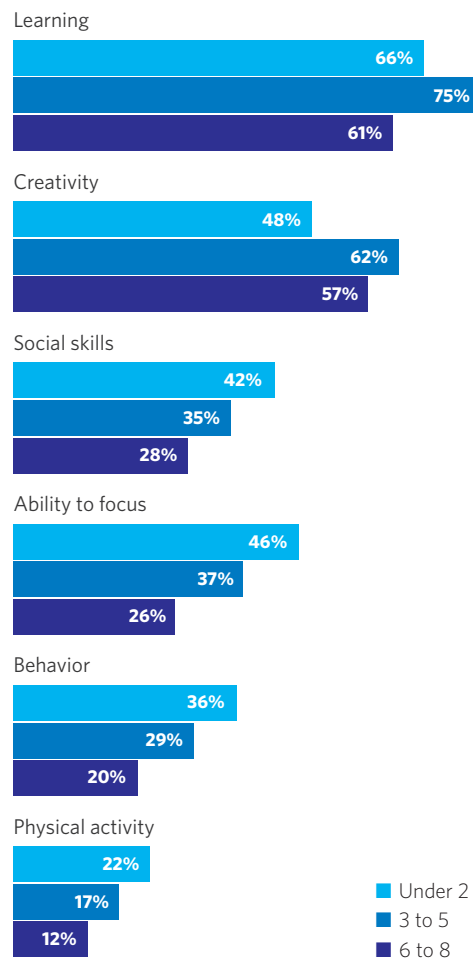
Note: Only those items with different superscripts differ significantly (p < .05). Significance should be read across rows.

Getting children to stop using media. Among parents whose children use screen media, the majority (60 percent) doesn't think it's difficult to get their child to stop using screen media when they ask them to, but some do (32 percent "somewhat" agree that it is difficult to get their child to stop, and 7 percent "strongly" agree). Parents' experiences vary substantially depending on the age of their child (Table 36). Those with children under 2 have a much easier time getting their child to stop (only 20 percent say it's difficult), compared to nearly half (49 percent) of parents of 2- to 4-year-olds and 40 percent of parents of 5- to 8-year-olds who say it's difficult to get their children to turn off screens.

Benefits of screen media. Many parents see specific benefits to their children from screen media use (Figure 14). Sixty-seven percent of parents whose children use screen media say it helps their child's learning at least "a little," and 57 percent say it helps their child's creativity. With regard to other aspects of children's development addressed in the survey, parents were most likely to say media make no difference one way or the other, such as its impact on children's social skills (51 percent), their ability to focus (44 percent), or their behavior (49 percent). But they are more likely to say media help rather than hurt their child's social skills (33 percent vs. 15 percent) and ability to focus (33 percent vs. 22 percent). They are more evenly split when it comes to media's effect on children's behavior: 26 percent say it helps, while 24 percent say it hurts. And parents are least likely to say media helps children's physical activity; only 16 percent say it does, compared to 41 percent that say it hurts and 42 percent that say it makes no difference. Parents' views about the benefits of media vary according to their child's age, as illustrated in Figure 16.

FIGURE 16. Parents' Views of Media Effects, by Child's Age, 2017

Among those whose children use screen media, percent of parents who say media use helps the child's:



Note: Includes those who say media helps "a lot" or "a little."

TABLE 36. Parents' Views and Actions About Screen Media, by Child's Age, 2017

Percent of parents who:	All	Child's age		
	0 to 8	Under 2	2 to 4	5 to 8
Say their child often or sometimes uses screen media in the hour before bed	49%	24% ^a	49% ^b	61% ^b
Agree (strongly or somewhat) that it is difficult to get their child to stop using screen media when they ask them to*	39%	20% ^a	49% ^b	40% ^b
Strongly agree that "the less time children spend with screen media the better"	28%	38% ^a	25% ^b	24% ^b
Say their child spends "too much" time with screen media*	23%	6% ^a	25% ^b	31% ^c
Strongly agree that they are satisfied with the amount and quality of educational media available to their child*	17%	22% ^a	16% ^{ab}	14% ^b
Use a device or app to limit child's screen time*	15%	3% ^a	16% ^b	18% ^b
Use software or device to monitor or limit child's internet access [†]	9%	1% ^a	8% ^b	12% ^c

* Among those whose child uses screen media. † Among those whose child has ever used a computer or mobile device.

Educational media. The vast majority of parents are at least “somewhat” satisfied with the amount and quality of educational TV available to them: 17 percent “strongly” agree that they are satisfied, and 63 percent agree “somewhat” (Figure 13). Parents with very young children (under 2) are more likely to be satisfied with their educational TV options; 22 percent strongly agree that they are satisfied, compared to 14 percent among parents of 5- to 8-year-olds (parents of 2- to 4-year-olds fall in between, with 16 percent agreeing).

Concerns about media. As seen in Table 35, over three-quarters of parents have concerns about their children’s screen media use, especially about the amount of violent (78 percent are concerned) and sexual (77 percent) content their children may be exposed to. More than two-thirds are concerned about how much advertising and materialism are in media (69 percent), about the possibility of cyberbullying (68 percent), about companies collecting data about children through media (67 percent), and about depictions of drugs and alcohol in media (65 percent). About half are concerned about stereotypes in media, including racial and ethnic examples (55 percent) and those based on gender (50 percent). Just under half (48 percent) are concerned about people smoking cigarettes in media.

The most consistent differences in parents’ levels of concern about these issues are based on race/ethnicity. For every issue asked about in the survey, Hispanic/Latino parents expressed the highest levels of concern. For example, 80 percent of Hispanic/Latino parents say they are concerned about depictions of drugs and alcohol in media, compared to 58 percent of white parents and 66 percent of African-American parents. Both African-American and Hispanic/Latino parents are more concerned about racial and ethnic stereotypes than white parents are (66 percent of African-American and 74 percent of Hispanic/Latino parents, compared to 44 percent of white parents). They are also more concerned about gender stereotypes (60 percent of African-American and 72 percent of Hispanic/Latino parents, compared to 39 percent of white parents). African-American parents are less concerned than white or Hispanic/Latino parents about how much time children spend with media (60 percent are concerned, compared to 70 percent of white and 71 percent of Hispanic/Latino parents).

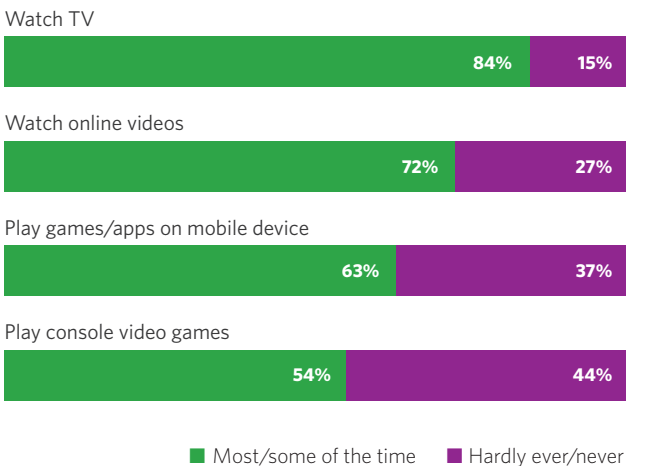
Parental monitoring of media use. Very few parents say they use any kind of device or app to limit their child’s screen time (15 percent of those whose child uses screen media; Table 36). Parents of older children are more likely to use such a tool (18 percent of parents of 5- to 8-year-olds, compared to 3 percent of

parents of children under 2). Lower-income parents are more likely than higher-income parents to use such a device or app (21 percent, compared to 12 percent of higher-income parents). Parents are even less likely to use an internet-monitoring tool such as NetNanny or Circle with Disney (9 percent among all parents, 12 percent among parents of 5- to 8-year-olds).

Screen media and bedtime. Despite concerns about screen media potentially disrupting sleep, many children watch TV or videos, play games, or use screen media for other purposes in the hour before bedtime. About half (49 percent) do so either “often” (17 percent) or “sometimes” (32 percent). The likelihood of children using screen media before bed varies by age (Table 36), with about one in four (24 percent) children under 2 doing so often or sometimes, compared to half (49 percent) of 2- to 4-year-olds and 61 percent of 5- to 8-year-olds. In addition, many children have screen devices in their bedrooms overnight. Twenty-nine percent have a TV in their room, and 16 percent have a mobile device or laptop in their bedroom either “every” night (10 percent) or “most” nights (6 percent).

Parental co-engagement with media. The survey also explored how often parents do or don’t use media along with their children (Figure 17). Eighty-four percent of parents watch TV with their child at least some of the time; 31 percent say they do so “most of the time” the child watches. Fewer say they watch online videos with their child (72 percent at least sometimes), play games or use apps on a mobile device (63 percent at least sometimes), or play console video games (54 percent).

FIGURE 17. Co-Use of Media Among Parents and Children, 2017
Among parents of 0- to 8-year-olds, percent who do each media activity with their child:



Note: Segments may not add to 100 percent due to rounding.

Guidance from pediatricians. For years, the American Academy of Pediatrics (AAP) has been issuing guidelines for children’s use of media and has encouraged doctors to speak with parents about their children’s media use. This year, the survey reveals a small increase in the proportion of parents who say their pediatrician has spoken with them about this topic (Figure 18): One in five (20 percent) say they have, compared to 14 percent in 2011 and 16 percent in 2013. Among parents of 5- to 8-year-olds, nearly one in four (24 percent) say their pediatrician has had a conversation with them about the child’s media use.

One in five (20 percent) parents say they know the AAP recommendations for their child’s media use, half (51 percent) don’t know but say they are interested in learning about them, and 29 percent aren’t interested (Figure 19). The AAP has been more successful in reaching white, higher-income, and higher-educated parents with its media-related recommendations (Table 37). For example, 24 percent of parents with a college degree say they know the AAP’s recommendations for their children, compared to 16 percent of parents with a high school diploma or less. Hispanic/Latino parents are the least aware that the AAP has recommendations about children’s media use (34 percent are aware that there are such recommendations, and 13 percent say they know what they are) and are most interested in learning more about them (69 percent, compared to 42 percent of white parents and 49 percent of African-American parents).

Hispanic/Latino parents are most interested in learning more about the AAP’s recommendations about children’s media use.

FIGURE 18. Parent/Pediatrician Conversations About Media Use, 2011-2017

Among parents of 0- to 8-year-olds, percent who say their pediatrician has spoken with them about their child’s media use:



FIGURE 19. Parents’ Interest in Learning More About AAP Recommendations, 2017

Among parents of 0- to 8-year-olds, percent who:

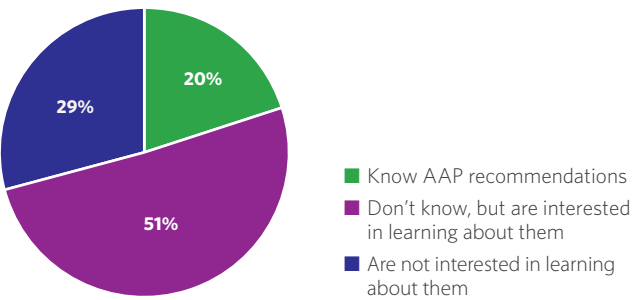


TABLE 37. Parents’ Awareness of Media-Use Recommendations from Pediatricians, 2017

Among parents of 0- to 8-year-olds, percent who know the AAP media-use recommendations for their child		
Race/ethnicity	• White	23% ^a
	• African-American	21% ^a
	• Hispanic/Latino	13% ^b
Income	• Lower (<\$30,000)	16% ^a
	• Middle (\$30,000 to \$75,000)	17% ^a
	• Higher (>\$75,000)	24% ^b
Parent education	• High school or less	16% ^a
	• Some college	22% ^b
	• College degree	24% ^b

Note: Only those items with different superscripts differ significantly ($p < .05$). Significance should be read vertically within each demographic group.

CONCLUSION

THIS REPORT IS THE third installment in an ongoing series of surveys tracking the use of media and technology among U.S. children from birth to age 8. At a time of revolutionary change in the media landscape, these reports provide consistent, objective data monitoring the introduction of new technologies and media-based activities into the lives of our youngest children.

We are fortunate that these studies began when they did — just a few years after the introduction of mobile phones and touch-screen devices — offering us a once-in-a-lifetime look at how such revolutionary new technologies have been introduced into children's lives. Today we are at the cutting edge of the introduction of several other new technologies that have the potential to have a profound effect on children's lives: virtual reality, in which children can be immersed in 360-degree gaming or video environments; voice-activated virtual assistants, which hold the potential for preliterate children to conduct searches, make phone calls, send texts, request videos, or play music; and internet-connected toys, the child's version of the "internet of things." As we consider the implications of these trends, we hope it will be valuable to have nationally representative data documenting their uptake among the nation's children. The next iteration of this survey will give us a sense of whether any or all of these new technologies will have the impact mobile media and touchscreens have had in terms of how kids spend their time.

There are important limitations to these studies. As with a population census, a media census describes broad national trends, in this case the adoption and use of media in the country as a whole — a sort of Dow Jones Industrial Average of media use among children in this age group. But a census is less effective at helping us understand how any one child might make use of media, all the exciting things she may explore or create with technology, or the ideas and concepts she might learn. Another limitation is that the study measures the amount of time children spend with media and technology, but it doesn't document the *content* of the TV shows, videos, and games in use — whether they are educational, age-appropriate, high- or low-quality — nor does it measure any effects of media on children. Content has repeatedly been shown to be a major factor in how media affect learning and development. In short, this survey should not be read as a judgment on

the quality of children's time with media; rather, it is a snapshot of how media and technology are infused into daily life. Additional experimental and qualitative work is essential to better understanding the full implications of children's media use.

Lastly, this is the first time Common Sense has asked questions about new technologies, including virtual reality, voice-activated assistants, and internet-connected toys, and there is some uncertainty about whether respondents knew enough about each technology to answer accurately. For example, parents may not realize that their children's toys connect to the internet or what a virtual reality headset is. We will be monitoring each new technology's integration into family life in future surveys as they become more mainstream and better understood.

At a time of revolutionary change in the media landscape, these reports provide consistent, objective data monitoring the introduction of new technologies and media-based activities into the lives of our youngest children.

Through these surveys, we are able to see what changes and what stays the same in terms of children's use of media. What clearly *has* changed is how young people access and view TV shows, videos, and games; what has *not* changed is the fact that children engage in these activities starting at a young age and devote hours a day to them. What *has* changed is that devices are now mobile, connected, and interactive; what *hasn't* changed is that the primary activities conducted on these devices are the same as they were six years ago: watching TV or videos and playing games. What *has* changed is that the various digital divides identified in our previous reports have shrunk substantially; what *hasn't* changed is that many children from lower-income households still don't have a home computer or tablet.

We hope the data presented here will help inform the work of the many content creators, educators, health professionals, researchers, policymakers, and advocates who care about the role of media in children's lives — and that they will encourage parents to gather the information and tools they need to make mindful choices about their children's engagement with media and technology.

APPENDIX: TOPLINES

Q1. Is there a TV set in your household or not?

Yes	98%
No	2%

Q2. Which of the following, if any, do you have in your household? You may have been asked similar questions before, but we appreciate you responding to the questions below.

a. [If Q1=yes] Cable or satellite TV	<ul style="list-style-type: none"> Among those with a TV Among all 	67% 65%
b. [If Q1=yes] A way to connect your TV to the internet so you can download or stream TV shows or movies onto your TV set	<ul style="list-style-type: none"> Among those with a TV Among all 	77% 75%
c. [If Q1=yes] An HD antenna so you can watch TV networks over the air without cable	<ul style="list-style-type: none"> Among those with a TV Among all 	29% 29%
d. [If Q1=yes] A digital video recorder (DVR) so you can record programs and watch them later	<ul style="list-style-type: none"> Among those with a TV Among all 	45% 44%
e. A subscription service like Netflix, Amazon Prime Video, or Hulu, for streaming TV shows and movies		72%
f. A DVD player		86%
g. A laptop or desktop computer		91%
h. High-speed internet access (cable, wireless, or DSL)		90%
i. [If Q1=yes] A console video game player like an Xbox, PlayStation, or Wii	<ul style="list-style-type: none"> Among those with a TV Among all 	70% 69%
j. A virtual reality (VR) headset, such as Oculus Rift, Google Cardboard, or PlayStation VR		11%
k. A handheld video game player like a Game Boy, PSP, or Nintendo DS		31%
l. An iPad or similar tablet device, such as a Galaxy Tab or other Android tablet, Microsoft Surface, or Kindle Fire		78%
m. An iPod Touch or similar device		21%
n. A Kindle, Nook, or other e-reader		29%
o. A “virtual assistant” device such as an Amazon Echo, Amazon Echo Dot, or Google Home		9%

Q3. [If Q1=yes] When someone is at home in your household, how often is the TV on, even if no one is actually watching it?

	Among those with a TV	Among all
a. Always	12%	12%
b. Most of the time	31%	30%
c. Some of the time	39%	38%
d. Hardly ever	14%	14%
e. Never	3%	3%

Q4. What type of cell phone, if any, do you have?

a. A smartphone (can send email, watch videos, use apps, or go online with it)	95%
b. A regular cell phone (just for talking or texting)	4%
c. I don't have a cell phone	1%

For this next set of questions, please think about your [FOCAL CHILD]. Some of these questions may be about things [CHILD] is too young to do. If that's the case, just mark the correct response and move on.

Q5. [If Q2_l, Q2_m, or Q4_a=yes] Have you ever downloaded an app for [CHILD] to use?

	Among those with a mobile device	Among all
Yes	72%	71%
No	28%	27%

Q6. [If Q5=yes] Have you ever paid to download an app for [CHILD] to use?

	Among those who have downloaded apps	Among all
Yes, have paid to download app for [CHILD]	35%	25%
No, have only downloaded free apps for [CHILD]	64%	45%

Q7. Which of the following items does [CHILD] have, if any?

a. [His/her] own cell phone	4%
b. [His/her] own tablet (such as an iPad, Kindle Fire, or similar device)	42%
c. [His/her] own iPod Touch or similar device	5%
d. [His/her] own educational game device like a Leapster/LeapPad, LeapFrog Epic, Playtime Pad, or V-Tech device (V-Smile, Mobigo, or Innotab)	33%
e. [His/her] own handheld video game player like a Game Boy, PSP, or Nintendo DS	14%
f. [His/her] own "smart toys" (internet-connected), such as Hello Barbie, Fisher-Price Smart Toy Bear, or CogniToys Dino	10%

Q8. [If Q7_a=yes] Is [CHILD]'s cell phone a smartphone or not? (In other words, can he/she go online, use apps or watch videos on it or not?)

	Among those with a cell phone	Among all
Yes	96%	4%
No	5%	*

* Less than 0.5 percent but greater than zero.

Q9. [If Q1=yes] Does [CHILD] have a TV in [his/her] bedroom or not?

	Among those with a TV in the home	Among all
Yes	30%	29%
No	70%	69%

Q10. [If Q2_l, Q2_m, Q2_g, Q4_a, Q7_b, Q7_c, or Q8=yes] How often, if ever, is there a smartphone, tablet, or laptop in [CHILD]'s room overnight?

	Among those with a smartphone, tablet, or laptop in the home	Among all
a. Every night	10%	10%
b. Most nights	6%	6%
c. Some nights	7%	7%
d. Hardly ever	11%	11%
e. Never	66%	66%

Q11. We're interested in whether [CHILD] has ever used a mobile device such as a smartphone or tablet to do any of the following activities. Please mark any of the activities [CHILD] has ever done on a mobile device:

a. Watch TV shows or movies	59%
b. Watch videos	73%
c. Play games	70%
d. Use apps	65%
e. Read books	28%
f. Take photos or videos	62%
g. Look at photos/videos (such as of family or friends)	77%

Q12. (If you are on a mobile device, please rotate your phone so that you see all the response options.) We also want to know how often [CHILD] does various activities, or if [he/she] has never done these activities.

	1.	2.	3.	4.	5.	6.
	Several times a day	Once a day	Several times a week	Once a week	Less than once a week	Has never done
How often does [CHILD]:						
a. Read or be read to	31%	26%	22%	6%	5%	10%
b. Watch TV	28%	25%	25%	5%	8%	9%
c. Watch DVDs or videotapes	5%	7%	19%	17%	32%	21%
d. Use a computer	4%	7%	15%	9%	22%	43%
e. Play video games on a console player like an Xbox, PlayStation, or Wii	2%	3%	9%	8%	23%	54%
f. Play games on a handheld player like a DS or similar device	2%	2%	7%	5%	18%	65%
g. Watch online videos	15%	9%	26%	11%	18%	20%
h. Use a mobile device (like a smartphone or tablet) to play games, watch videos, go online, or use apps	15%	12%	26%	11%	15%	21%

Q13. We're interested in how much time [CHILD] spent doing various activities yesterday. Some of these may be things [CHILD] is too young to do or never does. If that's the case, just mark "didn't do" and move on.

Thinking just about YESTERDAY, how much time did [CHILD] spend:	Percent who did activity yesterday	Time among those who did activity	Time among all
a. Listening to music	30%	1:01	:18
b. [If Q12_a=1-5] Reading or being read to from a print book	62%	:42	:26
c. [If Q12_a=1-5] Reading or being read to on a tablet, phone, or e-reader	10%	:40	:03
d. [If Q12_c=1-5] Watching DVDs or videotapes	20%	1:30	:17
e. [If Q12_b=1-5] Watching TV on a TV set	58%	1:40	:58
f. [If Q12_h=1-5] Watching videos or TV shows on a mobile device like a smartphone or tablet	29%	1:15	:21
g. [If Q12_d=1-5] Watching videos or TV shows on a computer	7%	1:05	:04
h. [If Q12_e=1-5] Playing games on a console video game player like an Xbox, PlayStation, or Wii	9%	1:02	:05
i. [If Q12_f=1-5] Playing games on a handheld game player like a Game Boy, PSP, or Nintendo DS	4%	:54	:01
j. [If Q12_h=1-5] Playing games on a smartphone or tablet	27%	1:01	:16
k. [If Q12_h=1-5] Skyping or video-chatting on a smartphone or tablet	6%	:23	:01
l. [If Q12_h=1-5] Doing anything else on a smartphone or tablet, such as taking or looking at pictures or videos, looking up things, social networking, or using other types of apps not already covered	17%	:41	:07
m. [If Q12_d=1-5] Skyping or video-chatting on a computer	1%	:30	*
n. [If Q12_d=1-5] Playing games on a computer	6%	:57	:03

Thinking just about YESTERDAY, how much time did [CHILD] spend:	Percent who did activity yesterday	Time among those who did activity	Time among all
o. [If Q12_d=1-5] Doing homework on a computer	5%	:47	:02
p. [If Q12_d=1-5] Doing anything else on a computer (photos, looking up things, social networking, other activities)	4%	:37	:01
q. [If Q2_j=1 'Yes'] Using a virtual reality headset	*	:56	†

* Less than 0.5 percent but greater than zero. † Less than one minute but greater than zero.

Q13B. [If Q13_q=>0] What did [CHILD] use a virtual reality headset for yesterday?

Note: Sample size too small for reliable results

Q14. [If Q13_e=>0] You wrote that [CHILD] spent [insert time] watching TV on a TV set yesterday.

About how much of that time, if any, was spent:	Percent who did activity	Among those who watched TV on a TV set yesterday	Among all
a. Watching shows you recorded earlier on a DVR	10%	1:07	:06
b. Watching shows from On Demand	6%	1:11	:04
c. Watching shows you downloaded or streamed, such as through Netflix, Amazon Prime Video, Hulu, or YouTube	22%	1:39	:21
d. Watching live TV	32%	1:38	:31

Q15. [If Q13_f=>0] You also wrote that [CHILD] spent [insert time] watching TV or videos on a mobile device yesterday.

About how much of that time, if any, was spent:	Percent who did activity yesterday	Among those who watched TV or videos on a mobile device yesterday	Among all
a. Watching videos on a site like YouTube	22%	1:08	:14
b. Watching TV shows or movies through a service like Netflix, Amazon Prime Video, or Hulu	9%	:59	:05
c. Something else	4%	:52	:01

Q16. [If Q13_g=>0] You also wrote that [CHILD] spent [insert time] watching TV or videos on a computer yesterday.

About how much of that time, if any, was spent:	Percent who did each activity yesterday	Among those who watched TV or videos on a computer yesterday	Among all
a. Watching videos on a site like YouTube	5%	:57	:02
b. Watching TV shows or movies through a service like Netflix, Amazon Prime Video, or Hulu	2%	:58	:01
c. Something else	1%	:48	*

* Less than one minute but greater than zero.

Q17. [If Q12_g=1-5] How often, if ever, does [CHILD] watch the following types of videos online — for example, on YouTube?

Among those who ever watch online videos:	1. Often	2. Sometimes	3. Hardly ever	4. Never	5. Don't know
a. How-to videos (e.g., how to draw, cook, dance, make crafts, make things with Legos or Play-Doh, skateboard)	9%	29%	15%	44%	3%
b. "Unboxing" videos (i.e., video of someone opening a new toy), or product demonstrations (such as showing off toys, makeup, clothes, etc.)	16%	18%	11%	51%	4%
c. Music videos	8%	25%	23%	42%	3%
d. Video gaming/gameplay videos	11%	16%	14%	56%	3%
e. Celebrity/behind-the scenes videos	1%	3%	8%	85%	3%
f. Challenges/stunts/tricks videos	3%	17%	17%	59%	4%
g. Animal videos	7%	39%	24%	26%	3%
h. Learning videos (i.e., alphabet, numbers, colors, shapes, feelings, etc.)	22%	42%	16%	17%	3%

Q18. How often, if ever, does [CHILD] do the following:

	1. Often	2. Sometimes	3. Hardly ever	4. Never	5. Don't know
a. [If Q11_f = 1 'Yes'] Edit pictures or videos on a computer or mobile device (such as add stickers, filters, or effects)					
▪ Among those who ever take photos or videos with mobile device	*	8%	14%	75%	2%
▪ Among all	*	5%	8%	46%	1%
b. [If Hispanic/Latino] Watch Spanish-language TV or videos	18%	35%	19%	26%	1%
c. [If Q12_d=1-5 OR Q12_h=1-5] Use a social networking site like Instagram, Snapchat, or Musical.ly					
▪ Among those who ever use a computer or mobile device	1%	4%	5%	87%	2%
▪ Among all	1%	3%	4%	70%	2%
d. [If Q12_d=1-5 OR Q12_h=1-5] Play a "social" game online with other kids, like Club Penguin, Minecraft, or Animal Jam					
▪ Among those who ever use a computer or mobile device	4%	10%	6%	76%	3%
▪ Among all	3%	8%	5%	62%	2%
e. [If Q12_h=1-5] Use a mobile device when s/he eats at home					
▪ Among those who ever use a mobile device	5%	13%	14%	65%	2%
▪ Among all	4%	11%	11%	52%	2%

	1. Often	2. Sometimes	3. Hardly ever	4. Never	5. Don't know
f. <i>[If Q12_h=1-5]</i> Use a mobile device when the family eats out at a restaurant					
▪ Among those who ever use a mobile device	4%	20%	22%	51%	2%
▪ Among all	3%	16%	18%	40%	2%
g. <i>[If Q12_h=1-5]</i> Use a mobile device when [he/she] is in a car or on public transportation					
▪ Among those who ever use a mobile device	11%	37%	22%	26%	2%
▪ Among all	9%	30%	18%	21%	2%
h. <i>[If Q2_l, Q2_o, Q4_a, Q7_b, or Q8=yes]</i> Ask questions to the voice-activated assistant on a phone or tablet <i>[If Q2_o=yes insert: or virtual assistant device]</i> , such as Siri, Alexa, or Google Assistant					
▪ Among those with a mobile or virtual assistant device in the home	3%	12%	11%	71%	*
▪ Among all	3%	11%	11%	70%	3%
i. <i>[If Q12_b, Q12_c, Q12_e, Q12_f, Q12_g, or Q12_h=1-5]</i> Watch TV or videos, or play video games in the hour before bedtime					
▪ Among those who ever watch TV or videos, or play video games	18%	34%	17%	28%	2%
▪ Among all	17%	32%	16%	26%	2%

* Less than 0.5% but greater than zero.

Q18h_2. *[If Q18_h=1-3]* In which of the following ways does [CHILD] use the voice-activated assistant (such as Siri, Alexa, or Google Assistant) *[If Q2_o= Yes insert: or virtual assistant device (such as Amazon Echo or Google Home)]*?

	Among those who ever use a voice-activated assistant	Among all
a. To get information	40%	10%
b. To get jokes	21%	5%
c. To play music	25%	6%
d. To search for video	26%	7%
e. To check the weather	12%	3%
f. Just to talk or fool around with	57%	14%
g. To make calls or send texts	5%	1%
h. Something else	4%	1%

Q19. [If Q12_b, Q12_c, or Q12_g=1-5] Thinking about the TV shows and videos [CHILD] uses the most, what is the MAIN way [he/she] found those titles?

Among those who watch TV or videos:

a. Recommended by [his/her] friends	1%
b. Watched by brothers or sisters or other relatives	19%
c. You or another adult selected them	44%
d. [CHILD] found them [him/her] self	26%
e. Other	1%
f. Don't know	3%
g. [CHILD] doesn't do this	6%

Q20. [If Q12_d, Q12_e, Q12_f, or Q12_h=1-5] Thinking about the apps and games [CHILD] uses the most, what is the MAIN way [he/she] found those titles?

Among those who play video games or use a computer or mobile device:

a. Recommended by [his/her] friends	2%
b. Played by brothers or sisters or other relatives	15%
c. You or another adult selected them	51%
d. [CHILD] found them [him/her] self	20%
e. Other	1%
f. Don't know	2%
g. [CHILD] doesn't do this	7%

Q21. How often, if ever, does [CHILD] use more than one type of media at a time — for example, use a phone or tablet while watching TV?

a. Most of the time	3%
b. Some of the time	15%
c. Only once in a while	26%
d. Never	56%

Q22. [If Q12_b, Q12_c, Q12_e, Q12_g, or Q12_h=1-5] When [CHILD] is doing each of the following, how often do you do it with [him/her]?

Among those who do each activity:	Most of the time	Some of the time	Hardly ever	Never
a. [If Q12_b=1-5 or Q12_c=1-5] Watching [his/her] TV shows	31%	54%	10%	5%
b. [If Q12_g=1-5] Watching online videos	29%	43%	21%	7%
c. [If Q12_e=1-5] Playing console video games	16%	38%	28%	16%
d. [If Q12_h=1-5] Using games or apps on a smartphone or tablet	20%	43%	27%	10%

Q23. [If Q12_b, Q12_c, Q12_d, Q12_e, Q12_f, Q12_g, or Q12_h=1-5] Overall, based on the content of the media [CHILD] uses and the amount of time [he/she] spends using it, do you think [his/her] use of media helps, hurts, or makes no difference to [his/her]:

Among those whose child uses any screen media:	Helps a lot	Helps a little	Makes no difference	Hurts a little	Hurts a lot
a. Social skills	8%	25%	51%	14%	1%
b. Learning	19%	48%	25%	7%	1%
c. Ability to focus	8%	25%	44%	20%	3%
d. Behavior	5%	21%	49%	22%	2%
e. Physical activity	5%	11%	42%	33%	8%
f. Creativity	14%	43%	32%	9%	1%

Q24. Do you agree or disagree with the following statements about screen media (TV, smartphones, tablets, video games):

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree
a. In general, the less time kids spend with screen media the better off they are.	28%	48%	21%	3%
b. [CHILD] benefits from the screen media [he/she]uses.*	9%	65%	22%	3%
c. It is difficult to get [CHILD] to stop using screen media when I ask.*	7%	32%	28%	32%
d. I am satisfied with the amount and quality of educational screen media available for [CHILD].	17%	63%	17%	2%

* Among those whose children use screen media.

Q25. Thinking about how much time [CHILD] spends with screen media, which of the following statements comes closest to your view?

a. [CHILD] spends too MUCH time with screen media.	23%
b. [CHILD] spends too LITTLE time with screen media.	7%
c. [CHILD] spends the RIGHT amount of time with screen media.	68%

Q26. [If Q12_b, Q12_c, Q12_d, Q12_e, Q12_f, Q12_g, or Q12_h=1-5] Do you ever use any type of device or app for limiting [CHILD]'s screen time?

Among those who use screen media:

Yes	15%
No	81%
Don't know	4%

Q27. [If Q12_d or Q12_h =1-5] Do you ever use any type of software or device to monitor or limit [CHILD]'s access to the internet, such as NetNanny or Circle with Disney?

Among those who use a computer or mobile device:

Yes	9%
No	87%
Don't know	3%

Q28. As you think about [CHILD]'s use of screen media, today and in the future, how concerned are you about each of the following?

	Very concerned	Somewhat concerned	Not too concerned	Not at all concerned
a. Spending too much time with media	25%	45%	22%	7%
b. How much sexual content is in media	43%	34%	14%	7%
c. How much violent content is in media	37%	41%	14%	7%
d. People smoking cigarettes in the media	20%	28%	34%	17%
e. Depictions of drugs and alcohol in the media	27%	39%	23%	10%
f. Cyberbullying online	33%	35%	21%	9%
g. Gender stereotypes of girls and boys in the media	19%	31%	32%	17%
h. Racial and ethnic stereotypes in the media	22%	33%	29%	14%
i. Companies collecting data about [CHILD] through the media	27%	40%	22%	9%
j. How much advertising and materialism there is in the media	28%	41%	21%	9%

Q29. Has your child's pediatrician ever talked to you about your child's media use?

Yes	20%
No	79%

Q30. Were you aware that the American Academy of Pediatrics has guidelines for media use for children at different ages?

Yes	45%
No	55%

Q31. Would you be interested in knowing the American Academy of Pediatrics guidelines for media use for your child?

Yes	51%
No	29%
I already know	20%

2017

THE COMMON SENSE CENSUS: MEDIA USE BY KIDS AGE ZERO TO EIGHT

Credits

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About Common Sense

Common Sense is a nonprofit, nonpartisan organization dedicated to improving the lives of kids, families, and educators by providing the trustworthy information, education, and independent voice they need to thrive in a world of media and technology. Our independent research is designed to provide parents, educators, health organizations, and policymakers with reliable, independent data on children's use of media and technology and the impact it has on their physical, emotional, social, and intellectual development. For more information, visit www.commonsense.org/research.

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